#40829 : Factors Associated with Nonunion After Posttraumatic Subtalar Arthrodesis

Preferred format : an ePoster Displayed

Authors:

SEUNG HUN WOO (1), Hyung Jin Chung (2)

1. Orthopaedic Surgery, Pusan National University Yangsan Hospital, Yangsan, Republic of Korea
2. Orthopaedic Surgery, Inje University Sanggye Paik hospital, Seoul, Republic of Korea

Keywords: Subtalar joint, subtalar arthrodesis, nonunion, risk factors

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: This study investigated the incidence of and risk factors for nonunion in patients with posttraumatic subtalar arthrodesis (SA). Methods: We reviewed all posttraumatic subtalar arthrodesis due to displaced intra-articular calcaneal fractures (DIACF) conducted at 3 institutions between January 2004 and December 2019. Patients were excluded for primary SA, SA due to primary subtalar arthritis, revision SA, or SA done less than 1 year after trauma with persistent infection. Nonunion was determined by CT scans at 6 months postoperatively. Patient specific factors (sex, age, specific comorbidities, ASA scores, body mass index, smoking, and postoperative infection) and surgeon specific factors (type of surgical approach, screws, screw configuration, surgery, and graft material) were evaluated as potential risk factors. Results: The overall nonunion rate was 13.3% (22 of 165 cases). In the adjusted models, smoking, parallel screw configuration, and freeze-dried iliac crest were risk factors for nonunion of posttraumatic SA. The final multivariate logistic regression analysis demonstrated that smoking (OR = 3.64; 95% CI = 1.23 to 10.75), parallel screw configuration (OR = 5.70; 95% CI = 1.62 to 20.06), and freeze dried iliac crest (OR = 9.16; 95% CI = 2.28 to 36.79). Conclusion: In patients with a smoking history, those with parallel screw configuration fixation, or those receiving freeze dried iliac crest as an interpositional graft, had a significantly higher rate of nonunion.

#40830 : Parallel versus Angulated Screw Configuration in Posttraumatic Subtalar Arthrodesis

Preferred format : an ePoster Displayed

Authors:

SEUNG HUN WOO (1), Hyung Jin Chung (2)

1. Orthopaedic Surgery, Pusan National University Yangsan Hospital, Yangsan, Republic of Korea
2. Orthopaedic Surgery, Inje University Sanggye Paik hospital, Seoul, Republic of Korea

Keywords: subtalar joint, subtalar joint arthrodesis, screw configuration

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: We aimed to compare radiographic union and clinical outcomes between parallel and angulated screw configurations (SC) for patients undergoing subtalar arthrodesis due to posttraumatic subtalar arthritis (PSA) after displaced intra-articular calcaneal fractures (DIACF). Methods: We retrospectively reviewed 140 consecutive PSA cases from March 2011 to December 2021 [parallel SC: Group 1 (n=80); angulated SC: Group 2 (n=60)]. Radiographic union, Foot and Ankle Outcome Scores (FAOS), and visual analogue scale (VAS) scores were among the outcome assessments. Six months after surgery, nonunion was confirmed based on plain radiographs, clinical evaluation, and computed tomography. Results: Group 1 and 2 included 14 (17.5%) and 3 (5.0%) nonunion cases, respectively ($p=0.035$). There was no significant difference in preoperative FAOS and VAS scores between the two groups. However, Group 2 has significantly better clinical outcomes in two of the five FAOS domains (sports and quality of life), as well as VAS scores at 3 and 6 months postoperatively, and at the final follow-up ($p<0.05$). Conclusion: The use of angulated SC for PSA had a lower nonunion rate and superior clinical outcomes than parallel SC. Obtaining better radiological and clinical outcomes when using angulated SC, rather than parallel SC would be advantageous.

#40834 : Autologous Matrix Induced Chondrogenesis plus Peripheral Blood Concentrate in chondral defects at the ankle as part of a complex surgical Approach - 5-year followup

Preferred format : a podium presentation

Authors:

Martinus Richter (1), Stefan Zech (1), Issam Naef (1), Stefan A Meissner (1)

1. Department for Foot and Ankle Surgery Nuremberg and Rummelsberg, Hospital Rummelsberg, Schwarzenbruck, Germany, Schwarzenbruck, Germany

Keywords: Chondral lesion; Autologous Matrix Induced Chondrogenesis (AMIC); Peripheral Blood Concentrate (PBC); Ankle

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction/ Purpose The aim of the study was to assess 5-year-follow-up (5FU) after Autologous Matrix Induced Chondrogenesis plus Peripheral Blood Concentrate (AMIC+PBC) in chondral lesions at the ankle as part of a complex surgical approach. Methods In a prospective consecutive non-controlled clinical follow-up study, all patients with chondral lesion at the ankle treated with AMIC+PBC from July 17, 2016 to May 31, 2017 were included. Size and location of the chondral lesions, the Visual-Analogue-Scale Foot and Ankle (VAS FA) and the EFAS Score before treatment and at 5FU were analysed and compared with previous 2-year-follow-up (2FU). Peripheral Blood Concentrate (PBC) was used to impregnate a collagen I/III matrix (Chondro-Gide, Wolhusen, Switzerland) that was fixed into the chondral lesion with fibrin glue. Results One hundred and twenty-nine patients with 136 chondral lesions were included in in the study. The chondral lesions were located as follows (n (%)), medial talar shoulder only, 62 (46); lateral talar shoulder only, 42 (31); medial and lateral talar shoulder, 7 (10); tibia, 18 (13). The average for lesion size was 1.8 cm2, for VAS FA 45.7 and for EFAS Score 9.8. 2FU/5FU was completed in 105 (81%)/104(81%) patients with 112/111 previous chondral lesions. VAS FA improved to 79.8/84.2 and EFAS Score to 20.3/21.5 (2FU/5FU). No parameter significantly differed 2FU and 5FU. Conclusion AMIC+PBC as part of a complex surgical approach led to improved and high validated outcome scores at 2FU/5FU. 2FU and 5FU did not differ.

#40836 : Autologous Matrix Induced Chondrogenesis plus Peripheral Blood Concentrate in chondral defects of the 1st metatarsophalangeal joint - 5-year followup

Preferred format : a podium presentation

Authors:

Martinus Richter (1), Stefan Zech (1), Issam Naef (1), Stefan A Meissner (1)

1. Department for Foot and Ankle Surgery Nuremberg and Rummelsberg, Hospital Rummelsberg, Schwarzenbruck, Germany, Schwarzenbruck, Germany

Keywords: Chondral lesion; Autologous Matrix Induced Chondrogenesis (AMIC); Peripheral Blood Concentrate (PBC); 1st Metatarsophalangeal Joint

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction/Purpose The aim of the study was to assess the 5-year-follow-up (5FU) after Autologous Matrix Induced Chondrogenesis plus Peripheral Blood Concentrate (AMIC+PBC) in chondral defects at the first metatarsophalangeal joint (MTP1). Methods In a prospective consecutive non-controlled clinical follow-up study, all patients with chondral lesion at MTP1 treated with AMIC+PBC from July 17, 2016 to May 31, 2017 were included. Size and location of the chondral lesions, the Visual-Analogue-Scale Foot and Ankle (VAS FA) and the EFAS Score before treatment and at 5FU were analysed and compared with previous 2-year-follow-up (2FU). Peripheral Blood Concentrate (PBC) was used to impregnate a collagen I/III matrix (Chondro-Gide, Wolhusen, Switzerland) that was fixed into the chondral lesion with fibrin glue. Results One hundred and ninety-eight patients with 238 chondral defects were included. In 21% of patients no deformities in the forefoot were registered. The average degree of osteoarthritis was 2.2. The chondral defect size was 1.0 cm2 on average. The most common location was metatarsal dorsal (33%), and in most patients one defect was registered (74%). Corrective osteotomy of the first metatarsal was performed in 79%. 176 (89%)/164 (83%) patients completed 2FU/5FU. VAS FA/EFAS Score were preoperatively 46.8/11.9 and improved to 74.1/17.1 at 2FU and 75.0/17.3 at 5FU on average. No parameter significantly differed between 2FU and 5FU. Conclusion AMIC+PBC as treatment for chondral defects at MTP1 as part of joint preserving surgery led to improved and high validated outcome scores at 2FU and 5FU. The results between 2FU and 5FU did not differ.

#40838 : Comparison total joint replacement with arthrodesis of the 1st metatarsophalangeal joint

Preferred format : a podium presentation

Authors:

Martinus Richter (1), Stefan Zech (1), Issam Naef (1), Stefan A Meissner (1)

1. Department for Foot and Ankle Surgery Nuremberg and Rummelsberg, Hospital Rummelsberg, Schwarzenbruck, Germany, Schwarzenbruck, Germany

Keywords: First metatarsophalangeal joint; Arthrodesis; Total joint replacement; Roto-Glide

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background The aim of this study was to compare outcome (clinical, patient-reported outcome measures, radiological, joint motion and pedographic) of total joint replacement with Roto-Glide (Implants International, Cleveland, UK) (RG) and arthrodesis (A) of the first metatarsophalangeal joint (MTP1). Methods All patients that completed follow-up (FU) of at least 24 months after RG and A before May 1, 2022 were included in the study. Preoperatively and at FU, radiographs and/or weight-bearing computed tomographies (WBCT) were obtained. European Foot and Ankle Society Score (EFAS Score), MTP1 range of motion for dorsi-/plantarflexion (DF/PF) were registered and compared pre-operatively and FU. Results Seventy RG and 72 A were included. Preoperative VASFA/EFAS Score did not differ between RG and A (Average scores, VASFA, RG/A, 50.6/45,6; EFAS Score, RG/A, 10,7/10,6; each $p>0.05$). Wound healing delays without further operative measures were registered in 4 (6%) patients for RG and 5 (7%) for A ($p=0.67$), and 5 revisions in 5 (7%) for RG and 12 in 8 (11%) for A ($p=0.05$). The longest available FU was higher in RG than in A (RG/A, 47/37 months on average, $p<0.001$). VASFA/EFAS Score at FU was higher in RG than in A (Average scores, VASFA, RG/A, 72,6/63,6; EFAS Score, RG/A, 16.1/14.1; each $p<0.05$). DF/PF was higher in RG than in A (Average values DF/PF RG, 36.1/14.0, A 0/0, $p<0.001$) Conclusion RG showed lower revision rate and higher PROMs, better joint motion (DF/PF) and more physiologic force distribution than at longer FU than A. RG is a valuable alternative for A.

#40840 : Results of more than 20,000 scans with Weightbearing CT - Impact on costs, radiation exposure, and procedure time

Preferred format : a podium presentation

Authors:

Martinus Richter (1), Stefan Zech (1), Issam Naef (1), Stefan A Meissner (1)

1. Department for Foot and Ankle Surgery Nuremberg and Rummelsberg, Hospital Rummelsberg, Schwarzenbruck, Germany, Schwarzenbruck, Germany

Keywords: Weightbearing CT, WBCT, Radiographs, Radiation dose, Time spent

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background The purpose of this study was to assess the benefit of using Weightbearing CT (WBCT) instead of radiographs (R) and/or CT as the standard imaging modality, evaluating image acquisition time, radiation dose, and cost-effectiveness. Methods All patients who obtained a WBCT from July 1, 2013 until August 31, 2023 were included. Image acquisition time (T), radiation dose (RD), and cost-effectiveness were analyzed and compared between the time period using WBCT (yearly average) and the parameters from 2012, before the availability of WBCT (RCT group). Results 20,145 WBCT scans were obtained from 9,065 patients (9,056 scans (45%) before treatment; 11,080 scans (55%) at follow-up). On a yearly average, 1,975 WBCTs (bilateral scans) and an additional 11.5 CTs (bilateral feet and ankles) were obtained (WBCT group). In 2012, 1,850 Rs (bilateral feet, dorsoplantar and lateral, metatarsal head skyline view) and 254 CTs were obtained from 885 patients (RCT group). The mean yearly RD was 4.3/4.8uSv for the WBCT/RCT groups (mean difference of 0.5 uSv; a decrease of 10% for the WBCT group; p<.01). Yearly mean T was 115/494 hours in total (3.5/16.0 minutes per patient) for WBCT/RCT groups (mean difference of 379 hours; a 77% decrease for the WBCT group; p<.01). Yearly cost-effectiveness was a mean profit of 55,441/-723 Euro for WBCT/RCT groups. Conclusions 20,145 WBCT scans from 9,065 patients over a period of 10.2 years at a foot and ankle department resulted in 10% decreased RD, 77% decreased T, and increased financial profit (65 Euros per patient) for the institution.

#40845 : Risk Factors for Postoperative Re-sprain following Suture Tape Implantation for Anterior Talofibular Ligament Insufficiency

Preferred format : a podium presentation

Authors:

Jun Young Choi (1), Jin Soo Suh (1), Kim Min Jin (2)

1. Deparment of Orthopaedic Surgery, Inje University Ilsan Paik Hospital, Goyang-si, Republic of Korea
2. , Sooncheonhyang University Bucheon Hospital, Seoul, Republic of Korea

Keywords: ankle, anterior talofibular ligament, chronic lateral ankle instability, suture tape, suture tape implantation, postoperative failure

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Anterior talofibular ligament (ATFL) insufficiency encompasses situations in which (i) frequent sprains cause ATFL loss, as evidenced by ATFL non-visualization on preoperative magnetic resonance imaging, or (ii) minimal healthy ATFL tissue for repair is left after the removal of the large os subfibulare. Suture tape implantation (STI) can be indicated for these cases rather than conventional ligament repair. To investigate the incidence of postoperative re-sprain in patients who underwent STI for ATFL insufficiency and to identify risk factors influencing the occurrence of postoperative re-sprain. Methods: A total of 68 patients who underwent STI for ATFL insufficiency from January 2016 and December 2021 were retrospectively evaluated. The minimum follow-up duration for inclusion was 2 years after surgery. All included patients were divided into two groups according to the presence of postoperative re-sprain during the follow-up period. Multiple clinicoradiographic parameters were measured, and binary logistic regression analysis was performed to determine the factors influencing postoperative re-sprain. Results: Postoperative re-sprain occurred in 27.9% of the 68 patients, and multiple re-sprains persisted in 10.3%. Postoperative re-sprain was more likely to occur in patients who smoked after surgery (odds ratio [OR], 3.510), had generalized ligament laxity (OR, 4.364), and engaged in occupations requiring high physical activity levels (OR, 4.421), including soldiers, professional athletes, athletic students, and postmen. Conclusion: After STI for ATFL insufficiency, extra caution is warranted in patients with risk factors, necessitating meticulous attention to their care.

#40846 : Posterior ankle arthroscopy should be selectively performed for osteochondral lesions on the posteromedial talar dome: A review of arthroscopic videos

Preferred format : a podium presentation

Authors:

Jun Young Choi (1), Jin Soo Suh (1), Kim Min Jin (2)

1. Deparment of Orthopaedic Surgery, Inje University Ilsan Paik Hospital, Goyang-si, Republic of Korea
2. , Sooncheonhyang University Bucheon Hospital, Seoul, Republic of Korea

Keywords: Ankle, talus, osteochondral lesion, posteromedial, arthroscopy, microfracture, approach

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: We investigated whether arthroscopic treatment of posteromedial OLTs can be accomplished solely through anterior ankle arthroscopy. We hypothesized that specific conditions may prompt posterior ankle arthroscopy. Methods: We retrospectively reviewed videos of patients who underwent primary arthroscopic microfractures for OLTs on the posteromedial talar dome between 2010 and 2021. We focused on whether visualization of the posteromedial OLT was adequate through the anteromedial or anterolateral portal in the anterior ankle arthroscopy group (posteromedial or posterolateral portal in the posterior ankle arthroscopy group). We assessed whether a sufficient microfracture technique was feasible during surgery. Results: Seventy-nine patients were included in this study, among which 62 and 17 were assigned to the anterior and posterior ankle arthroscopy groups, respectively. Posteromedial OLTs were fully observed through the anteromedial portal in 79.0% of cases and better observed through the anterolateral portal (93.5%). Only four patients (6.5%) showed limited visualization and underwent an insufficient microfracture procedure. In two of these patients, we observed challenges in advancing the arthroscope and other devices owing to the narrow joint space even with sufficient distraction, whereas the remaining two showed infeasibilities derived from far posterior locations. In contrast, microfractures via posterior ankle arthroscopy were successfully performed in all patients (100%). Conclusions: When surgically treating patients with posteromedial OLTs, we recommend considering anterior ankle arthroscopy unless a combined pathology requires surgical intervention for the posterior ankle. Posterior ankle arthroscopy should be selectively utilized only for far posteromedial OLTs or in patients with narrow joint space, even with sufficient distraction.

#40853 : The Comparison of Clinical Outcomes between Plantar Versus Dorsal Approaches in Morton's Neuroma Excision: A Systematic Review and Meta-Analysis

Preferred format : a podium presentation OR a poster presentation

Authors:

Wonyong Lee (1), John McDonald (2), Mohammad Azam (1), Andrew Lachance (1)

1. Orthopaedic Surgery, Guthrie clinic, Sayre, USA
2. , Geisinger Commonwealth School of Medicine, Scranton, USA

Keywords: Morton’s neuroma, neurectomy, excision, plantar incision, dorsal incision, complications, clinical outcomes

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Current literature lacks comprehensive information comparing the clinical outcomes of plantar and dorsal approaches for Morton's neuroma excision. This systematic review and meta-analysis was conducted to evaluate and compare the clinical outcomes of neurectomy for Morton's neuroma, focusing on the differences between the plantar and dorsal approach. Methods: Our comprehensive literature review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines and utilized databases including PubMed, Embase, Web of Science, and the Cochrane Library. Data investigated in this study included postoperative sensory loss, scar tenderness, reoperation, histopathology, complications, pain score, patient satisfaction, functional scores, and time to weight bearing. Results: Total eight studies were included in this study. In aggregate, 237 neuromas underwent excision using the plantar approach, while 312 neuromas were treated via the dorsal approach. A significantly higher rate of postoperative reduced sensory was found in the dorsal group: 48.5% (64/132) Vs. 62.0% (80/129) with the relative ratio (RR) of 0.79 (95% CI, 0.64-0.97). A significantly higher rate of postoperative scar tenderness was noted in the plantar group: 16.7% (32/192) Vs. 6.2% (14/225) with the RR of 2.27 (95% CI, 1.28-4.04). Regarding the histopathology, 99.3% (143/144) and 97.1% (134/138) accuracy rate was confirmed in the plantar approach and dorsal approach, respectively, with the RR of 1.02 (95% CI, 0.98-1.07). Conclusions: This study compared postoperative outcomes following Morton’s neuroma excision between the dorsal and plantar approach. We recommend detailed discussions with patients prior to surgery to weigh the advantages and disadvantages of each approach.

#40854 : The Clinical Outcome Comparison Between Trans-Syndesmotic Fixation and Deltoid Ligament Repair in Unstable Ankle Fractures with Medial Clear Space Widening: A Systematic Review and Meta-analysis

Preferred format : a podium presentation OR a poster presentation

Authors:

Oliver Sogard (1), John McDonald (2), Michael Elder Waters (1), Wonyong Lee (1)

1. Orthopaedic Surgery, Guthrie clinic, Sayre, USA
2. , Geisinger Commonwealth School of Medicine, Scranton, USA

Keywords: Ankle fracture, Medial clear space widening, Deltoid ligament, Syndesmosis, Outcomes

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Due to the variability in evidence supporting either trans-syndesmosis fixation or deltoid ligament repair in unstable ankle fractures with medical clear space (MCS) widening makes it unclear which surgical technique leads to the best patient outcomes. The goal of our systematic review and meta-analysis was to compare clinical outcomes of trans-syndesmotic fixation versus anatomic deltoid ligament repair in the management of unstable ankle fractures with MCS widening. Methods: Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were utilized in this study. A comprehensive and systematic search was conducted using the PubMed, Embase, Web of Science and Cochrane Library databases. Outcomes investigated in this review included the rates of syndesmotic malreduction, removal of hardware, postoperative complications including wound issues, and functional/pain scores. Results: A total of five studies were selected in this review, with 280 unstable ankle fractures with MCS widening: 165 for the trans-syndesmotic fixation group and 115 for the anatomic deltoid ligament repair group. Compared to the trans-syndesmosis fixation group, the deltoid repair group showed significant lower rates of syndesmotic malreduction rates and removal of hardware: 6.5% (4/61) Vs. 27% (16/59) (RR=0.26, 95% CI=[0.10, 0.68]), and 2.6% (3/115) Vs.54.5% (90/165) (RR=0.06, CI=[0.02, 0.14]), respectively. No significant differences were found between the two groups in postoperative wound complications, reoperations, and functional scores including AOFAS and VAS pain score. Conclusions: Based on our findings, anatomic deltoid ligament repair may be more suitable for addressing MCS widening in the management of unstable ankle fractures compared to trans-syndesmosis fixation.

#40855 : The Impact of Timing in Ankle Fracture Fixation on Postoperative Wound Complications: A Critical 24-Hour Cutoff Point Explored through Systematic Review and Meta-Analysis

Preferred format : a podium presentation OR a poster presentation

Authors:

Wonyong Lee (1), John McDonald (2), Shaya Shahsavarani (1), Alexander Edelstein (1)

1. Orthopaedic Surgery, Guthrie clinic, Sayre, USA
2. , Geisinger Commonwealth School of Medicine, Scranton, USA

Keywords: Ankle fracture, Surgical timing, Postoperative wound complications

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction This systematic review and meta-analysis aims to examine the effect of surgical timing on postoperative wound complications, specifically investigating the significance of a 24-hour cutoff point. Methods This literature review was conducted in adherence to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines utilizing databases including PubMed, Embase, Web of Science, and the Cochrane Library, carried out on January 30, 2024. The inclusion criteria for studies were as follows: (1)Research comparing clinical outcomes following surgical fixation for ankle fractures between early and delayed fixation groups, specifically using a 24-hour cutoff point, and (2)Reports of at least one of the following outcomes: postoperative wound complications: superficial/deep infection, length of stay in the hospital, and fixation failure. Exclusion criteria were patients with open fractures, polytrauma, pilon fractures, physeal fractures, or fractures of the talus/calcaneus, and those initially treated with an external fixator. Results Eight studies with 1183 patients were included in our review. Early fixation was performed for 572 patients while delayed fixation for 611 patients. Compared to the delayed fixation group, the early fixation group showed a significant lower postoperative wound complication rate: 4.4% (23/525) Vs. 10.5% (60/571) (RR=0.37, 95% CI=[0.22, 0.60]), and a significant shorter length of stay in the hospital: standardized mean difference (SMD)=-1.28, CI=[-2.09, -0.47]), respectively. Conclusion Based on our results, early surgical intervention within the first 24 hours should be considered to mitigate the risk of postoperative wound complications and shorten the length of stay in in management of ankle fractures.

#40856 : Does specialty matter? A comparison of early postoperative clinical outcomes following lower extremity amputations between orthopaedic surgeons and vascular surgeons

Preferred format : a podium presentation OR a poster presentation

Authors:

Shaya Shahsavarani (1), Oliver Sogard (1), Wonyong Lee (1)

1. Orthopaedic Surgery, Guthrie clinic, Sayre, USA

Keywords: Lower extremity amputation, Postoperative outcomes, Specialty, Orthopaedic surgery, Vascular surgery

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Lower extremity amputations (LEAs) are critical procedures often necessitated by severe trauma or peripheral vascular disease. The surgeon's specialty may influence postoperative outcomes. However, comparative data between the specialty of orthopaedic surgery (OS) and vascular surgery (VS) remain limited. Our study aims to investigate outcomes following LEAs between the specialty of OS and VS by analyzing data from the National Surgical Quality Improvement Program (NSQIP). Methods: Data from NSQIP (2016-2022) were analyzed. The LEAs were identified using Current Procedural Terminology (CPT) codes, including below-knee amputations (BKAs), above-knee amputations (AKAs), and foot amputations. Differences in demographics, comorbidities, operative variables, and early 30-day postoperative outcomes between OS and VS were compared. Results: A total of 28,549 LEAs were identified: 6,687 (23.4%) by OS and 21,862 (76.6%) by VS. VS patients had more comorbidities, including diabetes, bleeding disorders, heart failure, renal failure, and higher ASA class. LEAs by VS showed higher mortality (3.9% vs.2.4%, $p<0.001$), reoperations (9.1% vs.7.7%, $p=0.001$), and readmissions (14.0% vs.11.3%, $p<0.001$). VS also had a higher rate of non-home discharge (65.9% vs.47.1%, $p<0.001$). OS had longer operative times (78.5 minutes vs.64.2 minutes, $p<0.001$) and more emergent cases (17.9% vs.15.5%, $p<0.001$). Conclusion: VS had higher rates of mortality, reoperation, and readmission in the early 30-day postoperative period, along with a greater tendency for non-home dispositions, following LEAs. However, these outcomes may be influenced by the higher comorbidity burden in VS patients. Further analysis is needed to correlate diagnoses with outcomes, enhance patient outcome predictions, and set realistic patient expectations.

#40870 : Subtalar arthroereisis implant migration rate in symptomatic flexible flat feet children: a cohort study of long term follow up result

Preferred format : a podium presentation OR a poster presentation

Authors:

Tsungyu Lan (1)

1. orthopedics, Far-Eastern Memorial Hospital, New Taipei City, Taiwan

Keywords: Subtalar arthroereisis, flat feet ,children

Your abstract (DO NOT add the title, list of authors or keywords in this field)

introduction Pediatric symptomatic flexible flatfoot can be treated by subtalar arthroeresis. Hence, the sustained evaluation of the treatment results is very crucial. This study aimed to disclose the subtalar arthroeresis implant migration rate from short-term to long-term follow-up Methods Retrospectively examined flatfoot children from 2014 to 2023. Forty-eight children with 88 feet were enrolled in the study. Implant migration index(IMI) is evaluated by ankle AP view. The length from the implant tip to the medial cortex of the talus is “a” , and the transverse diameter of the talus is “b”. The IMI is “a/b”, and it indicates the position of the arthroereisis implant. The index was recorded on immediate post-OP, post-OP 1 month, post-OP 3 months, post-OP 1 year, and post-OP 5 years. Results The IMI of immediate post-OP, post-OP 1st month, post-OP 3rd month, post-OP 1st year, and post-OP 5th year; are 0.393, 0.456, 0.460, 0.470 and 0.466, respectively ($p<0.05$). The migration rate between immediate post-OP to post-OP 1st month is 0.063, post-OP 1st month to post-OP 3rd month is 0.004, and post-OP 1st month to post-OP 5th year is 0.010, respectively. Discussion The IMI of good implant position should be less than 0.5, all of our cases are satisfied to the guideline. The post-OP 1st month has the highest migration rate, and few changes of the IMI at the following long-term follow-up. Conclusions: Subtalar arthroereisis is a reliable procedure to treat the pediatric symptomatic flexible flatfoot. The implant migrates the most in the first month postoperatively.

#40876 : Fixed-bearing versus mobile-bearing total ankle replacement survivorship. A meta-analysis

Preferred format : a podium presentation OR a poster presentation

Authors:

González-Alonso Marcos (1), Trapote Cubillas Ana R (2), Madera González Francisco J (2), Hernández Fernández Óscar (2), Sánchez Lázaro Jaime A. (2)

1. Trauma and Orthopaedic Surgery, Complejo Asistencial Universitario de León, Léon, Spain
2. Trauma and Orthopaedic Surgery, Complejo Asistencial Universitario de León, León, Spain

Keywords: ankle, ankle replacement, arthroplasty, osteoarthritis, mobile-bearing, fixed-bearing

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Main objective of this research is to know if there is a different survival rate between fixed bearing (FB) and mobile bearing (MB) total ankle replacement (TAR). Methods: A systematic search was performed in PubMed, Cochrane, EMBASE and ClinicalTrials.gov databases to identify published studies from August 2018 to September 2022 including results for FB and MB TAR survivorship. Inclusion criteria included 1) primary TAR in one or both feet in which implant could be identified, 2) a minimum of 20 procedures reported, 3) reported implant survivorship or calculable and 4) a minimum of 12 months follow-up for level 1–3 studies or 60 months for level 4 studies. Results: 3902 ankles in 28 studies were included. 719 were FB and 3104 MB with an overall survivorship of 94% (95% CI [0.89; 0.97]) and 89% (95% CI [0.86; 0.92]) respectively. After subgroup analysis, we did not find differences among both groups ($p = 0.429$). Meta-regression analysis showed that longer follow-up was associated with lower survival rates in MB group ($p = 0.000$) while no other relationships were found with other factors (age, level of evidence or conflict of interests). Conclusions: No differences in survival rates between both groups were found. Age and other studied confounders were not found to be related with implant survivorship. However, longer follow-up was found to be related with lower survival rates. Studies with longer follow-up and higher level of evidence are needed to confirm results.

#40882 : Supramalleolar osteotomy for malaligned total ankle replacement

Preferred format : a podium presentation OR a poster presentation

Authors:

Daniel Saraiva (1), Daniel Freitas (2), Rodrigues André (3), Marco Sousa (3), Pato Tiago (3), José Tulha (3)

1. Orthopedic Department, Foot and Ankle Unit, Hospital da Prelada, Porto, Portugal
2. , Foot and Ankle Unit, Hospital da Prelada, Porto, Portugal
3. , Orthopedic Department, Hospital da Prelada, Porto, Portugal

Keywords: Supramalleolar, osteotomy, total, ankle, replacement

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Total ankle replacement (TAR) is an established method of treatment for end-stage ankle arthritis. TAR malalignment is a common cause of failure, either by increasing the risk of component loosening, cyst formation or polyethylene fracture. Methods: We present a case of a 57-year-old female patient who underwent TAR eight-years ago. The TAR was positioned in varus, although in a parallel position between the tibia and talar components. She developed increasing pain along her medial ankle, with no response to conservative treatment. Standing weightbearing anteroposterior, lateral and Saltzmann views, as well as CT-scan, demonstrated the TAR varus position but with adequate interface between TAR components and bone, without any signs of polyethylene wear or bone cysts. We decided to perform a lateral closing wedge supramalleolar osteotomy combined with a lateral malleolus osteotomy, in order to realign the TAR. Results: At 24-month follow-up, the Visual Analog Scale for pain (VAS-Pain) decreased from 8 (preoperatively) to 0. The Foot and Ankle Outcome Score (FAOS) increased from 12% (preoperatively) to 96%. The patient is very satisfied with the result, as she kept mobility of her ankle and avoided complex TAR revision or ankle fusion. Radiographic assessment demonstrates a normally aligned TAR with complete union of the osteotomies. There was no postoperative complications, including wound problems, hardware related issues or neurovascular injuries. Conclusion: This report illustrates how supramalleolar osteotomy is a valid option for malaligned TAR, avoiding complex TAR revision or conversion to ankle fusion, relieving symptoms and improving midterm clinical scores.

#40883 : Midfoot fusion following Chopart fracture-dislocation

Preferred format : a podium presentation OR a poster presentation

Authors:

Daniel Saraiva (1), Daniel Freitas (2), Rodrigues André (3), Pato Tiago (3), Marco Sousa (3), José Tulha (3)

1. Orthopedic Department, Foot and Ankle Unit, Hospital da Prelada, Porto, Portugal
2. , Foot and Ankle Unit, Hospital da Prelada, Porto, Portugal
3. , Orthopedic Department, Hospital da Prelada, Porto, Portugal

Keywords: Midfoot, fusion, Chopart, fracture-dislocation

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Fracture-dislocation of the Chopart joint usually results from high energy trauma, and poor outcomes are expected even after initial adequate surgical treatment. Methods: We present a case of a 21-year-old male patient who sustained trauma of his left foot which resulted in complex fracture-dislocation of the Chopart joint, two years before our first evaluation. He was initially treated with open reduction and internal fixation with Kirschner wires, but during follow-up he developed severe pain and deformity of his left midfoot, without any improvement with non-surgical treatment. Standing weightbearing anteroposterior, lateral and Saltzmann views, as well as CT-scan, demonstrated severe degenerative arthritis affecting talonavicular, naviculocuneiform and calcaneocuboid joints. We decided to perform medial column and calcaneocuboid arthrodeses using screws and bone autograft harvested from the ipsilateral proximal tibia. Results: At 36-month follow-up, the Visual Analog Scale for pain (VAS-Pain) decreased from 9 (preoperatively) to 1. The Foot and Ankle Outcome Score (FAOS) increased from 8% (preoperatively) to 88%. The patient is very satisfied with the result and returned to his previous occupation. Radiographic assessment demonstrates a normally aligned midfoot and hindfoot with complete union of the arthrodeses. There were no postoperative complications, including wound healing problems, hardware related issues or neurovascular injuries. Conclusion: This report illustrates how medial column and calcaneocuboid arthrodeses using screws and bone autograft harvested from the ipsilateral proximal tibia is a valid option for severe degenerative arthritis affecting midfoot joints after complex Chopart fracture-dislocation, relieving symptoms and improving midterm clinical scores.

#40884 : Forefoot Morphotypes in Cavovarus Feet – A Novel Classification

Preferred format : a podium presentation

Authors:

Karan Malhotra (1, 2), Shelain Patel (1), Nick Cullen (1), Matt Welck (1)

1. , Royal National Orthopaedic Hospital, Stanmore, United Kingdom
2. Honorary Associate Professor, University College London, London, United Kingdom

Keywords: cavovarus, deformity, forefoot

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: The cavovarus foot is a complex 3-dimensional deformity. Surgical management involves realignment of the hindfoot and soft tissue balancing, followed by forefoot balancing. Our aim was to classify the pattern of residual forefoot deformities once the hindfoot is corrected, to guide forefoot correction. Methods: We included 20 cavovarus feet from 16 adult patients with Charcot-Marie-Tooth who underwent weightbearing CT (mean age 43.4 years, 14 males). Patients had flexible deformities, with no previous surgery. Using specialized software (Bonelogic® 2.1, Disior™) a 3-dimensional, virtual model was created. Using data captured from normal feet as a guide, the talonavicular joint of the cavovarus foot was digitally reduced to a 'normal' position simulating surgical correction. Models of the corrected position were exported and geometrically analyzed using Blender 3.64 to identify anatomical trends. Results: We identified 4 types of cavovarus forefoot morphotypes. Type 0: a balanced forefoot (2 cases, 10%). Type 1: a forefoot where the first metatarsal was relatively plantarflexed to the rest of the foot, with no significant residual adduction after talonavicular joint correction (12 cases, 60%). Type 2: a forefoot where the second and first metatarsals were progressively plantarflexed, with no significant adduction (4 cases, 20%). Type 3: a forefoot where the metatarsals were adducted after talonavicular de-rotation (2 cases, 10%). Conclusion: We identified 4 forefoot morphotypes in cavovarus feet. It is important to recognize and anticipate the residual forefoot deformities after hindfoot correction as different treatment strategies may be required for different morphotypes to achieve balanced correction.

#40886 : Analysis of Pre- and Postoperative Magnetic Resonance Imaging (MRI) and Functional status in Anterior Talofibular Ligament Injury Managed with Arthroscopic Modified Broström Procedure augmented with internal bracing

Preferred format : a podium presentation OR a poster presentation

Authors:

Tsungyu Lan (1)

1. orthopedics, Far-Eastern Memorial Hospital, New Taipei City, Taiwan

Keywords: Anterior Talofibular Ligament, arthroscopic Brostrom, internal bracing

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Magnetic Resonance Imaging (MRI) stands out as a potent tool for assessing ATFL (Anterior Talofibular Ligament) injuries, providing insights into the state of lateral ankle ligaments and associated pathology. Ligament intensity exhibits a robust negative linear correlation with material biomechanical strength properties. To address ATFL injuries, the arthroscopic modified Broström procedure with internal bracing has gained popularity, offering a swifter return to daily activities. Method We prospectively enrolled 100 patients diagnosed with ATFL injuries and performed arthroscopic modified Broström procedures with internal bracing. Pre-operative and 6-month post-operative MRIs of the injured ankle were obtained. AOFAS scores were recorded 1st, 2nd, and 4th months postoperatively. The ATFL morphology was categorized into four groups: Increased intensity, wavy-shaped, discontinuity, and non-visualization. Result The mean preoperative AOFAS score was 81.4. At the 2-month and 4-month follow-up, the mean AOFAS scores improved to 96.3 and 98, respectively. The 6-month post-operative MRI revealed a solid linear band crossing from the talus to the fibular insertion for each repaired ATFL. Notably, 76 out of 98 ankles (78%) exhibited low signal intensity of the ligament. The rate of low signal intensity on postoperative MRI was significantly lower in those with discontinuous or nonvisualised quality on preoperative MRI (50.0%) compared to the wavy/enhanced intensity group (84.6%). Discussion and conclusions Regardless of the pre-operative ATFL morphology, the arthroscopic modified Broström procedure with internal bracing yields favorable functional outcomes and restores the morphological integrity of the ATFL.

#40892 : The position, orientation, and relative size of the fibularis longus tubercle in normal patients – a weightbearing CT assessment

Preferred format : a podium presentation OR a poster presentation

Authors:

Amir Hossain Gahanbani Ardakani (1), Branavan Rudran (2), Howard Stringer (3), Matthew Welck (4), Lyndon Mason (5), Karan Malhotra (2)

1. , Royal National Orthopaedic Hospital , London, United Kingdom
2. , Royal National Orthopaedic Hospital , London , United Kingdom
3. , Liverpool University Hospitals, London , United Kingdom
4. , Royal National Orthopaedic Hospital , london, United Kingdom
5. , Liverpool University Hospitals, London, United Kingdom

Keywords: Peroneus longus tubercle, Fibularis longus tubercle; fibularis longus; peroneus longus; weight-bearing CT

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: The fibularis longus (FL) attaches to the base of the first metatarsal at the fibularis/peroneus longus tubercle (FLT/PLT). Differences in FLT morphology may reflect changes in FL function. This study aims to define the normal limits of FLT position, orientation, and size in patients with morphologically normal foot anatomy. Methods: A retrospective analysis of 131 feet without deformity in 72 patients undergoing weightbearing CT (WBCT) was conducted. Measurements included tubercle-floor distance, tubercle-metatarsal angle, and bisecting angle. Roundness of the FLT was assessed by the triangular ratio. Relative sizes of FLT to the first metatarsal (X/Y ratio) and first metatarsal to second metatarsal (XY/Z ratio) were also determined. Results: No significant side-to-side differences were found ($p>0.05$). Mean values were: tubercle-floor distance 28.02 ±2.63mm, tubercle-metatarsal angle 32.7 ±6.32 degrees, bisecting angle 65.58 ±6.27 degrees, triangular ratio 0.69 ±0.04, X/Y ratio 1.13 ±0.20, and XY/Z ratio 3.44 ±-0.72. Bisecting angle strongly correlated with tubercle-metatarsal angle ($r = 0.840$, $p<0.001$), indicating FLT rotation independent of foot position. ICC was >0.943 for all measurements. Conclusion: This study provides normative data on FLT morphology in individuals with normal feet. These findings can aid future studies investigating differences in patients with foot pathology, enhancing our understanding of FL's role in foot disorder development and treatment.

#40906 : Predictors of rigidity in progressive collapsing foot deformity (PCFD): a retrospective comparative study with healthy controls, flexible and rigid PCFD patients.

Preferred format : a podium presentation OR a poster presentation

Authors:

Tommaso Forin Valvecchi (1), Antoine Acker (2), Erik Huanuco Casas (2), Chien-Shun Wang (2), Emily Luo (2), Tiago Soares Baumfeld (3), Henrique Maciel Prudente (3), Mark Easley (2), Daniele Marcolli (4), De Cesar Netto Cesar (2)

1. , Università Milano Statale, Milano, Italy
2. , Duke University, Durham, USA
3. , Hospital Felicio Rocho, Minas Gerais, Brazil
4. , ASST Gaetano Pini, Milano, Italy

Keywords: PCFD, WBCT, hindfoot, flatfoot.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Progressive Collapsing Foot Deformity (PCFD) can be categorized into flexible (stage 1) or rigid (stage 2) deformities. Distinguishing these stages is essential yet challenging, impacting treatment and prognosis. This study aimed to use Weightbearing Computed Tomography (WBCT) for a comparative analysis between flexible PCFD, rigid PCFD, and control patients, focusing on identifying key measures that define the rigid deformities. Methods A retrospective comparison included 21 rigid PCFD, 38 flexible PCFD, and 17 controls. Rigid PCFD was defined as hindfoot valgus not passively correctable to neutral alignment. All underwent WBCT and 3D measurements were made focusing on PCFD deformity patterns. Variables were compared between the three groups. A multivariate nominal regression and partition prediction model analysis were performed to study rigidity. Results Significant differences were found in all variables between the groups, with deformities becoming increasingly more severe from controls to flexible and rigid PCFD. Three parameters significantly predicted rigid PCFD, all related to peritalar subluxation: sinus tarsi distance, subtalar horizontal angle, and superior-inferior talar angle. A superior-inferior talar angle >26.9° indicated an 86% chance of rigid PCFD, while <26.9° suggested a 95% chance of flexibility. A combination of a superior-inferior talar angle >26.9° and a sinus tarsi distance <0.32 mm provided a virtually 100% chance of a rigid deformity. Conclusion Peritalar subluxation (Class D) measurements were the only to significantly influence the occurrence of rigid PCFD. A superior-inferior talar angle >26.9° combined with a sinus tarsi distance <0.32 mm was basically diagnostic for rigid PCFD.

#40910 : Trialling Electronic Consent in Elective Foot and Ankle Surgery –Successes & Pitfalls

Preferred format : a podium presentation OR a poster presentation

Authors:

Hassan Imtiaz (1), Amir Ardakani (2), Karan Malhotra (2), Nick Cullen (2), Matthew Welck (2), Shelain Patel (2)

1. Trauma and Orthopaedics, University Hospitals Dorset, Poole, United Kingdom
2. Foot and Ankle Surgery, Royal National Orthopaedic Hospital NHS Trust, London, United Kingdom

Keywords: Electronic Consent, Foot and Ankle surgery, Quality Improvement

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background:Hand-written forms are traditionally used to document consent for surgery. However, these are associated with shortcomings in documentation and legibility. We trialled electronic-consent (e-consent) and report our experience of effectiveness, acceptability and problems compared to paper forms. Methods:This was a prospective audit completing two cycles. Patients undergoing elective foot and ankle surgery over 2-week periods were included. In the first cycle, hand-written consent forms were used. Having identified deficiencies, e-consent using standardised templates were trialled, and audited in the second cycle. Data was collected on adequacy of documentation, use of medical jargon, legibility and patient understanding. Standards were established using RCS guidelines for consent. Results:22 patients were consented using written forms, while 12 had e-consent. For both groups, 100% compliance was observed in documenting intended benefits, and patient understanding. With written forms, 8/22 had alternatives mentioned, 15/22 used medical jargon, 2/22 did not get a copy, and 9/22 were not sufficiently legible. The compliance in documenting common, less common, and rare risks was 33%, 46% and 40% respectively. With e-consent, we observed 100% compliance for all parameters. Patients and staff members preferred e-consent. Identifeid pitfalls include inadequate IT infrastructure and staff training. Conclusion:Templated electronic consent was superior to written consent forms in completeness, documentation of risks, and legibility. Both patients and surgeons found e-consent acceptable. However, it requires sufficient infrastructure, hardware availability and appropriate staff training to be successful. Where this can be achieved, e-consent may be a viable tool to ensure standards are met during the consent process.

#40915 : Demographic Disparities in 30-Day Outcomes Following Achilles Tendon Repair

Preferred format : a podium presentation OR a poster presentation

Authors:

Dino Fanfan (1), William Rittmeyer (2), Aditi Kumar (3), Daniel Murray (4), Cary Chapman (4)

1. Foot and Ankle Orthopedics, Baptist Health Orthopedic Institute, Coral Gables, USA
2. , Tulane College of Medicine, New Orleans, USA
3. , Herbert Wertheim College of Medicine at FIU, Miami, USA
4. , Baptist Health Orthopedic Institute, Coral Gables, USA

Keywords: Achilles Rupture, Demographic Disparities, Outcomes Research

Your abstract (DO NOT add the title, list of authors or keywords in this field)

INTRODUCTION: Specific risk factors for Achilles tendon repair complications such as tobacco use and diabetes have been well-reviewed in current literature. However, the impact of demographic disparities such as race and gender on the 30-day postoperative complication of an Achilles tendon repair has not been extensively reported. Accordingly, we sought to investigate whether demographic disparities in 30-day postoperative Achilles repair outcomes exist and to what extent. METHODS: The American College of Surgeons National Surgical Quality Improvement Program Database was queried for patients undergoing repair of Achilles tendon rupture from 2012 to 2021. A multivariate logistic regression was conducted for each complication to evaluate whether demographic factors were associated with complications after adjusting for various variables (age, obesity rate, diabetic/nondiabetic, smoker/nonsmoker, ASA class). Medical complications included deep vein thrombosis (DVT), superficial surgical site infection (SSI), deep SSI (dSSI), wound disruption after surgery/dehiscence, readmission rate and reoperation rate. RESULTS: A total of 6333 patients who underwent Achilles tendon were included in the study, 25% (N=1607) were women, 49.0% (N=3101) reported as White, 21.1% (N=1336) as Black/African American and 29.9% (N=1896) as Other. Following a multivariate analysis, neither race or gender of the patient were associated with a difference in rates of any evaluated complications. Only race demonstrated a significant difference in the rate of superficial SSI ($\chi 2 = 7.21$; $p=.0272$) following multivariate analysis. CONCLUSION: This study highlights advancements in the delivery of equitable care, but we recognize that there continues to be disparities in surgical care which requires strong and worthwhile solutions.

#40916 : Readability of Patient Education Material for Ankle Arthroplasty

Preferred format : an ePoster Displayed

Authors:

Dino Fanfan (1), George Todd (2), Daniel Murray (2), Cary Chapman (2)

1. Foot and Ankle Orthopedics, Baptist Health Orthopedic Institute, Coral Gables, USA
2. , Baptist Health Orthopedic Institute, Coral Gables, USA

Keywords: Patient Education, Total Ankle Arthroplasty,

Your abstract (DO NOT add the title, list of authors or keywords in this field)

INTRODUCTION: Total ankle arthroplasty (TAA) has recently increased in popularity, and patient education material regarding this procedure should be comprehensive and easily understandable. However, few studies have examined online PEMs for TAA for easy consumption and comprehension among the general public. The purpose of this study was to assess the readability of total ankle arthroplasty PEMs found on the websites of the top 100 orthopedic hospitals in the United States. METHODS: The top 100 ranked orthopedic hospitals were identified from the U.S. News and World Report website. We stratified the hospital websites based on their ranking in the report and evaluated their websites using four unique validated readability assessment tools: Coleman-Liau Index, Flesch Reading Ease test, Flesch-Kincaid grade level, and Gunning Fog Index. Statistical analysis was conducted to compare readability scores between hospitals in the upper and lower 50th percentiles. RESULTS: There were no statistically significant differences in the readability outcomes across percentiles for the Coleman-Liau Index, Flesch-Kincaid, Gunning-Fog Index, and Flesch Reading Ease. The average scores were 11.87, 10.04, 12.93, and 50.04, respectively. 28% of websites were written at or below an 8th grade reading level. Higher ranked institutions had significantly higher word counts for TAA PEMs on average. There was no significant differences between higher and lower ranked hospital websites in the readability of TAA PEMs according to any of the four assessments. CONCLUSION: Despite the importance of health literacy in informed decision-making, most PEMs are written in language that may be inaccessible to many patients.

#40917 : Surgical Correction of Hallux Valgus Deformity with Co-Inciting Metatarsus Adductus: A Systematic Review

Preferred format : a podium presentation OR a poster presentation

Authors:

Dino Fanfan (1), Nicholas Denove (2), Christian Guevara (2), Cary Chapman (3), Daniel Murray (3)

1. Foot and Ankle Orthopedics, Baptist Health Orthopedic Institute, Coral Gables, USA
2. , Herbert Wertheim College of Medicine at FIU, Miami, USA
3. , Baptist Health Orthopedic Institute, Coral Gables, USA

Keywords: Hallux Valgus, Metatarsus Adductus

Your abstract (DO NOT add the title, list of authors or keywords in this field)

INTRODUCTION: Metatarsus adductus (MA) is a condition characterized as medial deviation of the forefoot with normal alignment of the hindfoot. While MA typically resolves spontaneously, its persistence can exacerbate HV deformity, complicating surgical correction. There is limited literature on the postoperative outcomes following corrective surgery for HV with coexisting MA. METHODS: A systematic review was conducted evaluating retrospective observational studies on surgical correction of HV in patients with concomitant MA. Inclusion criteria comprised: (1) patients diagnosed with both hallux valgus and metatarsus adductus, (2) studies including at least 5 consecutive patients, (3) a clear description of the surgical technique, and (4) reporting of clinical and radiographic outcomes. The quality assessment was performed using the Modified Coleman Methodology Score (mCMS). RESULTS: Thirteen studies describing 1120 surgeries met the inclusion criteria. The median follow-up duration was 20 months (12-114) and included patients had metatarsus adductus angles ranging from 14 to 23 degrees. There was a mean improvement of 7.6 degrees (3.86-10.10) in the intermetatarsal angle and 36.1 degrees (27.8-47.2) for the hallux valgus angle. Post-operatively, there was an average improvement of 36.8 points in the American Orthopedic Foot and Ankle Score. Recurrence of hallux valgus deformity was the most reported post-operative complication, averaging 18% across the included studies. CONCLUSION: Clinical and radiographic outcomes of hallux valgus correction in patients with MA appear comparable to those without this comorbidity. However, the rate of deformity recurrence was higher in patients with MA than those without as reported in the literature.

#40918 : Radiographic and Clinical Results of Minimally Invasive Transverse Distal 1st Metatarsal and Akin Osteotomies for Symptomatic Hallux Valgus

Preferred format : a podium presentation OR a poster presentation

Authors:

Dino Fanfan (1), Christian Guevara (2), George Todd (3), Daniel Murray (3), Thomas San Giovanni (4), Christopher Hodgkins (4), Cary Chapman (3)

1. Foot and Ankle Orthopedics, Baptist Health Orthopedic Institute, Coral Gables, USA
2. , Herbert Wertheim College of Medicine at FIU, Miami, USA
3. , Baptist Health Orthopedic Institute, Coral Gables, USA
4. Foot and Ankle Orthopedics, Baptist Health Orthopedic Institute, Miami, USA

Keywords: Minimally Invasive Surgery, Hallux Valgus

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: This study reports radiographic and clinical results on patients who underwent minimally invasive transverse distal 1st metatarsal and Akin osteotomies. Methods: 192 consecutive patients (213 feet) were followed for at least one year. The average age was 56.5, average final follow-up of 13.4 months, and 86.5% (166) of patients were women. Radiographic outcomes include pre- and post-operative HV (HVA), intermetatarsal (IMA), and proximal intermetatarsal angles (pIMA). Foot and Ankle Ability Measure (FAAM) and Visual Analog Scale (VAS) scores were used to determine functional outcomes. Complication, reoperation and radiographic recurrence rates were also determined. Radiographic recurrence was defined as a change in HVA >10 degrees. Results: Additional procedures were performed on 83 feet (39%), the most common being lesser metatarsal osteotomies, which was performed in 88% of those patients. Among corrected bunions, 8.5% were classified as severe (HVA >40 degrees) and 79% were moderate (HVA >20 and <40 degrees). Average pre-op HVA and IMA were 28.4 and 12.8 degrees and improved to 8.4 and 4.2 degrees ($p < 0.001$). Statistically significant increases in FAAM-ADL, FAAM-Sports and VAS scores were observed ($p < 0.001$). There were no cases of superficial or deep infections. There were 10 radiographic recurrences, and 13 (6%) hardware removals. Conclusion: Fourth generation MIS HV surgery for the treatment of moderate and severe HV showed good clinical and radiographical outcomes. This technique has also proven to be safe and effective, with low recurrence, revision and complication rates.

#40919 : Gait in Controlled Ankle Movement (CAM) Walker Boot Using a Contralateral Shoe Lift

Preferred format : a podium presentation OR a poster presentation

Authors:

Dino Fanfan (1), Sergio Lemus (2), Daniel Murray (3), Kyra Lopez (4), Francesco Travascio (2), Thomas San Giovanni (5), Christopher Hodgkins (5), Cary Chapman (3)

1. Foot and Ankle Orthopedics, Baptist Health Orthopedic Institute, Coral Gables, USA
2. , University of Miami, Miami, USA
3. , Baptist Health Orthopedic Institute, Coral Gables, USA
4. , Baptist Health Orthopedic Institute, Miami, USA
5. Foot and Ankle Orthopedics, Baptist Health Orthopedic Institute, Miami, USA

Keywords: Biomechanics, Controlled Ankle Movement Boot, Kinematics

Your abstract (DO NOT add the title, list of authors or keywords in this field)

INTRODUCTION: The purpose of this outcome study was to demonstrate the effects of a CAM boot and the shoe lift compared to walking with your running shoes on continuous gait. METHODS: We conducted a prospective cohort study comprised of 30 participants, 15 men and women, who underwent three-level walking trials under the following conditions: athletic shoes, tall CAM boot, and tall CAM boot with a balancer added to the contralateral foot. Data post-processing provided spatiotemporal gait parameters and lower limb kinematics and kinetics. A Two-Way ANOVA followed by a Tukey Pairwise comparison identified significant effects of walking conditions on various gait characteristics. RESULTS: In both ipsilateral and contralateral limbs, cadence ($p = 0.002$) and step width ($p<0.001$) were significantly different in normal walking conditions compared to walking with the boot and the combination of balancer and boot. Specific to contralateral limb, stride time ($p = 0.025$), step time ($p = 0.007$), and limb index ($p \leq 0.001$) were also affected. In terms of kinematics, the walking condition significantly affected the contralateral limb hip abduction angle, with the greatest peak angle during the boot condition. The walking condition significantly affected several contralateral limb parameters, including hip medial/lateral force, knee compression force, and knee varus/adduction moment. CONCLUSION: These results underscore the importance of considering footwear interventions in clinical and rehabilitation settings, as they can substantially influence gait patterns and biomechanical dynamics, highlighting the need for careful consideration in clinical and rehabilitation settings.

#40920 : Radiographic Evaluation of Time to Union in Minimally Invasive Hallux Valgus Correction

Preferred format : a podium presentation OR a poster presentation

Authors:

Dino Fanfan (1), Daniel Murray (2), Christian Guevara (3), Christopher Hodgkins (4), Thomas San Giovanni (4), Cary Chapman (2)

1. Foot and Ankle Orthopedics, Baptist Health Orthopedic Institute, Coral Gables, USA
2. , Baptist Health Orthopedic Institute, Coral Gables, USA
3. , Herbert Wertheim College of Medicine at FIU, Miami, USA
4. Foot and Ankle Orthopedics, Baptist Health Orthopedic Institute, Miami, USA

Keywords: Hallux Valgus, Union Time

Your abstract (DO NOT add the title, list of authors or keywords in this field)

INTRODUCTION: There is limited literature on the time to union following moderate and severe hallux valgus repair using minimally invasive techniques. We conducted a retrospective analysis to investigate the time to union and its relationship with cortical formation and post-operative degree of displacement of the 1st metatarsal in patients undergoing HV repair. METHODS: We retrospectively analyzed seventy-two consecutive patients with moderate to severe hallux valgus who underwent MIS 1st distal metatarsal and Akin osteotomy between 2019 and 2022. Radiographic measurements included the scale of displacement between the proximal and distal portions of the first metatarsal and the degree of cortex formation. Complete union was defined as the presence of three new cortex on postoperative X-ray films. RESULTS: On average, 2 cortices were observed at 16.9 weeks, and 3 cortices were observed at 26.8 weeks. When the metatarsal shift was greater than 50%, two cortices were observed at an average of 20.14 weeks, compared to 13.7 weeks when the shift was less than 30% (p=0.004). Further analysis of the time required to observe 3 cortices showed no statistically significant difference between metatarsal shifts greater (25.26 weeks) and less than (23.74 weeks) 50% (p=0.4734). In all patients, 4 cortices at the 6-month and 12-month time points. DISCUSSION: In patients who underwent MIS 1st metatarsal distal transverse and Akin osteotomies for HV repair, the degree of displacement between the proximal and distal portions of the 1st metatarsal is not associated with statistically significant delay in new cortical formation.

#40922 : Use of an MRI request protocol reduces inappropriate repeat foot and ankle MRI scans

Preferred format : a podium presentation OR a poster presentation

Authors:

Beer Alexander (1), Amir Ardakani (2), Patel Shelain (1, 3), Cullen Nicholas (1), Welck Matthew (1, 4), Malhotra Karan (1, 4)

1. Department of Foot and Ankle Surgery, Royal National Orthopaedic Hospital, London, United Kingdom
2. Department of Foot and Ankle Surgery, Royal National Orthopaedic Hospital, London , United Kingdom
3. Department of Orthopaedics & Musculoskeletal Science, University College London, London , United Kingdom
4. Department of Orthopaedics & Musculoskeletal Science, University College London, London, United Kingdom

Keywords: MRI, Foot and ankle, health economics,

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Unnecessary repeat MRI scans are costly and do not advance patient care. Our objective was to analyse the frequency of inappropriate repeat MRI Scans and assess the impact of introducing a protocol for repeat MRI requests. This was a retrospective audit of 1322 MRI scans performed in our foot and ankle unit between 01/10/2019-31/10/2022. Repeat MRI was defined as any scan within 3 years of MRI on the same area of the body. For all scans we investigated the clinical appropriateness and the impact of scan on patient management. Scans were deemed appropriate if they were part of a clinical trial, for tumour/infection/stress-fracture monitoring, for new trauma, pre-operative planning, following agreement in MDT or following changes in clinical symptoms. The initial audit demonstrated high rates of inappropriate MRI scans. Therefore, a protocol was introduced and re-audited over 6 months. In the initial audit 45% of repeat MRI scans were inappropriate. Following introduction of the protocol, inappropriate scans fell from 45% to 12% (p=0.001). No inappropriate scans influenced patient management in either cycle. The scans deemed appropriate by the protocol influenced patient management in 68% in the initial audit and 77% in the re-audit (p=0.48). The average time between scans increased from 13.1 months, to 21.1 months in the re-audit. The initial audit demonstrated that inappropriate repeat MRI scans were common and seldom impacted patient management. The MRI protocol significantly reduced the number of inappropriate MRI scans. Furthermore, this reduced the burden on radiology services and resulted in financial savings.

#40951 : Using sense of vibration to evaluate proprioception to ankle sprain

Preferred format : a podium presentation OR a poster presentation

Authors:

Emre Baca (1), Muhammed Can Ari (1)

1. Orthopedia and Traumatology, Bakırköy Dr.Sadi Konuk Training and Research Hospital, İstanbul, Turkey

Keywords: ATFL, tuning-fork, proprioception, vibration

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objective:This study aims to investigate changes in vibration sensations in patients who develop ATFL rupture following acute ankle sprain, examining the usability of proprioceptive measurement methods and exploring their place in diagnosis. Materials and Methods:Osseous pathologies were ruled out and rupture diagnosis was then determined by ultrasound examination. Subsequently, vibration measurements were performed on both ankle ATFL traces using a 128 Hz tuning fork. Data were compared with a healthy population and a group of patients with ankle lateral edema following acute sprain without rupture. Results:Included in this study were 81 participants, with 48 males and 33 females.Among the 27 patients with ATFL rupture, additional CFL injuries were present in 9 cases and additional PTFL injuries (Grade 2-3) were present in 5 cases. The mean duration of tuning fork-assisted vibration on the injured side for patients with ATFL rupture was 5,72 second while on the healthy side it was 7,87 second. This difference was statistically significant (p=0.001).The average vibration duration for these cases at the 12th week was found to be 7,65 second which was statistically significant (p=0.001). The rate of chronic instability was 25.9% (n:7) Conclusion:After an acute ATFL rupture, the impaired proprioception also affects the vibration sense of the individuals, resulting in decreased vibration duration in the damaged tendon. Improved proprioception was demonstrated through vibration measurements,indicating the restoration of vibration sense.The tuning fork-assisted vibration measurement technique appears to be usable as a proprioceptive measurement method and can be employed as an adjunct method for diagnosis

#40952 : Novel Casting Technique for Calcaneum Tongue-Type Fracture with Soft Tissue Compromise

Preferred format : a podium presentation OR a poster presentation

Authors:

Ravindraa Thaigaraja (1)

1. Orthopaedics, Kementerian Kesihatan Malaysia, Perai, Malaysia

Keywords: Novel Casting, Tongue-Type, Fracture, Soft Tissue Compromise

Your abstract (DO NOT add the title, list of authors or keywords in this field)

INTRODUCTION: Calcaneum tongue-type fracture requires urgent reduction and fixation in order to minimize soft tissue compromise from the pressure of the displaced fracture fragment on the posterior heel skin. CASE REPORT: A 71-year-old woman presented to the emergency department with left heel swelling and pain after a low-energy motor vehicle accident. The posterior heel was taut but intact with ecchymosis seen. Radiographs showed left calcaneum tongue-type fracture. She underwent open reduction and K-wire insertion of left calcaneum. She was discharged postoperatively day-2 in a dorsal foot slab with ankle at equinus position. On post operative day-7, she claimed had a fall from car with her heel knocked against the ground. 2cm x 2cm area of full-thickness skin necrosis was noted at the posterior heel. Radiographs revealed fracture displacement. She underwent wound debridement and fixation using two 6.5 mm partially threaded cannulated screws. With the ankle in resting plantarflexion, she was placed with boot full cast with open window over wound area. Post operation 1 month, she was changed to a modified short leg plaster-of-paris cast with posterior heel window with strut for better posterior heel relief and access for wound care. As a result, this Novel casting technique showed promising result of wound healing. In addition, radiographs showed good bone healing process after being immobilised for 3 months. CONCLUSION: Novel casting method can be used to relieve posterior heel pressure and provide access to the heel for soft tissue monitoring and wound management in the case of calcaneum tongue-type fracture.

#41101 : Outcomes of Platelet-Rich Plasma Infiltration and Weightbearing Cast Immobilization in Distal Tibialis Anterior Tendinopathy: A Prospective Cohort Study

Preferred format : an ePoster Displayed

Authors:

Lies Desomer (1), Nathalie van Beek (2), Anne Van Riet (2), Stefaan Verfaillie (2)

1. , , Liestal, Switzerland
2. , AZ St-Elisabeth, Herentals, Belgium

Keywords: tendinopathy, platelet-rich plasma, ankle, prospective

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background - Distal tibialis anterior tendinopathy (DTAT) is a chronic condition that may lead to functional impairment and secondary forefoot deformities when left untreated. Current clinical practice is guided by case reports and small retrospective case series; little consensus exists on which treatment protocol is most effective. This study aims to assess a conservative treatment consisting of PRP-infiltration and walking cast immobilization. Methods - This prospective study included 18 patients (18 feet), recruited between September 2020 and September 2022 at our institution. Ultrasonography was performed; leukocyte-poor PRP was infiltrated around the tibialis anterior tendon insertion. Walking cast immobilization was used for 3 weeks after infiltration, followed by eccentric exercises and gastrocnemius-soleus muscle complex stretching. Clinical findings, visual analog scale (VAS), Foot Function Index (FFI), and American Orthopaedic Foot & Ankle Society (AOFAS) midfoot scores were recorded at inclusion, 6 and 12 weeks after PRP-infiltration. One-way repeated measures ANOVA was performed over time for FFI, AOFAS, and VAS scores. Results - Tendon thickening and hypoechogenicity were most commonly reported in ultrasonography. Significant improvement from baseline VAS (VASrest: 4.71±2.7, VASactivity: 5.66±2.5) to 12 weeks follow-up (VASrest: 2.14±2.7, VASactivity: 3.34±2.5) was found. AOFAS and FFITotal improved significantly from baseline (AOFAS: 66.9±3.3, FFITotal: 32.9±3.3) to 6-week follow-up (AOFAS6w: 79.4±3.3, P = .019; FFITotal: 19.4±3.3, P = .011). No statistically significant further improvement was found from 6 to 12 weeks' follow-up. Two patients chose operative treatment because of persisting symptoms. Conclusion - We found that PRP-infiltration with walking cast immobilization was associated with general early symptom improvement.

#41113 : A comparative study of the clinical results of two methods of surgical treatment of the hollow foot: removal of the navicular bone with osteotomy of the cuboid bone and osteotomy of Cole.

Preferred format : an ePoster Displayed

Authors:

Vladislav Apresyan (1), Levon Makinyan (1), Albert Mannanov (1)

1. Department of Traumatology and Orthopedics, RUDN University, Moscow, Russia

Keywords: pes cavus, removal of the navicular bone, osteotomy of the cuboid bone

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Cole osteotomy is performed in patients having a cavus deformity with the apex of the deformity in a plantigrade foot. We invented a new approach in cavus foot surgery: removing the navicular bone and wedge-shaped osteotomy of the cuboid bone. We compared the clinical and radiographic results of 16 patients that underwent Cole midfoot osteotomy and 11 patients that underwent removing of the navicular bone ande midfoot. Methods: The patients had two etiologies: idiopathic pes cavus and Charcot-Marie-Tooth disease. In the first group Cole midfoot osteotomy was performed, in the second group - removal of the navicular bone and wedge-shaped osteotomy of the cuboid bone. We evaluated clinical and radiographic results. Results: Mean clinical follow-up was 15.7 months. The mean preoperative and postoperative talo–first metatarsal angles on lateral radiographs were 29,9 and 8,7, respectively ($p<0,05$) after the Cole osteotomy and 27,2 and 5,4, respectively ($P<0,05$) after the navicular bone removal. The mean postoperative calcaneal pitch angle changes were 10,8 on the lateral radiograph ($p<0,05$) after the Cole osteotomy and 15,6 after the navicular bone removal ($p<0,05$). The mean AOFAS questionnaire score was 38.8 preoperatively and 79.5 postoperatively ($p<0,05$) in the first group and 37,4 preoperatively and 83,5 postoperatively $p<0,05$) in the second group. Conclusions: Removal of the navicular bone with cuboid wedge osteotomy is an effective surgery for pes cavus. When using this technique, the risk of developing arthrosis and stiffness of the adjacent joints is lower and there is no effect on the mobility of the ankle joint.

#41120 : Efficacy of percutaneous ultrasonic fasciotomy in the management of recalcitrant plantar fasciitis - a case series

Preferred format : a podium presentation

Authors:

Tai Yong Loh (1), Don Thong Siang Koh (2), Zongxian Li (2), Kizher Shajahan Mohamed Buhary (2), Ruixiang Toh (2), Kae Sian Tay (2)

1. , , SG, Singapore
2. , Singapore General Hospital Department of Orthopaedic Surgery, Singapore, Singapore

Keywords: plantar fasciitis; Tenex; percutaneous ultrasonic fasciotomy; outpatient; outcomes

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Percutaneous ultrasonic fasciotomy has been employed in the treatment of a myriad of tendinopathies. To date, no study has reported its effectiveness as an independent treatment modality in the management of plantar fasciitis. Methods: Between July 2020 and December 2022, 15 patients were treated with percutaneous ultrasonic fasciotomy. Clinical outcome measures included Visual Analogue Score (VAS), American Orthopaedic Foot and Ankle Society–Hindfoot score (AOFAS-Hindfoot), European Foot and Ankle Score (EFAS), Visual Analogue Score (VAS), Physical Component Summary (PCS) and Mental Component Summary (MCS) of the Short Form 36 (SF-36) Questionnaire. Results: Patients reported significant improvement in VAS throughout the 2 years. Mean VAS improved from 6.6 ± 2.0 (preoperatively) to 2.7 ± 3.2 (2 years postoperatively) ($p < 0.05$). Significant improvement in AOFAS-Hindfoot, EFAS and PCS at 2 years postoperatively was also observed. Recurrence rate was 26.7% (4/15). Patient satisfaction at 2 years was 86.7% (13/15). No complications were reported. Conclusions: PUF can be useful in managing RPF, providing good pain relief and clinical improvement up to 2 years postoperatively. Levels of evidence: Level IV, retrospective case series

#41131 : Patient Reported Outcomes with the Use of Fibular Nail Fixation, Retrospective Review of 40 Cases

Preferred format : a podium presentation OR a poster presentation

Authors:

Solangel Rodriguez-Materon (1), Dino Fanfan (2), Nicholas Denove (3), Danae Hollingsworth (4), Paloma Gauthier (4), Christopher Hodgkins (5)

1. , Baptist Health Orthopedic Institute, Baltimore, USA
2. Foot and Ankle Orthopedics, Baptist Health Orthopedic Institute, Coral Gables, USA
3. , Herbert Wertheim College of Medicine at FIU, Miami, USA
4. , Baptist Health Orthopedic Institute, Miami, USA
5. Foot and Ankle Orthopedics, Baptist Health Orthopedic Institute, Miami, USA

Keywords: Fibular Nail, Trauma

Your abstract (DO NOT add the title, list of authors or keywords in this field)

INTRODUCTION: We report our surgical and patient reported outcomes for a cohort of single surgeon consecutive fibula nails with proximal and distal locking fixation. METHODS: We retrospectively reviewed prospectively collected data on 41 patients that were implanted with Fibulock® Fibula Nail (Arthrex, Naples, Florida, USA). Intraoperative reduction quality was noted and patients were followed postoperatively with radiographs assessing maintenance of reduction, healing, and complications. Patient reported outcome questionnaires were collected preoperatively and then again at 3, 6, 12, and 24 months postoperatively. The Foot and Ankle Ability Measure (FAAM) assessed the patient's functional status, The Visual Analogue Scale (VAS) was used to evaluate pain. RESULTS: All 41 patients had approximately one year of postoperative follow-up and some patients up to two years of follow-up (14.68 months ± 5.92). There were 25 females and 16 males. The average age at the time of surgery was 47.17 years (± 16.00) and the average BMI was 27.28 (± 6.10). Medical history is shown in figure 1. The type of facture pattern is tabulated in Figure 2. Statistical analysis revealed a significant difference between preoperative and postoperative FAAM scores overall (+67.52, $p < 0.001$), within ADL (+68.07, $p < 0.001$), and sport (+65.95, $p < 0.001$). Also, there was a significant difference between preoperative VAS and postoperative VAS (-4.73, $p < 0.001$). DISCUSSION AND CONCLUSION: Our findings support the use of intramedullary fibula nails as a viable alternative to traditional plate and screw fixation, offering improved patient outcomes and fewer hardware-related complications.

#41132 : Retrospective Review of 200 Fibula Nails with Proximal and Distal Fixation

Preferred format : a podium presentation OR a poster presentation

Authors:

Solangel Rodriguez-Materon (1), Dino Fanfan (2), Nicholas Denove (3), Danae Hollingsworth (4), Paloma Gauthier (4), Christopher Hodgkins (5)

1. , Baptist Health Orthopedic Institute, Baltimore, USA
2. Foot and Ankle Orthopedics, Baptist Health Orthopedic Institute, Coral Gables, USA
3. , Herbert Wertheim College of Medicine at FIU, Miami, USA
4. , Baptist Health Orthopedic Institute, Miami, USA
5. Foot and Ankle Orthopedics, Baptist Health Orthopedic Institute, Miami, USA

Keywords: Fibular Nail, Trauma

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Ankle fractures are a frequent injury in the adult population and a quarter of all ankle fractures are classified as unstable, requiring surgical intervention. Plate-and-screw construct is the traditionally used fixation method for fibula fractures. The use of an intramedullary nail is an alternative fixation method, with current literature supporting very low complication rates and hardware removal surgeries. The purpose of this study was to evaluate the outcomes, including complication rates and implant removal rates, using a fibula nail with both proximal and distal fixation capabilities by an experienced surgeon. Methods: We retrospectively reviewed 203 consecutive fibula nail cases from a single surgeon using a mini-open technique for anatomic reduction. Demographic, operative, clinical, and radiographic outcome data were analyzed, specifically examining complication rates and need for implant removal. Results: In total, 203 fractures were treated with a fibula nail and were included in our retrospective analysis. The average age was 47.3 years (range, 29-82) and the average body mass index was 28 (range, 22-34). All fractures healed. We identified 2 cases of superficial wound infection, 1 superficial peroneal nerve irritation, and 1 case of implant removal. 2 fractures were converted to a plate intraoperatively prior to a technique modification which has prevented this occurrence. No deep infection, delayed union, or nonunion occurred. Conclusion: Our data support that fibula nails with proximal and distal locking capabilities offer an alternative to plating with the potential for lower complication rates and lower need for implant removal.

#41155 : Concomitant hind foot supra- or inframalleolar osteotomies for the treatment of osteochondral lesions of the talus - an evaluation of the DGOU cartilage registry

Preferred format : a podium presentation

Authors:

Christopher Hale (1), Stefan Landgraeber (1), Joe Wagener (1), Philipp Winter (1)

1. Orthopedics, University Clinic Homburg, Homburg, Germany

Keywords: hindfoot osteotomies, osteochondral lesions of the talus, symptom duration, gender, age, BMI, outcome, FAOS, FAAM, VAS

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The aim is to provide a recommendation as to which patient groups should undergo supra- or inframalleolar osteotomy of the hindfoot for osteochondral lesions of the talus in order to achieve the best results with individualised therapy including the influence of age, gender and BMI on patient outcome. Retrospective data from the DGOU cartilage registry were statistically analysed. For this purpose, 28 patients who had undergone a concomitant osteotomy were included. For the functional outcome the following scores were assessed: The Foot-Ankle Outcome Score (FAOS), the Foot-Ankle Activity Measure (FAAM) and the Visual Analogue Scale (VAS). The study period extends from pre-operative to 36 months post-operatively. The study group consisted of 16 men and 12 women with a mean age of 39.68 ± 13.56 years. The mean value of BMI was 27.25 ± 4.72. The mean duration of symptoms was 41.32 ± 35.39 months with a mean cartilage damage of ICRS stage 3 ± 0.67 and a defect size of 10x10x3 to 8x6x1 mm. Analysing the scores showed an improvement from preoperative up to 36 months postoperatively. FAAM improved from 62.75 ± 16.76 to 83.50 ± 13.99 at 24 months. Also, an increase in FAOS from 75.60 ± 19.78 to 91.5 ± 10.73. The QoL score was 30.21 ± 19.21 and increased to 44.64 ± 27.72 at month 36. VAS also increased from 5.27±2.76 to 2.19±2.04 at 24 months. Our study is intended as a treatment recommendation and guideline for the surgical treatment of cartilage damage in the ankle.

#41159 : Maintaining Medial Column Motion In The Surgical Treatment Of Lisfranc's Injury -An Observational Retrospective Study of 25 Consecutive Cases

Preferred format : a podium presentation

Authors:

Miguel Flora (1), Tiago Torres (2), Rodrigo Matias Lopes (2), Dúnio Jácome Pacheco (2), Francisco Guerra Pinto (2, 1)

1. Ortopedia, Hospital da Cruz Vermelha, Lisboa, Portugal
2. Ortopedia, Hospital de Sant'Ana, Lisboa, Portugal

Keywords: Foot Trauma, Lisfranc injury, Medial Column, Arthrodesis

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Surgical treatment is the rule for Lisfranc injuries, being arthrodesis of medial and intermediate columns, along as maintaining lateral column motion, the standard procedure. Objectives To highlight the importance of maintenance of motion in the medial column, given the importance of this structure in gait and weight bearing, particularly in active patients. Study Design and Methods Retrospective review of 25 patients with surgical treatment for Lisfranc's injuries between 2019 and 2024 performed by the same surgical team in two different hospitals. There were 15 male patients and 10 females. Mean age was 39,9 (19-64). We used Meyerson/Hardcastle classification in 23 patients, corresponding to 22 type B2 and one type A. Two injuries were classified as purely ligamentous (Nunley I). All patients were treated with tarsometatarsal arthrodesis of second ray and first cuneiform-second metatarsal arthrodesis, being additional procedures considered on a case-by-case basis. Preservation of medial column motion was achieved in all but 6 cases. Results All of the patients with occupational accidents resumed their previous activity with different degrees in terms of bodily damage evaluation. All the other patients also resumed their previous activity, including returning to sports activity. The mean time to return to work was, however, quite different between patients from occupational accidents and the others, mean 31 versus 15 weeks. Conclusions Reduction and fixation of second metatarsal base is the main key of surgical treatment, but maintenance of medial column motion should be done whenever its feasible.

#41165 : Subacute Lisfranc injury on a 56 years old female using anatomical reconstruction with semitendinosus autograft. Surgical technique

Preferred format : an ePoster Displayed

Authors:

Guillermo García Cruz (1), Omar Alfonso Guerra Alvarez (2), Gonzalo Galvez Marquez (3), Fernando Bragado Santacruz (2), Jose Alberto Rodrigo Verguizas (2)

1. , Complejo Asistencial Segovia, Rivas-Vaciamadrid, Spain
2. , Complejo Asistencial Segovia, Segovia, Spain
3. , Complejo Asistencial Segovia, Segovia, Spain

Keywords: subacute lisfranc injury, anatomical reconstruction

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Subacute Lisfranc injuries (6 weeks after sprain) have poor results with fixation techniques, so reconstructions techniques using a plasty and anatomical, reconstructing the 3 bands (interosseous, dorsal and plantar bands) are done commonly. Case presentation 56-year-old patient with right forefoot pain after trauma 2 months ago, we observed resolving plantar hematoma and instability of the 1st cuneometatarsal joint. We performed Weight-bearing x-rays where increase of the space between the base of intermediate cuneiform and 1st metatarsal was seen. An anatomical reconstruction using autogenic semitendinosus plasty was made. Semitendinosus is passed from medial to lateral and plantar to dorsal direction inside bone tunnel performed from medial cuneiform to 2nd metatarsal reconstructing interosseous band. The end of the lateral plasty is then recovered plantarly below 1st metatarsal and 2nd metatarsal from lateral to medial, reconstructing the plantar band. The medial end of the plasty is recovered plantarly from the medial edge of medial cuneiform to lateral base of 2nd metatarsal. Finally this recovered end is passed dorsally from the base of 2nd metatarsal to the medial edge of 1st metatarsal reconstructing the last dorsal band. At this point both ends of the plasty are sutured on the dorsomedial side of 1st metatarsal after proper tension Results:A splint and non-weight bearing are maintained for 6 weeks and then partial weight-bearing is allowed with a orthopedic boot. 3 months after surgery the patient was asyntomatic and full-weight bearing. Conclusion: Anatomic reconstruction for subacute Lisfranc injuries has good functional and clinical outcomes.

#41166 : Clinical and functional results 5 years after arthroscopic tibiotalocalcaneal arthrodesis with retrograde nail

Preferred format : a podium presentation OR a poster presentation

Authors:

Guillermo García Cruz (1), Omar Alfonso Guerra Alvarez (2), Gonzalo Galvez Marquez (3), Alvaro De la Rubia Marcos (2), Jose Manuel Ruiz Andreu Ortega (2), Jose Alberto Rodrigo Verguizas (2)

1. , Complejo Asistencial Segovia, Rivas-Vaciamadrid, Spain
2. , Complejo Asistencial Segovia, Segovia, Spain
3. , Complejo Asistencial Segovia, Segovia, Spain

Keywords: Arthroscopic tibiotalocalcaneal arthrodesis, retrograde nail, clincal outcomes

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Arthroscopic tibiotalocalcaneal arthrodesis with retrograde nail is a minimally invasive technique which is performed in patients with osteoarthritis who do not improve with conservative treatment. The advantage of this technique is less hospital stay and lower complication rate compared to open techniques. Material and methods A retrospective descriptive study of 8 patients undergoing arthroscopic tibiotalocalcaneal arthrodesis by posterior approach between 2016-2023 with retrograde nail in our hospital. We analyzed functionality data measured with the American Orthopedic Foot and Ankle Scale (AOFAS), degree of satisfaction, consolidation time and rate, discharge time and main complications. Results An average hospital stay of 3.43±0.53 days was observed and patients had good functionality and low complication rate. We obtained 86% rate of tibiotalar consolidation in the period of 10 weeks and a rate of subtalar consolidation about 71% in 20 weeks. Patients were non-weight bearing for 4 weeks with a splint and then they were allowed partial-weight bearing with orthopedic boot until 10th postoperative week. We found main complications in two patients: one of those had to be reoperated due to complications in the surgical wound and the other one presented tibiotalar pseudoarthrosis although without clinical repercussion. Conclusion Arthroscopic panarthrodesis by posterior approach offers very good results with a high rate of bone consolidation, few complications and minimal non-weight bearing time. This technique could be used in patients without major deformities, especially in those at high risk of complications of the surgical wound as diabetic foot because of the decrease in them observed.

#41222 : Morselised Femoral Head Impaction Bone Grafting of Large Defects in Ankle and Hindfoot Fusions

Preferred format : a podium presentation

Authors:

Bakur Jamjoom (1), Karan Malhotra (2), Shelain Patel (2), Matt Welck (2), Nick Cullen (2), Tim Clough (3)

1. , The Royal National Orthopaedic Hospital Stanmore, Nottingham, United Kingdom
2. , The Royal National Orthopaedic Hospital Stanmore, London, United Kingdom
3. , Wrightington, Wigan and Leigh Teaching Hospitals, Wrightington, United Kingdom

Keywords: Ankle, Hindfoot, Bone Graft, Impaction, Fusion,

Your abstract (DO NOT add the title, list of authors or keywords in this field)

A 2 centre retrospective review of consecutive series of 32 patients undergoing ankle and hindfoot fusions with impaction bone grafting of morselised femoral head allograft to fill large bony void defects was performed. Union was assessed clinically and with either plain radiography or weight-bearing CT scanning. Indications included failed total ankle replacement (24 patients), talar osteonecrosis (6 patients) and fracture non-union (2 patients). Mean depth of the defect was 29 ±10.7 mm and mean maximal cross-sectional area was 15.9 ±5.8 cm2. Tibiotalocalcaneal (TTC) arthrodesis was performed in 24 patients, ankle arthrodesis in 7 patients and triple arthrodesis in 1 patient. Mean age was 57 years (19-76 years). Mean follow-up of 22.8 ±8.3 months. 22% were smokers. There were 4 tibiotalar non-unions (12.5%), two of which were symptomatic. 10 TTC arthrodesis patients united at the tibiotalar joint but not at the subtalar joint (31.3%), but only two of these were symptomatic. The combined symptomatic non-union rate was 12.5%. Mean time to union was 9.6 ±5.9 months. One subtalar non-union patient underwent re-operation at 78 months post-operatively after failure of metalwork. Two (13%) patients developed a stress fracture above the metalwork that healed with non-operative measures. There was no bone graft collapse with all patients maintaining bone length. Impaction of morselised femoral head allograft can be used to fill large bony voids during ankle and hindfoot arthrodesis, with rapid graft incorporation and no graft collapse despite early loading. This technique offers satisfactory union outcomes without shortening or synthetic cages.

#41235 : Comparative Outcomes of Trans-fibular Total Ankle Arthroplasty in Rheumatoid Arthritis and Osteoarthritis

Preferred format : an ePoster Displayed

Authors:

Koichiro Yano (1), Katsunori Ikari (2), Ken Okazaki (2)

1. , Tokyo Women's Medical University, Tokyo, Japan
2. , Tokyo Women's Medical University, Tokyo, Japan

Keywords: Total ankle arthroplasty

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Trans-fibular total ankle arthroplasty (TAA) has demonstrated promising outcomes in recent studies. However, comparative data on the performance of Trans-fibular TAA in patients with rheumatoid arthritis (RA) versus osteoarthritis (OA) are lacking. This study aims to compare the therapeutic outcomes of Trans-fibular TAA in RA and OA populations. Patients and Methods: We conducted a retrospective cohort study at our institute, evaluating patients who underwent Trans-fibular TAA from January 2019 to April 2022. The study included 46 ankles, with 29 from RA patients and 17 from OA patients. Outcome measures utilized included the Self-Administered Foot Evaluation Questionnaire (SAFE-Q), a patient-reported outcome tool, and the Japanese Society for Surgery of the Foot (JSSF) scale, comparing preoperative scores with those at 3, 6, 12, and 24 months postoperatively. Additionally, both the SAFE-Q and JSSF scores were directly compared between the RA and OA groups at each time point. Complication rates were also documented and analyzed. Results: Improvements in all SAFE-Q subscales and the JSSF scale were significant at 3 or 6 months post-operation, and these improvements were maintained up to 2 years in both groups. Comparative analysis revealed significantly higher scores in the OA group in the 'Physical function' and 'Shoe-related' subscales of SAFE-Q at the 2-year postoperatively. Complications included malleolar fractures (OA: 3, RA: 2) and infections (deep: OA: 1, RA: 1; superficial: RA: 2). Conclusion: Both groups showed good clinical outcomes up to 2 years post-operation, with the OA group performing better in some patient-reported outcomes.

#41370 : Factors influencing successful bone union of isolated subtalar arthrodesis for posttraumatic subtalar arthritis: a multicenter case series

Preferred format : a podium presentation OR a poster presentation

Authors:

Kim Hyong Nyun (1), Choi Yong Rak (2), Kim Bom Soo (3), Kim Yu Mi (4), Lee Jaehyung (5), Cho Jae Ho (6), Park Jae Yong (7)

1. , Kangnam Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Republic of Korea
2. , Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea
3. , Inha University Hospital, Incheon, Republic of Korea
4. , Sanbon Hospital, Wonkwang University College of Medicine, Gunpo-si, Republic of Korea
5. , Hallym University Sacred Heart hospital, Anyang-si, Republic of Korea
6. , Chuncheon Sacred Heart Hospital, Hallym University College of Medicine, Chuncheon-si, Republic of Korea
7. Orthopaedic surgery, Hallym University Sacred Heart hospital, Anyang, Republic of Korea

Keywords: subtalar arthritis, arthrodesis, fixation device, bone union

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The purpose of this study was to find the factors influencing successful bone union for isolated subtalar arthrodesis in posttraumatic subtalar arthritis following calcaneal fracture. We retrospectively analyzed the rate of successful bone union of 119 cases of isolated subtalar arthrodesis for posttraumatic subtalar arthritis performed at five university hospitals between January 2010 and December 2019. Multivariate logistic regression analysis was used to find the factors associated with successful bone union. Successful bone union was defined as resolution of hindfoot pain with the presence of osseous trabecular bridging involving more than 50% of the posterior facet within 6 months postoperatively. There were 77 (64.7%) successful bone union, 11 (9.2%) delayed union, 8 (6.7%) questionable union, and 23 (19.3%) nonunion. Use of fully threaded screws was 5.90 times more likely to achieve successful bone union compared to the use of partially threaded screws. Use of two parallel screws or the two divergent screws were 3.71 times and 4.65 times more likely to achieve successful bone union compared to the use of a single screw. Use of cancellous autograft or structural autograft was 4.72 times and 7.12 times more likely to achieve successful bone union compared to no graft use. Use of fully threaded screws, autograft, and two screws compared to a single screw were the factors associated with successful bone union within six postoperative months after subtalar arthrodesis for the posttraumatic arthritis.

#41547 : Open Reduction And Internal Fixation Of The Posterior Malleolus Fragment In Trimalleolar Ankle Fractures

Preferred format : an ePoster Displayed

Authors:

Judit Martínez Zaragoza (1), Zulema Montilla Garcia (2), Montserrat Castillo Pou (1)

1. Hospital Asepeyo, Barcelona, Barcelona, Spain
2. Hospital Asepeyo, Barcelona, BARCELONA, Spain

Keywords: Ankle fracture, posterior malleolus, posterior approach

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The presence of a posterior malleolar (PM) fragment has a negative prognostic impact in ankle fractures and the best treatment is still subject to debate. The aim of this study was to compare the clinical and functional outcomes and possible complications of fractures of the PM treated by non surgical treatment or by open reduction and internal fixation (ORIF) in trimalleolar ankle fractures. One hundred thirty-six patients (66 women, average age 47) with trimalleolar fractures were retrospectively analyzed between January 2017 and December 2022. Fixation of PM was performed in 84 patients (group A) and not fixation in 52 (group B). We analyzed the range of motion for dorsiflexion, minor and major complications, time off from work and degree of inability to return to work. The minimum of follow-up was 12 months. None of the patients developed delayed union or nonunion. There were no significant differences between groups in the range of motion for dorsiflexion: in group A was 15.65º and 15.63º (p=0.987) in group B. In 4 patients of group A, the fragment was fixed using lag screws only, in 80 it was fixed using a buttress plate. Nineteen patients presented complications in group A and 4 in group B. The time off from work was 297 days in group A, compared to 238 days in group B. We conclude that the posterior surgical approach to the ankle allows an anatomical reduction and stable fixation of PM, and performed individually, it is safe and presents good functional results.

#41613 : Short course of intravenous corticosteroids does not reduce swelling and soft tissue damage for trimalleolar ankle fractures.

Preferred format : a podium presentation OR a poster presentation

Authors:

González-Alonso Marcos (1), Trapote Cubillas Ana R (2), Madera González Francisco J (2), Hernández Fernández Óscar (2), Sánchez Lázaro Jaime A. (2)

1. Trauma and Orthopaedic Surgery, Complejo Asistencial Universitario de León, Léon, Spain
2. Trauma and Orthopaedic Surgery, Complejo Asistencial Universitario de León, León, Spain

Keywords: ankle fracture, trimalleolar ankle fracture, methylprednisolone, corticosteroid, swelling, traumatic blisters

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction. Our aim was to analyse whether a short course of corticosteroids is useful in reducing the delay of definitive surgery in trimalleolar ankle fractures. Methods. We retrospectively analysed patients admitted between January 2020 and December 2022 for a trimalleolar ankle fracture. One group received methylprednisolone 1mg/kg every 24 hours for 3 days at the discretion of the admitting physician and the other did not. We excluded patients with chronic corticosteroid treatment, patients treated with external fixation as the definitive treatment and patients with associated lesions. Delay to surgery and postoperative complications during the first year were assessed. Results. Of a total of 57 patients, 23 (40.4%) received methylprednisolone with a mean age of 55.35 years (±17.79) while the group that did not receive treatment was 57.38 years (±16.96). No differences were found in the type of fractures between both groups (p=0.145) using Lauge-Hansen classification with PER4 fractures being the most frequent in both groups. There were also no differences in dislocations or subluxations on admission (p=0.483), open fractures (p=0.145), or the use of external fixation (p=0.146). The mean delay to definitive surgery was 7.82 days (±4.71) in the group that did not receive corticosteroid and 7.57 days (±3.88) in the group that did (p=0.829). Complications rate during the first year of follow-up was similar in both groups (p=0.874). Conclusion. In our sample, methylprednisolone was not associated with a decrease in time to surgery, and it did not appear to increase the risk of postoperative complications.

#41615 : Spanish Translation, Cross-Cultural Adaptation, and Validation of the Olerud-Molander Ankle Score (OMAS) for Ankle Fractures

Preferred format : an ePoster Displayed

Authors:

González-Alonso Marcos (1), Trapote Cubillas Ana R (2), Madera González Francisco J (2), Hernández Fernández Óscar (2), Sánchez Lázaro Jaime A. (2)

1. Trauma and Orthopaedic Surgery, Complejo Asistencial Universitario de León, Léon, Spain
2. Trauma and Orthopaedic Surgery, Complejo Asistencial Universitario de León, León, Spain

Keywords: patient-reported outcomes, outcome studies, trauma, Spanish, ankle fracture, validation, score, OMAS, Olerud-Molander

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: The aim of this study was to translate and cross-culturally adapt the Olerud-Molander Ankle Score (OMAS) into Spanish and to assess its reliability and validity. Methods: The translation and adaptation to develop the Spanish version of the OMAS (OMAS-Sp) was performed according to current international guidelines. The OMAS-Sp was administered to 98 patients with a surgically treated ankle fracture, and it was repeated 7-14 days later to assess construct reliability of each question's score and the total score. Test-retest reliability and the internal consistency were calculated, and concurrent validity was assessed by comparing the OMAS-Sp with the Foot and Ankle Outcome Score (FAOS). The presence of floor and ceiling effects was also analyzed. Results: Adequate internal consistency was found with a Cronbach α of 0.821. Excellent test-retest reliability was demonstrated with an interclass correlation coefficient for the total score of 0.970 (95% CI 0.956-0.980; $P < .001$). Spearman correlation coefficients (r's) between the OMAS-Sp total score and the 5 FAOS subscales ranged from 0.944 to 0.951 ($P < .001$). No floor or ceiling effects were found. Conclusion: The OMAS-Sp demonstrated adequate psychometric properties and is a valid and reliable tool for assessing outcomes in Spanish-speaking patients with surgically treated ankle fractures.

#41705 : TIBIO-TALO-CALCANEAL ARTHRODESIS WITH A NAIL VERSUS A PLATE – A BIOMECHANICAL STUDY

Preferred format : a podium presentation OR a poster presentation

Authors:

Kajetan Klos (1), Gueorguiev-Rüegg Boyko (2), Edgar Roth (1), Mark Lenz (3), Mehar Dhillon (2), Ivan Zderic (2)

1. Foot and Ankle Surgery, Gelenkzentrum Rhein-Main, Hochheim, Germany
2. Biomedical Development, AO Foundation , Davos, Switzerland
3. Department of Trauma, Hand and Reconstructive Surgery, University Hospital Jena , Jena, Germany

Keywords: Arthrodesis, Intramedullary; Plate; Boimechanics; Hindfoot

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Tibiocalcaneal arthrodesis with a retrograde nail is an established procedure. Current state of the art treatment with intramedullary nails has proven good primary stability. Nevertheless, plate systems are used, especially because they are easier to handle. However, most of these plates are used "off-label". The results vary greatly depending on the implant used. In recent years, there has been a significant development in hindfoot arthrodesis with plates. The aim of this work was therefore to compare a plate specially developed for arthrodesis of the hindfoot with an already established nail system. Methods Sixteen paired human cadaveric specimen were assigned to 2 groups for arthrodesis using a hindfoot arthrodesis nail or an arthrodesis plate. Specimens were tested under progressively increasing cyclic loading in dorsiflexion and plantar flexion to failure, with monitoring via motion tracking. Initial stiffness was evaluated together with range of motion in dorsiflexion and plantar flexion after 200, 400, 600, 800, and 1000 cycles, and cycles to failure defined by 5° dorsiflexion. Results Initial stiffness in was not significantly different between the two techniques. Range of motion increased significantly between 200 and 1000 cycles and remained not significantly different between the fixation techniques. Cycles to failure did not differ significantly. Discussion From biomechanical point of view, both tested techniques appear to be applicable. However, in order to prove superiority of one of these techniques, clinical trials need to follow before a final recommendation is given. Until then, other factors, play the main role in the choice of implant.

#41745 : Influence of mood on the outcome of hallux valgus surgery.

Preferred format : an ePoster Displayed

Authors:

Jaime A Sánchez Lázaro (1), Fátima Juan Mangas (2), Ana R Trapote Cubillas (1), Francisco J Madera González (1), Óscar Fernández Hernández (1)

1. Foot and Ankle Unit, Hospital de León, León, Spain
2. , Hospital de León, León, Spain

Keywords: Hallux valgus, SF12, MOXFQ, Quality of life after surgery

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Numerous studies have shown that surgical correction of HV is associated with improvements in scores on questionnaires assessing pain and general satisfaction in patients undergoing treatment for mood disorders. However, these results are not as good as in patients without depressive symptoms. Material and methods A retrospective study was carried out to compare the satisfaction with post-surgical outcomes in two groups of 35 patients. They underwent surgery for HV with the Scarf+Akin technique by the same surgeon, using the validated SF-12 and MOXFQ questionnaires. Results The two groups studied were homogeneous in terms of gender distribution, age and comorbidities studied (hypertension, diabetes mellitus and hypercholesterolaemia). Statistically significant differences were observed in the results of the SF-12 questionnaire (SF-12 ($p<0,0001$),and MOFQX ($p=0,03$); these showed a worse perception of the results after hallux valgus surgery in those patients taking antidepressants. Conclusion The results of this study are consistent with those of previously published studies, observing that the results in terms of satisfaction with post-surgical outcomes of HV and residual pain are worse in patients who suffer from mood disorders and require treatment with antidepressant and/or anxiolytic drugs.

#42034 : Do We Need Routine Postoperative Prophylactic Oral Antibiotics in Elective Foot and Ankle Surgery?

Preferred format : a podium presentation OR a poster presentation

Authors:

Andrew Lachance (1), Alexander Edelstein (1), Wonyong Lee (1)

1. Orthopaedic Surgery, Guthrie clinic, Sayre, USA

Keywords: foot and ankle surgery, postoperative infection, postoperative wound dehiscence, postoperative delayed wound healing, antibiotics

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: This study aims to investigate differences in the rate of postoperative infection and wound complications following foot and ankle surgeries between patients with and without postoperative oral antibiotics and identify independent risk factors for these complications. Methods: A retrospective review of all elective foot and ankle surgeries with at least a 6-month follow-up was performed over a 2-year timespan. Patients were divided into two groups based on if they received postoperative oral antibiotics. We compared the rates of postoperative infections and wound complications as well as demographic data between the two groups. The surgical site, the number of CPT codes, and the number of surgical incisions were also noted. Multivariable logistic regression analysis was performed to identify independent risk factors of postoperative infection and wound complications. Results: 366 patients were included in this study: 240 with antibiotics, and 126 without antibiotics. The rate of superficial infection, deep infection, and wound complications was 1.7%, 0.8%, and 5.8% in the antibiotic group Vs. 3.2%, 0.0%, and 4.0% in patients without antibiotics, respectively, without significant differences. Multivariable logistic regression analysis identified smoking (OR:4.668), male (OR:3.959), history of neoplasm (OR:6.664), and multiple incisions (OR:4.138) as independent risk factors of postoperative infection and wound complications. Conclusions: Routine postoperative prophylactic oral antibiotics may not be needed following elective foot and ankle surgeries. However, for certain populations with risk factors including smoking, history of neoplasm, and multiple skin incisions, postoperative prophylactic oral antibiotics may be indicated to decrease the chance of postoperative infection and wound complications.

#42035 : The Efficacy and Safety of Tranexamic Acid Utilization in Total Ankle Arthroplasty: A Systematic Review and Meta-analysis

Preferred format : a podium presentation OR a poster presentation

Authors:

Alexander Edelstein (1), John McDonald (2), Andrew Lachance (1), Wonyong Lee (1)

1. Orthopaedic Surgery, Guthrie clinic, Sayre, USA
2. , Geisinger Commonwealth School of Medicine, Scranton, USA

Keywords: TXA, tranexamic, total ankle arthroplasty, wound complication, infection, DVT

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: There is a lack of information on the role of Tranexamic acid (TXA) in total ankle arthroplasty (TAA). The purpose of this study is to review and analyze findings from existing research on the effectiveness and safety of TXA in TAA. Methods: The comprehensive literature review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guideline using PubMed, Embase, Web of Science, and Cochrane databases, for studies investigating the efficacy and safety of TXA in TAA. Evaluated data for the meta-analysis included estimated blood loss (EBL), change in perioperative hemoglobin, need for transfusion, and complications including DVT/PE, and wound complications. Results: Nine studies were included in this study. In total, 450 TAA were included, with 244 receiving TXA(54.2%) and 206 not receiving TXA(45.8%). TXA in TAA significantly decreased EBL. A significantly lower rate of wound complications in the TXA group with the relative risk(RR) of 0.51. We classified wound complications into wound infection and delayed wound healing/dehiscence. A significant decrease in the rate of wound infection and a tendency showing a decrease in the rate of delayed wound healing/dehiscence in the TXA group were noted: the RR of 0.29, and 0.63, respectively. TXA did not increase the incidence of DVT/PE following TAA. Conclusions: The utilization of TXA during TAA demonstrated a significant reduction in EBL and relative risk for wound complications. Further RCTs with larger sample sizes will be necessary to establish a more robust conclusion regarding the efficacy and safety of TXA in TAA.

#42107 : Mid-term outcome of distal osteotomy and first tarsometatarsal joint fusion for hallux valgus

Preferred format : a podium presentation OR a poster presentation

Authors:

Evita Rumba (1), Erika Sturmane (1), Alma Egle (1), Ruta Jakušonoka (2), Zane Pavāre (3)

1. , Riga Stradiņš University, Riga, Latvia
2. Riga Stradiņš University, Riga Stradiņš University, Riga, Latvia
3. Latvian Academy of Sport Education, Latvian Academy of Sport Education, Riga, Latvia

Keywords: Distal osteotomy, first tarsometatarsal joint fusion, Lapidus, hallux valgus

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objectives:Many surgical methods have been described for correction of hallux valgus (HV),in general dictated by the severity of the deformity.The aim of the study was to evaluate mid-term outcome of patients with distal chevron osteotomy and Lapidus arthrodesis.Methods:A retrospective study of patients operated in the hospital from January 2017 to December 2018, was conducted.Two groups were identified:distal chevron osteotomy (group A) and Lapidus arthrodesis (group B).Pre-operative and mid-term postoperative radiological examination results and patient`s satisfaction were analyzed.Results:Mid-term outcome was evaluated in 49 patients(48female,1male),mean age 55.8(31-77)years,mean 63(45-81)months after operation.18 patients(24 feet)were in the group A,31 patient(35 feet)in group B.In the group A pre-operative mean hallux valgus angle(HVA)was 32.4 degrees, intermetatarsal angle (IMA) 11.5degrees,distal metatarsal articular angle(DMAA)29.5degrees;postoperative mean HVA was19.8degrees,IMA 9degrees,DMAA 16degrees($p<0.05$).Mean grade of the medial sesamoid position pre-operatively was 2,postoperatively 1.In the Lapidus arthrodesis group pre-operative mean HVA was 38.1degrees,IMA 15degrees,MAA 34.1degrees;postoperative mean HVA was 16degrees,IMA 8.6degrees,DMAA 14.1degrees($p<0.05$).Mean grade of the medial sesamoid position pre-operatively was2,postoperatively2.No significant difference among mean postoperative HVA,IMA,DMAA in group A and group B was identified($p˃0.05$).In group A 14 patients(77.8%)were satisfied,4 patients (22.2%)were unsatisfied;in group B 23 patients(74.2%)were satisfied,8 patients were unsatisfied(25.8%)with outcome.Two patients had superficial postoperative infection,one hypertrophic scar,one metatarsalgia,one stiffness. Discussion/conclusions: Both HV patient`s groups demonstrated improvement of HVA,IMA,DMAA postoperatively. Two thirds of patients were satisfied with outcome in both groups.Patients are suggested to be informed about possible complications and risks after surgery.

#42528 : Calcaneal z osteotomy: an option to correct progressive collapsing foot deformity

Preferred format : an ePoster Displayed

Authors:

Nuria Boó Gustems (1), Julian David Molano Castro (1), Alejandro Dominguez Sevilla (1), Jordi Montanyà Manich (1), Jorge Roman Verdasco (1)

1. , none, Barcelona, Spain

Keywords: hindfoot valgus, calcaneal Z osteotomy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

In the treatment of progressive collapsing deformity of the foot, several procedures are involved depending on its severity. According to the new classification proposed by Myerson and colleagues, which includes hindfoot valgus (A) and midfoot abduction (B), the accepted surgical treatment involves calcaneal sliding osteotomy along with lateral column lengthening (Evans osteotomy) to restore the medial longitudinal arch. The aim of this study is to present a calcaneal Z osteotomy for mild to moderate valgus flatfoot deformities. Two female patients with flexible valgus flatfoot type IAB according to the current classification, unresponsive to conservative treatment with orthotics, underwent calcaneal Z osteotomy with iliac crest allograft placement and fixation with two cannulated screws for correction of hindfoot valgus and midfoot abduction. Their preoperative AOFAS scores were 49 and 47 points respectively, and at 6 months postoperatively, they were 83 and 80 points respectively. Calcaneal Z osteotomy may be a valid option in the surgical treatment of mild to moderate flatfoot deformities.

#42548 : Bone grafting for periprosthetic bone cysts following total ankle arthroplasty

Preferred format : a podium presentation OR a poster presentation

Authors:

Gun-Woo Lee (1), Min-Su Lee (1), Keun-Bae Lee (1)

1. Orthopedic surgery, Chonnam National University Hospital, Gwangju, Republic of Korea

Keywords: Total ankle arthroplasty, Bone cyst, Bone grafting

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Aims: The purpose of this study was to assess the success rate and functional outcomes of bone grafting for periprosthetic bone cysts following total ankle arthroplasty (TAA). Methods: We reviewed a total of 37 ankles that had undergone bone grafting for periprosthetic bone cysts. A CT scan was performed one year after bone grafting to check the status of graft incorporation. For functional outcomes, variables such as the Ankle Osteoarthritis Scale score and the visual analogue scale for pain were measured. Results: Out of 37 ankles, graft incorporation was successful in 30 cases. Among the remaining seven cases, four (10.8%) exhibited cyst re-progression, so secondary bone grafting was needed. After secondary bone grafting, four ankles did not show further progression, resulting in an overall 91.9% success rate(34 of 37) at a mean follow-up period of 47.5 months(24 to 120). The remaining three cases (8.1%) showed implant loosening, so tibiotalocalcaneal arthrodesis was performed. Functional outcomes were also improved after bone grafting in all variables at the latest follow-up($p<0.05$). The mean incorporation rate of the grafts according to the location of the cysts was 84.8% at the medial malleolus, 65.1% at the tibia, and 81.2% at the talus. Smoking was identified as a significant predisposing factor adversely affecting graft incorporation($p=0.001$). Conclusion: Bone grafting for periprosthetic bone cysts following primary TAA is a reliable procedure with a satisfactory success rate and functional outcomes. Regular follow-up, including CT scan, is important for the detection of cyst re-progression to prevent implant loosening after bone grafting.

#42551 : Surgical Versus Conservative Treatment of Acute Achilles Tendon Ruptures in Sports Participants: A Multicenter Patient-Reported Outcome Study

Preferred format : a podium presentation OR a poster presentation

Authors:

Yuko Takeuchi (1), Hideki Hiraiwa (1), Yasuhiko Takegami (2), Takashi Tsukahara (1)

1. Orthopedic Surgery, Asahi University Hospital, Gifu, Japan
2. Orthopedic Surgery, Nagoya University Hospital, Nagoya, Japan

Keywords: Achilles Tendon, Acute Achilles Tendon Rupture, Achilles tendon total rupture scores, Patient-reported outcome measures

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Purpose: Acute Achilles tendon ruptures (AATRs) are commonly sustained during sporting activities. Conventionally, AATRs have been treated surgically, particularly in athletes and active young individuals. However, recent studies have explored the efficacy of conservative treatment, focusing on early weightbearing and functional rehabilitation. This study aimed to compare patient-reported outcome measures (PROMs), complication rates, and return to sports between surgical and conservative treatments for AATR in active sports participants. Methods: This retrospective multicenter study adhered to the Declaration of Helsinki and involved patients who were diagnosed with AATR between January 2018 and December 2022. The data were collected from 124 patients who participated in sports activities prior to their injury and were treated either surgically (Group S) or conservatively (Group C). Clinical details, complication rates, and return to sports were analyzed. Results: The study revealed no significant difference in the rate of re-rupture between the two groups. Group C showed better Achilles tendon total rupture scores (ATRSs) and fewer complications, such as infections and keloid scars, than Group S. Both groups showed similar levels of return to sports. Conclusion: Conservative treatment was associated with better ATRS outcomes, suggesting that it is a viable alternative to surgical intervention, especially for active sports participants. The delayed weightbearing in surgical patients may contribute to functional declines. The study also highlighted similar re-rupture rates between treatments, but noted specific complications associated with surgical intervention.

#42555 : The effect of weight-bearing computed tomography imaging on the treatment of foot and ankle patients – A retrospective follow-up of 333 cases

Preferred format : a podium presentation

Authors:

Helka Koivu (1), Ilona Koski (1), Jussi Hirvonen (2)

1. , Pihlajalinna Turku Kupittaa, Turku, Finland
2. , Tampere University, Tampere, Finland

Keywords: Weight-bearing computed tomography, Foot, Ankle, Trauma, Deformity

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Weight-bearing cone-beam computed tomography (WBCT) allows 3D imaging with full weight-bearing without the influence of projection, affording a detailed evaluation of foot and ankle pathologies. WBCT has gained applications in numerous areas of foot and ankle surgery. The aim of this study was to analyze the effect of weight-bearing computed tomography imaging on treating various foot and ankle patients. Patients and methods Consecutive patients imagined by WBCT of foot and/or ankle from 2018 to 2022 for any indication were included. The number of and the indications for WBCT imaging were collected. The indications for and the effect of WBCT imaging were divided into different categories, and the effect of WBCT on the diagnosis and treatment was analyzed. Results A total of 439 foot and/or ankle WBCT studies in 333 cases were included. Most of the studies (58 %) were performed due to acute trauma. The main effect on treatment was establishing previous treatment choices (48 %). A change in the diagnosis or treatment was found in 37 % of the cases. There was a significant association between the effect of the WBCT imaging and indication category ($X2=110$, $p<0.001$) and between any change of treatment or diagnosis and indication category ($X2=29$, $p<0.001$). Change in treatment was most common in posttraumatic deformity and least common in routine bony union. The type of acute trauma was significantly associated with outcome ($X2=108$, $p<0.001$). Conclusion WBCT was widely used and substantially affected the treatment in various foot and ankle patients.

#42559 : Extensor digitorum longus repair augmented with peronial tertius autograft (late complication of anterior ankle arthroscopy)

Preferred format : a podium presentation OR a poster presentation

Authors:

Daniel Saraiva (1), Daniel Freitas (2), Rodrigues André (3), Marco Sousa (3), Pato Tiago (3), José Tulha (3)

1. Orthopedic Department, Foot and Ankle Unit, Hospital da Prelada, Porto, Portugal
2. , Foot and Ankle Unit, Hospital da Prelada, Porto, Portugal
3. , Orthopedic Department, Hospital da Prelada, Porto, Portugal

Keywords: Extensor, digitorum, longus, repair, peronial, tertius, anterior, ankle, arthroscopy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Anterior ankle arthroscopy is a common and safe procedure for ankle pathology, but is not free from complications like neurovascular injury, tendon rupture or infection. Material and Methods We present a case of an active 27 years old male patient who underwent anterior ankle arthroscopy due to anterior ankle impingement. Two months after surgery, he felt a sudden snap directly over the anterior ankle joint, with immediate pain and inabilty to extend the lesser toes. Subsequent dynamic ultrasonography demonstrated an extensor digitorum longus tendon high-grade rupture. Results We decided for an anterior ankle open approach, and after extensor digitorum longus complete rupture confirmation, with a gap around one centimeter (with the ankle placed in a neutral position), performed direct suture of the tendon, augmenting it with a peronial tertius tendon autograft harvested from the same ankle. The three years follow-up demonstrates an asymptomatic patient, punctuating zero on the Visual Analog Score for Pain and 89/100 on the Foot and Ankle Outcome Score (FAOS). Discussion Extensor digitorum longus rupture is a rare complication of anterior ankle arthroscopy, and is commonly attributed to iatrogenic injury caused by the arthroscopic shaver blade or radiofrequency instruments. Diagnosis is based on clinical evaluation and can be confirmed by ultrasonography or magnetic resonance imaging. Conclusion Late rupture of extensor digitorum longus is a rare complication of anterior ankle arthroscopy. Timely diagnosis permits direct tendon repair, and augmenting this repair with a peronial tertius tendon autograft can lead to high patient satisfaction and functional status.

#42560 : Peroneus brevis to longus transfer in a cadaveric flatfoot model. Foot 3D motion and plantar pressure evaluation with different calcaneal osteotomies.

Preferred format : a podium presentation

Authors:

Emilio Wagner (1), Pablo Wagner (1), Sebastian Gericke (2), Oscar Torrealba (2), Felipe Palma (3), Rodrigo Guzman (3)

1. Orthopedic Department, Clinica Alemana, Santiago, Chile
2. Orthopedic department, Clinica Alemana de Santiago - Universidad del desarrollo, Santiago, Chile
3. Laboratorio Integrativo de Biomecánica y Fisiología del Esfuerzo, Universidad de los Andes, Santiago, Chile

Keywords: flatfoot, calcaneal osteotomy, cadaveric study, plantar pressure

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction In this cadaveric trial, a cadaveric flatfoot model was created, testing the effect of peroneus brevis to longus transfer and different calcaneal osteotomies on the foot bones position and plantar pressure. Methods 15 cadaveric specimens were used, creating a flatfoot model on them. Evans, medial displacement calcaneal osteotomy (MDCO), Evans+MDCO, inverted “Z” (IZ) and “Z” osteotomies were performed, adding the peroneus brevis to longus transfer (PBtoPL) to all of them. Plantar pressure and bones 3D position were evaluated for each condition. Results All osteotomies increased the lateral plantar pressure significantly. With a Vicon positioning software we found a significant overcorrection (p=0.0001) in terms of AP talonavicular and talometatarsal angles using isolated Evans or combined with MDCO. Isolated MDCO significantly undercorrected the talonavicular angle (talar head coverage). “Z” and "IZ" osteotomies corrected the talonavicular angle to its basal state, without overcorrection. Regarding the PBtoPL transfer, it increased (not statistically significant) the lateral talometatarsal angle in 1 degree in all conditions. Plantar pressure under the first metatarsal head significantly increased after the PBtoPL. Conclusions Evans and Evans+MDCO osteotomies carry a great risk of overcorrection. "Z" and "IZ" osteotomies seem to correct to basal state angular measurement without overcorrection. PBtoPL mildly increases calcaneal osteotomies correction power and first metatarsal head plantar pressure.

#42570 : Standardised minimally invasive approach for calcaneal fractures - experience and results of 15 years

Preferred format : a podium presentation

Authors:

Christian Rodemund (1)

1. Traumacenter Linz, AUVA Austria, Linz, Austria

Keywords: calcaneal fractures, minimally invasive surgery, functional treatment, screw-only osteosynthesis

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The last 15 years we developed a minimally invasive treatment concept which has been applied to 450 cases. The procedures are based on a detailed fracture analysis with individual 3D reconstruction to plan and perform specific reduction and osteosynthesis techniques. Positioning, X-ray views, surgical methods and aftercare are standardized. For the reduction we use Westhues methods, specialized distractors for axis and length correction and fracture manipulation tools. Usually we only use stab incisions, rarely a sinus-tarsi approach. Osteosyntheses are performed with screws only and intraoperative CT ensuring precise results. Aftercare is early functional and fixation-free. All fracture types, including comminuted fractures (Sanders 4), are treated surgically. For "simpler" fractures no compromises are made to anatomical reduction. If the joint area is destroyed, the aim is to restore length, axis and height and fix it with an exercise stable osteosynthesis. Due to the minimal complication rate, we perform surgery on all patients regardless of age or comorbidities. The time of treatment is as early as possible to prevent swelling, compartment syndrome and soft tissue problems through surgical decompression and stabilization. A retrospective study of 168 fractures in155 patients was conducted for the period 2015-2020. 79 cases could be clinically reexamined. The average AOFAS score was 91.08 points (Sanders 2x - 93.8, Sanders 3xx - 89, Sanders 4 - 78). 3 superficial, 3 deep infections (open fractures). The concept offers the possibility of treating all patients and fracture types with minimal risk and good clinical results at a very early stage.

#42576 : Prediction of Syndesmotic Instability according to the Lateral Malleolus Fracture Pattern in Supination-External Rotation Type Ankle Fractures

Preferred format : an ePoster Displayed

Authors:

Gun-Woo Lee (1), Jong-Eun Kim (1), Keun-Bae Lee (1)

1. Orthopedic surgery, Chonnam National University Hospital, Gwangju, Republic of Korea

Keywords: Ankle, Lateral malleolar fracture, Supination-external rotation, Syndesmosis

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Purpose: This study examined whether preoperative radiological evaluations can predict syndesmotic instability according to the lateral malleolus fracture pattern in supination-external rotation-type ankle fractures. Materials and Methods: This study enrolled 132 patients (132 ankles) with supination-external rotation stage 3 and 4 ankle fractures. Three-dimensional computed tomography was used for the morphological classification of the lateral malleolus fractures. A long oblique fracture was defined when the posterior cortical bone height of the fracture was 4.5 cm or more from the plafond of the distal tibial articular surface. A short oblique fracture was defined when the height was less than 4.5 cm. The demographic characteristics and syndesmotic instability of the two groups were evaluated. Results: Short oblique fractures were confirmed in 102 cases, and long oblique fractures were confirmed in 30 cases. Long oblique fractures occurred at a statistically significantly higher incidence in younger ages and among males compared to short oblique fractures. Syndesmotic instability was more common in long oblique fractures. Conclusion: In supination-external rotation-type ankle fractures, syndesmotic instability was observed in approximately 13%. Specifically, when the fracture pattern of the lateral malleolus is long oblique, the incidence of syndesmotic instability is approximately three times higher than in short oblique fractures. Therefore, meticulous evaluations of the lateral malleolus fracture pattern and establishing an appropriate treatment plan before surgery are crucial.

#42586 : Agreement analysis on postoperative care between chatGPT and a high-volume foot and ankle surgeon

Preferred format : a podium presentation OR a poster presentation

Authors:

Efrima Ben (1), Agustin Barbero (2), Cristian Indino (2), Camilla Maccario (2), Federico Usuelli (2)

1. Foot and Ankle, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel
2. Foot and Ankle, Humanitas San Pio X, Milan, Italy

Keywords: ChatGPT, Artificial intelligence, high-volume foot and ankle orthopedic surgeon

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction ChatGPT is an Artificial intelligence (AI) algorithm based on a user-friendly interface that does not requires advanced programming skills. Since its release to the public, it has made AI more accessible. As a result, the Patient refers to chat GTP for medical inquiries. This study compares the postoperative (PO) information provided by chatGPT to those of a high-volume foot and ankle orthopedics surgeon. Material and method The study includes 251 patients treated for end-stage osteoarthritis with total ankle arthroplasty. Postoperative emails containing inquiries about their PO status were uploaded to chatGTP. We then evaluated the agreement in simple (SA) and complex (CA) answers. The SA abbreviated the answer provided into "yes" or "no" Its agreement analysis was made using Cohens Kappa. In contrast, CA contained detailed information, and answers were classified into complete agreement, partial agreement, or complete disagreement. Additionally, in partial agreement answers, we calculated the percentage of agreement. Finally, we measured the cases where the surgeon added additional information unrelated to the inquiry. Results there was only a slight agreement in the SA category (K=0.08). In the CA category, we found 27 percent of complete agreement; in 52 percent, we found complete disagreement; in 20 percent, we found only partial agreement. In 50 % of the cases, the surgeon added information unrelated to the question. Conclusion We found limited agreement between chat GPT and the primary surgeon regarding postoperative information. Indicating that chat, GPT is currently an unreliable source for postoperative management.

#42591 : Classification of the os calcis subtalar morphology using weight bearing computed tomography and distance mapping

Preferred format : a podium presentation

Authors:

Efrima Ben (1), Agustin Barbero (2), Cristian Indino (2), Camilla Maccario (2), Federico Usuelli (2)

1. Foot and Ankle, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel
2. Foot and Ankle, Humanitas San Pio X, Milan, Italy

Keywords: weightbearing computed tomography, distance mapping, os calcis subtalar joint, pes planus, morphology, paediatrics.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: The etiology of symptomatic pediatric pes planus (PP) deformity is unclear. Reduced os calcis subtalar joint (OCST) anterior facet morphology has been suggested to result in less support to the talar head and a propensity to develop PP. Weightbearing computed tomography (WBCT) and distance mapping (DM) offer new opportunities to investigate PP deformity in general and the OCST specifically. The purpose of this study is to investigate the OCST morphology using DM and to classify PP subtalar subtypes with DM using Bruckner's A-D classification system. Methods: 25 patients center were evaluated for symptomatic PP deformity. A WBCT scan was performed. Visualization of distance distribution between the articulating surfaces of the subtalar joint was based on a DM technique. Intra- and interobserver agreement of subtalar morphology was assessed using Bruckner’s classification system. Results: The mean age was 10.7 ± 1.4 years. The following mean ± SD and median ± ranges were semiautomatically measured for this group: Meary angle −21 ± 8, calcaneal inclination 15 ± 4 degrees, talar coverage angle 39 (range 32.6-49) degrees, and hindfoot moment-arm 16 ± 5 mm. Classifying subtalar morphology using DM yielded an excellent intra- and interobserver agreement. The individual percentages of each individual subtype were calculated: type A 5%, type B 48%, type C 4%, and type D in 44%. Conclusion: This study demonstrated excellent intraobserver and interobserver agreement in classifying the OCST using DM. A higher prevalence of types B and D was observed compared to A and C in this PP cohort.

#42603 : Does the Type of Peroneus Longus Insertion Relate to the Development of Hallux Valgus? An Anatomical Cadaveric Study

Preferred format : a podium presentation OR a poster presentation

Authors:

Abdul Gomaa (1), Vasileios Lampridis (1), L Hulls (2), A Rasell-Watson (2), Lyndon Mason (1), Alastair Bond (2)

1. Trauma & Orthopaedics Department, Liverpool University Hospitals NHS, Liverpool, United Kingdom
2. School of Medicine, University of Liverpool, Liverpool, United Kingdom

Keywords: hallux valgus, peroneus longus, bunion, anatomy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Hallux valgus (HV) is a complex multifactorial deformity of the first ray. Peroneus longus (PL) muscle is a key dynamic stabiliser of the first ray. Our theory is that HV individuals will have a different morphology of their PL insertion. Aim: To assess if there is an association between the type of PL insertion and the prevalence of HV. Methodology: Twenty-five cadaveric foot specimens were dissected to expose the insertion of PL. The head of the first metatarsal was exposed to determine the presence of morphological changes in keeping with HV. The type of PL insertion, anatomical HV status and number of tarsometatarsal (TMT) facets were all documented. Results: Seven specimens (28%) had morphological changes in keeping with HV deformity. Regarding number of insertions, there were 4 double insertions, which none had HV, whereas 33.33% (7/21) of the single insertions had evidence of HV. Regarding width of insertion to the peroneus longus tubercle, 15.38% (2/13) narrow insertions had HV, whereas 41.67% (5/12) had broad insertions. There were 2 unifacet TMT joints, 19 bifacet and 4 trifacet. HV was more common in the bifacet TMT joints (31.58%, 6/19). Conclusion: Patients with HV were more likely to have single and broad PL insertions. The pull of a narrow PL insertion may increase the stress concentration therefore having a greater effect to the lateral and downward movement of the first ray, thus preventing HV. Further research is required to understand if the morphology change is a cause or effect relationship.

#42605 : A Novel method for reconstructing complex diabetic foot wounds using Biodegradable Temporising Matrix (BTM)

Preferred format : a podium presentation OR a poster presentation

Authors:

Maha Nagarajan (1), Richard Huynh (1), Abdul Gomaa (1), Lyndon Mason (1), Vasileios Lampridis (1)

1. Trauma & Orthopaedics Department, Liverpool University Hospitals NHS, Liverpool, United Kingdom

Keywords: diabetic foot attack, wound coverage, dermal matrix, diabetic foot ulcer

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Diabetic foot attack (DFA) is a complication in patients with diabetes and one of the main causes of non-traumatic amputations. Biodegradable Temporising Matrix (Novosorb BTM) is a synthetic matrix that helps the organisation of the extracellular matrix and generation of new tissue over complex wounds with exposed tendon and bone. Methods: The aim of this prospective study was to evaluate the efficacy of BTM in the reconstruction of wounds after debridement for DFA. Eight patients with complex diabetic foot wounds (exposed fascia, tendons, bone) had an initial debridement and application of negative pressure wound therapy, followed by BTM reconstruction. Mean age of the cohort was 60 years (Range 45-74) and had BTM reconstruction after partial foot amputations, ray amputations and trans metatarsal amputations. Time to healing, infection rate and incidence of subsequent procedure was analysed. Results: All 8 patients had successful BTM integration with the tissues. Six patients achieved complete wound healing at a median time of 18 weeks. Two patients (25%) underwent a second procedure with skin graft for final wound coverage at 3 months. There were no infections or re-ulceration in our cohort at a mean follow up of 10 months (2-30). Conclusion: Our experience suggests that BTM is a safe and effective treatment for coverage of complex wounds after debridement for DFA. In small to moderate wounds BTM as a single stage procedure can achieve full healing. In larger wounds skin graft speeds up wound coverage.

#42607 : Depression as a prognostic factor in diabetic lower extremity amputation: A prospective study

Preferred format : a podium presentation

Authors:

TOLGAHAN KORKMAZ (1), MUHAMMED YUSUF AFACAN (2), CUMHUR DENİZ DAVULCU (3), CANSU ELİBOLLAR (3), GÖKER UTKU DEĞER (4), ALİ ŞEKER (3)

1. , Doğubayazıt Dr. Yaşar Eryılmaz State Hospital, AĞRI, Turkey
2. Department of Orthopaedics and Traumatology, Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, Istanbul, Turkey
3. Department of Orthopaedics and Traumatology, Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, ISTANBUL, Turkey
4. Department of Orthopaedics and Traumatology, Beykoz State Hospital, ISTANBUL, Turkey

Keywords: Amputation, diabetic foot, amputation stump infection, post-amputation infection, re-amputation, tourniquet during amputation surgery, amputation revision surgery, postoperative mortality, Mini-Mental State Examination, Beck Depression Inventory

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objective: This study aims to identify the causes of wound healing issues and early mortality in diabetic patients having undergone amputation and to examine the factors affecting prognosis. Methods: Thirty-nine diabetic patients who underwent lower extremity amputation due to diabetic foot between 2021 and 2022 were followed prospectively. Preoperative data were collected, including complete blood count, erythrocyte sedimentation rate(ESR), C-reactive protein(CRP), procalcitonin, hemoglobin A1c(HbA1c), albumin, total protein, transferrin, ferritin levels, age, sex, body mass index(BMI), smoking habits, dialysis, revascularization, duration of surgery, and use of a tourniquet during the procedure. Cognitive performance and depression status were assessed preoperatively using the standardized Mini-Mental State Examination(MMSE) and the Beck Depression Inventory(BDI), respectively. During the three-month postoperative follow-up period, patients with and without infections at the amputation stump, survivors and non-survivors, and those with and without complications were compared. Results: The use of a tourniquet during surgery and high BDI scores were found to be risk factors for postoperative infections. Additionally, higher BDI scores and lower MMSE scores were identified as risk factors for short-term postoperative mortality. No statistically significant differences were found between the groups in terms of complete blood count, ESR, CRP, procalcitonin, HbA1c, albumin, total protein, transferrin, ferritin levels, age, sex, BMI, smoking habits, dialysis, revascularization, and duration of surgery. Conclusion: This study highlights the importance of tourniquet use during amputation, preoperative depression status, and cognitive functions in patients undergoing amputation due to diabetic foot. The findings underscore the need for a preoperative multidisciplinary neuropsychiatric evaluation to improve patient outcomes.

#42619 : Evaluation of the Correlation Between Tibiofibular Overlap and Tibiofibular Clear Space Measurements with ATFL Strain in Medial Malleolus Fractures

Preferred format : a podium presentation

Authors:

CUMHUR DENİZ DAVULCU (1), MUHAMMED YUSUF AFACAN (2)

1. Department of Orthopaedics and Traumatology, Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, ISTANBUL, Turkey
2. Department of Orthopaedics and Traumatology, Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, Istanbul, Turkey

Keywords: Tibiofibular Overlap, Tibiofibular Clear Space, Anterior Talofibular Ligament (ATFL) Strain, Medial Malleolus Fractures, Ankle Fractures, MRI Assessment, Radiographic Measurements, Ligament Injury, Fracture Diagnosis, Radiographic Correlation

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Aim: This study aimed to investigate the correlation between tibiofibular overlap (TFO) and tibiofibular clear space (TFCS) with anterior talofibular ligament (ATFL) strain in patients with medial malleolus fractures (MMF). Methods: A retrospective cohort study was conducted involving 64 patients with MMF. TFO was measured, with normal defined as greater than 6 mm on anteroposterior (AP) and greater than 1 mm on mortise view. TFCS was measured, with normal defined as less than 6 mm on both AP and mortise views. ATFL injury was assessed using magnetic resonance imaging. Results: Among the 64 patients with MMF, 42 (65.6%) exhibited ATFL strain, 20 (47.6%) had Grade 1 strain, 12 (28.6%) had Grade 2 strain, and 10 (23.8%) had Grade 3 strain (ATFL rupture), while 22 (34.4%) showed no strain. There was a significant positive correlation between decreased TFO, increased TFCS measurements, and the grade of ATFL strain. Specifically, increased TFCS ($r=0.7, p<0.001$) showed a more significant association with higher grades of ATFL strain compared to decreased TFO($r=-0.6, p=0.01$). Comparative analysis between the ATFL strain and non-strain group showed significant differences in TFO(5.2±1.1 mm vs. 7.3±1.3mm,$p=0.01$) and TFCS (7.2±1.0 mm vs. 4.8±0.9 mm,$p<0.001$). The increase in TFCS was more significant than the decrease in TFO in indicating ATFL strain. Conclusion: Our findings underscore the diagnostic value of measuring TFO and TFCS in evaluating ATFL injury in patients with MMF. The observed positive correlations and significant differences between groups indicate that abnormal values in these measurements, particularly increased TFCS, are indicative of increased ATFL instability.

#42621 : Observational study of long-term (14 years) outcomes of operatively treated ankle fractures in a cohort of 330 patients.

Preferred format : a podium presentation OR a poster presentation

Authors:

Taegyeong Tina Ha (1), Kirsten Grant (2), Jane Madeley (1), Senthil Kumar (1)

1. Trauma & Orthopaedics, NHS, Glasgow, United Kingdom
2. , School of Medicine, University of Glasgow , Glasgow, United Kingdom

Keywords: Ankle, post-traumatic arthritis.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Although internal fixation surgery of displaced ankle fractures is amongst the most commonly performed operations, there is little published on long-term outcomes. The true incidence of post-traumatic osteoarthritis (PTOA) requiring intervention is not well known. This study aims to establish the incidence of complications and long-term outcomes, specifically the development of arthritis. Furthermore, it aims to determine the effect of patient characteristics on these outcomes. Method: Between January 2009 and December 2010, 330 patients underwent ankle fixation. Patient demographics, comorbidities and complications including infection, non-union, further surgery, and PTOA were recorded. Two proportion hypothesis testing was used to establish whether patient characteristics affected outcomes. Results: There was a 1.2% and 1.5% incidence of superficial and deep infection respectively. 21.5% (71/330) underwent further surgery with 1.5% requiring revision fixation and 17.6% removal of metalwork. The latest clinical information showed 3.6% (12/330) developed PTOA with only 5 patients requiring surgery including three ankle fusions. There was a statistically significant increase in delayed union rates (P=0.041) in smokers. There was a higher rate of deep infection, delayed union and revision surgery in diabetic patients and higher rates of PTOA and requirement for surgical management of PTOA in overweight patients, although these did not reach statistical significance. Conclusion: Our results show low incidences of short-term complications and development of arthritis in the long-term following internal fixation of ankle fractures. In our study, smokers had higher rates of delayed union but there was no significant correlation between patient characteristics and comorbidities on other outcomes.

#42624 : DEPENDENT TREATMENT OUTCOMES IN MORTON'S NEUROMA: A COMPARATIVE ANALYSIS OF INJECTION AND SURGICAL INTERVENTIONS

Preferred format : a podium presentation OR a poster presentation

Authors:

Prajwal Srinivasan (1), Jordi Ballester (1), Raam Mohan Selvarajan (1), gerald tan (1), Max Ross (1)

1. Trauma and Orthopedics, Mersey and West Lancashire NHS Trust, prescot, United Kingdom

Keywords: Morton's neuroma, corticosteroid injections

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Morton's neuroma is a painful foot condition characterized by tissue thickening around the nerves leading to the toes. The primary treatments include corticosteroid injections and surgical excision, with treatment decisions often influenced by the neuroma size. However, there is limited clarity on optimal treatment approaches based on this size. Methods: This retrospective observational study analyzed data from patients with Morton's neuroma treated at our district general hospital. Neuroma sizes, treatment modalities (corticosteroid injections or surgery), and treatment outcomes were examined. The treatment protocols involved corticosteroid injections initially, and surgical excision for those not responding to conservative treatment or with large neuromas. Outcome measures included treatment distribution by neuroma size, success rates of treatments, average neuroma size leading to surgery, and neuroma count per foot. Results: The study found that smaller neuromas (0-10 mm) were primarily treated with injections, while larger ones increasingly required surgery. Neuromas measuring around 9.21 mm, on average, often necessitated surgical intervention, indicating a possible size threshold. Around 88.24% of patients with neuromas more than 9mm had success with injections primarily but required surgery later on with surgical success around 55%. Most patients had one or two neuromas per foot, with a few having multiple neuromas. Conclusion: Neuroma size significantly influences the choice and outcome of treatment for Morton's neuroma. Smaller neuromas are responsive to conservative treatment, whereas larger neuromas may necessitate surgery. Clinicians should tailor treatment strategies based on neuroma size to optimize outcomes and further refine treatment thresholds.

#42628 : Meniscal-like tissue in the metatarsophalangeal joint of the first ray

Preferred format : a podium presentation OR a poster presentation

Authors:

Laetitia THEUNISSEN (1, 2), Julien LABORDE (1), Céline FERNANDO (3), Michel MOREAU (4), François LINTZ (5)

1. Union Cheville Pied, Clinique de l'Union, Ramsay santé, Saint-Jean (Toulouse), France
2. Service chirurgie orthopédique, CHU Tivoli, La Louvière, Belgium
3. Union Cheville Pied, Clinique de l'Union, Ramsay Santé, Saint Jean (Toulouse), France
4. anatomopathologie, MEDIPATH Toulouse - Les Feuillants, Toulouse, France
5. Union Cheville Pied, Clinique de l'Union, Ramsay Santé, Saint Jean (Toulouse) , France

Keywords: Hallux valgus, histology, metatarsophalangeal joint, meniscus

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Hallux valgus (HV) is the most frequent deformity of the forefoot, the etiology of which remains incompletely elucidated. Morphologic risk factors are well described but the importance of soft tissues, among others medial structures, should be emphasized in the development of this deformity. During corrective surgery for HV, a fibrous structure akin to a meniscus is often seen in the metatarsophalangeal joint of the first ray. This study aimed to histologically describe this structure and compare it to the knee meniscus. We conducted a monocentric retrospective study based on 37 feet of 32 patients. Feet included presented with an intra-articular fibrous tissue during surgeries requiring a medial arthrotomy of the first metatarsophalangeal joint. Histological samples were analyzed, and comparison was made with histological samples of degenerative and injured knee menisci. Histologic analysis showed a fibrocartilaginous tissue similar to the meniscal tissue of the knee in 97.3% of cases. The tissue was fibro-chondroid connective tissue in 64.9% of the cases with the presence of collagen fibers and chondrocytes. This tissue was not intact with fissures or micro-fissures present in 89.2% of the cases. We confirmed the histological similarity of the tissue found inside the metatarsophalangeal joint with the knee meniscus. Lesions were of mechanical type without any inflammatory reaction. In the light of our findings and previous studies, it seems that this structure suffers mechanical damages as the deformity progresses. We recommend its removal in hallux valgus corrective surgery.

#42629 : Recent innovations using WBCT: review of the literature and proposal for a systematic classification.

Preferred format : a podium presentation OR a poster presentation

Authors:

François LINTZ (1), Cesar DE CESAR DE NETTO (2), Claudio BELVEDERE (3), Alberto LEARDINI (4), Alessio BERNASCONI (5)

1. Union Cheville Pied, Clinique de l'Union, Ramsay Santé, Saint Jean (Toulouse) , France
2. Department of orthopaedics, Duke University Medical Center, Durham, USA
3. Movement Analyis Laboratory, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy
4. Movement Analysis Laboratory, IRCCS Istituto Ortopedico Rizzoli, Bologna, Italy
5. Department of Public Health, Orthopaedic and Traumatology Unit, University Federico II of Naples, Naples, Italy

Keywords: Classification, cone beam, WBCT, segmentation

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Since 2012, the year the first publication on an extremity conebeam was released, the advent of weight-bearing computed tomography (WBCT) has sparked an increasing demand for advanced computational tools. These innovations are facilitated by the unique ability of WBCT to provide 3D, weight-bearing digital clones of bone architecture, yet their role and position in patient workflows are often difficult to grasp. The objective of this study was to develop a useful classification of these techniques, aiming to elucidate their role in patient management. A systematic literature review was conducted following PRISMA guidelines, initially including 207 studies published post-2012. Two board certified orthopedic surgeons then classified the publications, selecting 50 relevant studies. A chronological classification was deemed most appropriate. Three classes of tools were identified: I-Acquisition, II-Analysis, III-Clinical Applications. Each class was considered for subdivision into subclasses. Class I was divided into dynamic and static. Class II into Pre-processing and Post-processing. Class III was not subdivided. The literature concerned post-segmentation methods in 82% of the considered publications. This systematic review enabled to propose a classification of advanced techniques for WBCT datasets and found that those were primarily post-segmentation techniques. The most reported tools aim to provide quantitative 3D bone positions, followed by qualitative and quantitative visualization tools, with joint space mapping being the most frequently reported. Segmentation was found to be an indispensable step in the development of WBCT-related innovations, particularly its automation, which allows for seamless integration of innovations into clinical practice aiming to hasten and improve patient management workflows.

#42631 : Bone density analysis in the distal tibia after subtalar arthrodesis using WBCT.

Preferred format : a podium presentation OR a poster presentation

Authors:

François LINTZ (1), Alessio BERNASCONI (2), Eli SCHMIDT (3), Laetitia THEUNISSEN (4, 5), Céline FERNANDO (6), Matthieu LALEVEE (7, 8), Cesar DE CESAR DE NETTO (9)

1. Union Cheville Pied, Clinique de l'Union, Ramsay Santé, Saint Jean (Toulouse) , France
2. Department of Public Health, Orthopaedic and Traumatology Unit, University Federico II of Naples, Naples, Italy
3. Department of Orthopaedics and Rehabilitation, University of Iowa Hospitals and Clinics, Iowa city, USA
4. Union Cheville Pied, Clinique de l'Union, Ramsay santé, Saint-Jean (Toulouse), France
5. Service chirurgie orthopédique, CHU Tivoli, La Louvière, Belgium
6. Union Cheville Pied, Clinique de l'Union, Ramsay Santé, Saint Jean (Toulouse), France
7. Department of Orthopedics and Rehabilitation, University of Iowa, Iowa City, USA
8. Service de chirurgie orthopédique et traumatologique, Centre Hospitalier Universitaire de Rouen, Rouen, France
9. Department of orthopaedics, Duke University Medical Center, Durham, USA

Keywords: Hounsfield units, bone mineral density, weight bearing CT, subtalar arthrodesis

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The utility of Hounsfield units (HU) for assessing Bone Mineral Density (BMD) in orthopedics is not well known despite its acceptance in dental applications. This study aims to evaluate if HU measurements at specific cortical landmarks in the distal tibia can monitor BMD changes over time and across different bone areas post-operatively in the context of hindfoot fusions. Retrospective analysis including 47 feet who underwent subtalar arthrodesis for Progressive Collapsing Foot Deformity or post-traumatic osteoarthritis. Patients were immobilized and non weight-bearing for 6 weeks post-surgery. Pre- and post-operative weight-bearing computed tomography (WBCT) images were analyzed to mark specific cortical HU values at landmarks situated 2, 4, 6cm above the tibial plafond, both sagittally and coronally. Comparing preoperative with 6-week and 4-6 month postoperative follow-ups, no significant difference in HU values was observed. However, significant differences were noted in the sagittal and coronal measurements within the first 4 centimeters above the tibial plafond. Specifically, preoperative maximal HU values were significantly higher sagittally than coronally at 2 and 4cm, but this difference was not significant at 6cm. The study indicates that HU values from well-defined cortical landmarks can differentiate between sagittal and coronal bone density distributions in individual patients at a single time point. However, HU do not provide absolute values for comparison. Future research should explore calibration methods, such as the use of phantoms, to obtain baseline values and extend HU measurements to monitoring BMD changes over time.

#42632 : The density-weighted foot center is different to the geometric foot center.

Preferred format : a podium presentation OR a poster presentation

Authors:

François LINTZ (1), Alessio BERNASCONI (2), Cesar DE CESAR DE NETTO (3), Céline FERNANDO (4), Patrick CHABRAND (5)

1. Union Cheville Pied, Clinique de l'Union, Ramsay Santé, Saint Jean (Toulouse) , France
2. Department of Public Health, Orthopaedic and Traumatology Unit, University Federico II of Naples, Naples, Italy
3. Department of orthopaedics, Duke University Medical Center, Durham, USA
4. Union Cheville Pied, Clinique de l'Union, Ramsay Santé, Saint Jean (Toulouse), France
5. Institut des sciences du mouvement Étienne-Jules Marey, CNRS-UMR 7287, Aix Marseille University, CNRS , Marseille, France

Keywords: Weight-bearing CT, bone mineral density, foot center, hounsfield units

Your abstract (DO NOT add the title, list of authors or keywords in this field)

It has become a reality with the advent of weight-bearing CT (WBCT) that weight-bearing (WB) is a significant element to be considered when analyzing foot and ankle images. Hounsfield Units allow for relative bone density analysis on WBCT. Our objective was to compare the relative positions of the geometric foot center (GC) and the density-weighted foot center (DC). Thirty-two feet were retrospectively selected. Bone segmentation was performed excluding tibia, fibula and all phalanges. Data was computed to obtain the geometric centers (from bone surface coordinates), which were considered as reference and were given (0,0,0) coordinates. Thereafter, density-weighted centers coordinates were calculated. The difference between the two centers represented the shift which was assessed along the sagittal axis (anterior shift), transversal axis (lateral shift) and craniocaudal axis (upward shift). The 3D displacement vector between GC and DC had a norm of 10mm. We found that DC was significantly shifted anteriorly by 8.9±0.3mm (range, 5.6 to 13.4mm), medially by 0.4±0.8mm (-1.3 to 0.3mm) and upwardly by 4.2±0.14mm (2.8 to 5.9mm) ($p<0.001$ in all cases). Our hypothesis was confirmed: the geometric and weighed foot centers were different. DC was more anteriorly and slightly medially situated. The more anterior position may be explained by the fact that human foot is responsible for anteriorly orientated longitudinal movement on average. We deem that BMD is a significant dimension in WBCT datasets that cannot be ignored in the development of new measurement tools.

#42637 : Optimizing Maisonneuve Fracture Reduction: A Case Series Using a Novel Distraction Technique

Preferred format : an ePoster Displayed

Authors:

Craigven Sim (1), Eric Cher (2)

1. , , Singapore, Singapore
2. , Sengkang General Hospital, Singapore, Singapore

Keywords: Maisonneuve, fibula, trauma, fracture reduction

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Maisonneuve fracture involves the disruption of the syndesmosis and necessitates surgical intervention. The aim is to restore fibula length and stabilize the syndesmosis. Classic manual reduction may be strenuous to maintain during the syndesmosis fixation. Hence, we report our method of reduction with a distraction technique that provides mechanical advantages. Case Presentation: We present a case series of 3 patients with Maisonneuve fracture where indirect fibula reduction was achieved via a novel distraction technique with instruments. Case 1 and 2 suffered an isolated high fibular fracture whereas Case 3 had concomitant ankle fractures. Syndesmosis disruption was confirmed with intraoperative Cotton's and external rotation test. All 3 cases underwent dual tightrope fixation of the syndesmosis. To achieve the reduction, a 3 hole plate was applied on the distal fibula fragment with a cortical screw applied over the most proximal hole. Subsequently, a 5mm Steinmann pin was drilled into the lateral tibial. The entry point of the tibial pin is immediately anterior to the fibula and 2cm proximal to the applied fibular plate. An edged lamina spreader was used to apply distraction between the plate and the Steinmann pin. Temporary reduction is held with a quadcortical K-wire, followed by tightrope fixation through the middle and inferior holes of the fibular plate. Clinical Outcomes: Postoperative imaging showed normal talocrural angle and presence of the fibula dime sign. Discussion: This technique provides mechanical advantages in strength and stability, holding the reduction whilst freeing up the surgeon's hands to perform the syndesmosis fixation.

#42653 : Treatment of Symptomatic Flexible Flat Foot in Pediatrics with A Modified Mosca’s Lateral Column Lengthening

Preferred format : a podium presentation OR a poster presentation

Authors:

alireza ghaznavi (1), shayan amiri (2), ahmad hemmatyar (1)

1. , iran university of medical sciences, tehran, Islamic Republic of Iran
2. , iran university of medical sciences, tehran, Islamic Republic of Iran

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The optimal treatment of flat foot is still controversial. In this study, we evaluated the outcome the Mosca’s lateral column lengthening with the advancement of the tibialis posterior. Methods: In a retrospective study . fifty symptomatic pediatric flexible flat feet with or without hindfoot valgus were included in this study. Lateral column lengthening was done as described by Mosca. The tibialis posterior advancement was made on the navicular bone instead of the medial cuneiform. Radiographic measures of outcome were evaluated before the surgery and immediately after the surgery and included Calcaneal Inclination (Pitch) Angle, Talonavicular Coverage Angle, Talo-1st metatarsal Angle (Meary’s Angle), Lateral Talocalcaneal Angle, Anteroposterior Talocalcaneal Angle (kite’s angle), and Talar Declination Angle (Talo-Horizontal Angle). A paired t-test or its nonparametric counterpart was used to compare the mean value of preoperative and postoperative measures. A chi-square test was used to compare qualitative variables Results: The mean age of the patients was 9.2±2.2 years. The mean follow-up of the patients was 2.6±1.1 years. All radiographic measures were significantly improved after the surgery. According to the radiographic measures, under-correction was seen in seven feet. Overcorrection was seen in one of the patients. Union of the osteotomy site was observed in all feet. No patients had postoperative pain or limited ankle range of motion. One superficial infection occurred that was managed with oral antibiotics. Conclusion: Lateral column lengthening and advancement of tibials posterior on navicular bone is a safe and effective procedure in the treatment of the symptomatic pediatric flexible flat foot.

#42691 : Case series of avulsion fractures of the os calcis – does the type of fixation make a difference?

Preferred format : a podium presentation OR a poster presentation

Authors:

Taegyeong Tina Ha (1), Clara Moy (2), Fabienne Inglin (1), Senthil Kumar (1)

1. Trauma & Orthopaedics, NHS, Glasgow, United Kingdom
2. , School of Medicine, University of Glasgow , Glasgow, United Kingdom

Keywords: Hindfoot, os calcis, fracture.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Calcaneal avulsion fractures are serious injuries with high potential for complications. A variety of fixation methods exist but none have been shown to be universally effective in all patients. We describe a hybrid screw and plate fixation which might offer increased stability in these difficult injuries. Methods: Between 2008 and 2021, 27 patients who underwent internal fixation of calcaneal tuberosity avulsion fractures were retrospectively identified through our departmental database. Patient demographics, co-morbidities, fixation type and complications were recorded. Results: 9 patients had hybrid fixation with cannulated screws and a small fragment plate, 2 had plate fixation only and 16 had screw fixation only. 19 (70.4%) patients had soft tissue damage pre-operatively. 11 (40.7%) patients had postoperative wound healing issues with 6 cases of delayed wound healing, 2 superficial infections requiring antibiotics and 3 deep infections requiring further surgery. The presence of soft tissue compromise pre-operatively was associated with significantly higher rate of post-operative wound issues (P=0.005). There was one failure each in the screw only fixation and hybrid fixation groups which required revision fixation. Conclusion: These are difficult injuries with high rates of soft tissue complications and the presence of preoperative skin damage is a poor prognostic factor. The observed failure rate in our series is much lower than reported in other series. The type of fixation does not appear to influence the outcome although the plate and screw combination, if correctly done, may result in better outcomes.

#42721 : Hajdu-Cheney syndrome. A rare case.

Preferred format : an ePoster Displayed

Authors:

Sandra Catalan Amigo (1), Rosa Busquets Net (2)

1. Trauma and orthopaedic surgeon, Hospital Fremap Barcelona, Barcelona, Spain
2. Especialista COT. Cap d'Unitat Peu i Turmell. , Hospital Vall d'Hebron. Barcelona. Spain., Barcelona, Spain

Keywords: Acroosteolysis, Hajdu-Cheney syndrome, rare diseases.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Hajdu-Cheney syndrome (HCS) is a genetic autosomal dominant disease (although there are some non-hereditary cases due to spontaneous de novo mutation of terminal exon of NOTCH 2), a connective tissue disorder, highly uncommon. It causes acro-osteolysis, generalized osteoporosis, and a series of developmental skeletal disorders and multiple clinical and radiological manifestations. Case Report: A 58-year-old woman, being treated with bisphosphonates, was referred to our clinic with the diagnosis of HCS. She had surgery twice before: cruentation and filling of a painful proximal phalanx cyst of the hallux and a fifth metatarsal stress fracture treated with a screw. Due to a persistent arthropathic painful metatarsophalangeal joint of the hallux, we performed a fusion with a compression screw and a plate, and bone graft. In a second time, we treated the fifth metatarsal nonunion with bone graft as well, and a preformed plate. Two years after the metatarsophalangeal joint fusion the patient complained of pain in the compression screw, hence we did a CT that confirmed the consolidation of the fusion, and we remove the material. Four months after, the patient is pain-free, and she is wondering about removing the fifth metatarsal osteosynthesis or not. Conclusion: HCS clinical manifestations include shortening of toes, resorption of terminal phalanges, fractures due to osteoporosis and joint deformities, though management of such deformities can be challenging. The course after bone surgery can be complicated by bone resorption and nonunion hence it is important considerate these post-operative complications.

#42732 : The Deltoid-Spring Ligament Complex: A Scopus Review and Segmental classification

Preferred format : an ePoster Displayed

Authors:

ZAIN AL ABDEEN AL ZUABI (1), Pasapula Chandra (2), Andrey Bilyy (3), Waiwai winmar (4), Honey Manso (5), steven famure (1), Georgios solomou (6), Cecilia Brassett (6)

1. , THE QUEEN ELIZABETH HOSPITAL KINGS LYNN, kings lynn, United Kingdom
2. Trauma and Orthopaedic, THE QUEEN ELIZABETH HOSPITAL KINGS LYNN, kings lynn, United Kingdom
3. , St. Thomas' Hospital, london, United Kingdom
4. , Norfolk and Norwich University Hospital, , Norwich, United Kingdom
5. , The Queen Elizabeth Hospital, kings lynn, United Kingdom
6. , University of Cambridge, Cambridge, United Kingdom

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objective: evaluate and report the variation in descriptions and currently accepted terminology for the individual bands comprising the deltoid and spring ligaments in anatomical dissection studies. Methods: literature search for cadaveric studies identifying anatomical variations in the deltoid and spring ligament complexes was conducted using PubMed and Medline databases. The inclusion criteria encompassed human cadaveric dissection studies with measurement of individual deltoid and spring ligament bands, human cadaveric studies, English language and full-text availability. The following studies were excluded: animal studies, articles describing surgical repair approaches and radiological assessment studies without cadaveric dissection. The demographic data, parameters of individual components as well as the morphological structure of individual deltoid bands were summarised. Results: Out of the 18,208 studies from the database search, 11 articles were included in this study. 13 additional studies were obtained from the bibliographies, resulting in a total of 24 studies with 528 ankles evaluated. Conclusion: Due to the complexity of their anatomical relationships, the deltoid and spring ligaments should be described as a single entity: the 'deltoid-spring ligament complex'. Its gross morphology can be described as triangular, trapezoidal, and rectangular. It can be differentiated into the deep deltoid and the superficial deltospring ligament which are connected. The latter encompasses the superficial deltoid and superomedial part of the spring ligament. The deep plantar ligament or 'the inferior spring ligament' are separate entities reflecting their discrete natures and histological difference. The superficial deltospring ligament can be divided into contiguous segments with variable bands (thickening but not true ligaments

#42741 : Arthroscopic versus Open Repair for Chronic Lateral Ankle Instability: An Updated Systematic Review and Meta Analysis

Preferred format : a podium presentation OR a poster presentation

Authors:

Ryan Wai Keong Loke (1), Alexander Xi Xuan Ang (1), Jonathan Jia En Boey (2), Vikaesh Moorthy (2), Ruixiang Toh (2), Kae Sian Tay (2)

1. , Yong Loo Lin School of Medicine, National University of Singapore, Singapore, Singapore, Singapore
2. Department of Orthopaedics, Singapore General Hospital, Singapore, Singapore, Singapore, Singapore

Keywords: Lateral Ankle Instability, Brostrom Procedure, Arthroscopic, Open, Meta-analysis

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Lateral ankle sprains are the most common injury in sports. Up to 40% of patients fail conservative treatment, developing chronic lateral ankle instability. In recent years, arthroscopic Brostrom repair has gained increasing popularity to address the challenges of performing open repair. However, evidence has been equivocal regarding its clinical outcomes when compared to an open approach. Aim: Compare arthroscopic and open approach to provide additional perspective when managing chronic lateral ankle instability Methodology: Systematic review and meta-analysis with trial sequential analysis (from inception to 10 June 2023) searching PubMed, Embase, Scopus, Cochrane. Registered on PROSPERO (CRD42023389626). Primary outcomes: Mean difference of functional and clinical outcomes (American Orthopaedic Foot & Ankle Society score, Karlsson score, visual analog scale) Secondary outcomes: Risk ratio of complications Results: Arthroscopic Brostrom is clinically more effective compared to the open approach based on post-operative American Orthopaedic Foot & Ankle Society scores. Pooled post-operative American Orthopaedic Foot & Ankle Society scores was higher in arthroscopic group (MD = 1.08, 95% CI: 0.19 - 1.97, p = 0.02, 12 studies) Pooled post-operative Karlsson scores and visual analog scale scoresdid not reach statistical significance. Discussion: Arthroscopic Brostrom approach confers better functional outcomes compared to the open approach, with both groups having low, non-significant complication rates between each other. Other factors such as availability of resources, expertise, and manpower need to be considered as well. Nonetheless, the absence of statistically significant differences between complications in both arthroscopic and open Brostrom procedures suggest they are safe and viable options.

#42750 : CHANGING THE BIOMECHANICS OF TIGHT GASTROCNEMIUS-CALCANEUS-PLANTAR FASCIAL(GCP) COMPLEX IMPROVE THE FUNCTIONAL OUTCOMES IN THE TREATMENT OF RESISTANT HEEL PAIN

Preferred format : a podium presentation

Authors:

Aysha Rajeev (1), George Koshy (2), Kailash Devalia (1)

1. Trauma and Orthopaedics, GATESHEAD HEALTH FOUNDATION NHS TRUST, GATESHEAD, United Kingdom
2. , Gateshead Health Foundation NHS Trust, GATESHEAD, United Kingdom

Keywords: Recalcitrant, Heel pain, Biomechanics, Gastrocnemius-Calcaneal-Plantar fascia Complex

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Achilles tendinopathy (AT) and plantar fasciopathy (PF) causing chronic heel pain remain the most challenging and frustrating conditions. The aim of the study design is to retrospectively assess the efficacy of Achilles tendon reconstruction (ATR) and proximal medial gastrocnemius release (PGMR) for the treatment of recalcitrant heel pain and to compare its outcomes. Materials A retrospective analysis of 72 patients who were referred to our clinic for resistant heel pain. All of them had a period of one year of conservative treatment. There were 45 patients with AT and 27 with PF. The AT patients underwent split detachment, debridement, excision of Haglund`s deformity and double row knotless suture. Patients with PF underwent PGMR. Pre and post op MOxFQ, EQ5D. EQ VAS scores, mean time to regain full ROM of ankle and return to full activities were documented. Results The mean age was 54.5 years for AT and 50.2 years for PF groups. The mean follow up was 41.2 months (range 36- 66). The mean pre-op MOxFQ, EQ5D and EQVAS scores improved from 67.77±20.41, 19.34±7.81,48.64±10.91 to 21.46±12.384.52±2,58 and 69.34±18,75 for AT, for PF patients the scores improved from 41.35±10.04,14.14±2.71 and 44.67 ±17.94 to 18±16.82, 8.64±5.15 and 71.87±28.35.72& of the patients went back to their pre-injury status Conclusion Our study design suggests that in resistant and chronic cases of heel pain identifying the correct pathology and targeted treatment by considering gastrocnemius-calcaneus -plantar fascia as a single complex gives good functional outcomes and early return to full activities.

#42758 : Percutaneous vs open first metatarsophalangeal joint arthrodesis: a proportional meta-analysis and systematic review

Preferred format : a podium presentation OR a poster presentation

Authors:

Antonio Izzo (1), Alessio Bernasconi (2)

1. Dipartimento prevenzione e sanità pubblica, Università Federico II Napoli, San marco evangelista, Italy
2. Dipartimento prevenzione e sanità pubblica, Università Federico II Napoli, Napoli, Italy

Keywords: First metatarsophalangeal, Arthrodesis, Percutaneous, meta-analysis

Your abstract (DO NOT add the title, list of authors or keywords in this field)

OBJECTIVE: First metatarsophalangeal joint (MTPJ-1) arthrodesis (MTPJA-1) is the gold standard to treat end-stage osteoarthritis of this joint. The purpose of this study was to determine whether percutaneous techniques to perform MTPJA-1 might reduce the nonunion, complication and reoperation rate as compared to the open approach. METHODS: Following the PRISMA checklist,different databases were searched, including studies reporting patients affected by MTPJ-1 osteoarthritis and undergone MTPJA-1 stabilized using crossed screws as exclusive fixation method. Data were harvested regarding the cohort , the study design, the surgical technique and the final outcome at the longest follow-up. The MINORS was used to assess the methodological quality of studies. The percutaneous (PERC) and the open (OPEN) techniques were compared in terms of nonunion, complication and reoperation rate. RESULTS: Nine studies (225 MTPJA-1 in 211 patients) were selected (PERC=130 cases, OPEN=95). In the two groups, the mean (±SD) sample size (26.6±5.1 cases in PERC, 23.7±10.2 in OPEN; p=0.33), mean age of patients (62±5.4 and 59.5±5.4 years,; p=0.26), sex distribution (81%±0.6 vs 57%±0.2 females,; p=0.17) and length of follow-up (20.8±11.6 months vs 29.5±16.8 months, p=0.19) were comparable. The pooled nonunion rate (5% in PERC vs 6% in OPEN; p=0.93), complication rate (4% vs 17%; p=0.24) and reoperation rate (3% vs 5%; p=0.74) were not significantly different. The quality of studies was moderate in the two groups (MINORS 9±1.3 points in PERC vs,11.7±3.7 in OPEN; p=0.19). CONCLUSIONS: The nonunion, complication and reoperation rate after percutaneous or open MTPJ-1 arthrodesis stabilized using two screws are not significantly different.

#42760 : Debridement, antibiotics, and implant retention (DAIR) vs 1.5-stage revision vs 2-stage revision in periprosthetic ankle joint infection: a systematic review

Preferred format : a podium presentation OR a poster presentation

Authors:

Antonio Izzo (1), Alessio Bernasconi (2)

1. Dipartimento prevenzione e sanità pubblica, Università Federico II Napoli, San marco evangelista, Italy
2. Dipartimento prevenzione e sanità pubblica, Università Federico II Napoli, Napoli, Italy

Keywords: Ankle replacement, Infection, Dair, Revision

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Periprosthetic joint infection (PJI) is one of the most common complications and its management may be challenging. Our aim was to define the eradication rate and limits of the surgical procedures performed to treat PJI after TAR. This systematic review followed the PRISMA checklist and was registered in the Open Science Framework platform. Multiple databases were searched including clinical studies in which PJI after TAR was diagnosed and treated. Data were harvested regarding the cohort, the study design, the diagnostic criteria and the surgical treatment for PJI. The MINORS was used to assess the methodological quality of studies. Three groups were built based on the surgical procedure performed by authors: Group 1 for DAIR, Group 2 for 1.5-stage revision and Group 3 for 2-stage revision procedures.Fourteen cohorts from eight studies (152 infected TARs from 152 patients; 44% females, mean age of 61.4 years) published between 2012 and 2023 were included.The definition of eradication of the infection was heterogenous among studies. The eradication rate in DAIR, 1.5-stage and 2-stage groups was 64% (39/58 patients) 91% (11/12) and 89% (47/54). respectively. The overall incidence of below-knee amputation was 6.5% at a mean 38.6-month follow-up. MINORS score was 8 out of 16 for noncomparative studies and 14.6 out of 24 for comparative ones. Decision-making in PJI after TAR is based on small-sample retrospective studies. In this review, the estimated effectiveness of DAIR and exchange procedures to eradicate the infection was two-thirds and nine-tenths, respectively. In case of failure, below-knee amputation is not uncommon.

#42764 : Arthroscopically-assisted reduction and internal fixation (ARIF) vs percutaneous fixation in talar fractures: a systematic review of the literature

Preferred format : a podium presentation OR a poster presentation

Authors:

Antonio Izzo (1), Alessio Bernasconi (2)

1. Dipartimento prevenzione e sanità pubblica, Università Federico II Napoli, San marco evangelista, Italy
2. Dipartimento prevenzione e sanità pubblica, Università Federico II Napoli, Napoli, Italy

Keywords: Arthroscopically-assisted, Percutaneous,Talar fracture, review

Your abstract (DO NOT add the title, list of authors or keywords in this field)

OBJECTIVE: Arthroscopically-assisted Reduction and Internal Fixation (ARIF) in acute trauma is progressively gaining popularity in foot and ankle surgery. The purpose of this study was to determine whether ARIF for talar fractures influences the healing and complication rate as compared to percutaneous fixation (PF). METHODS: Following the PRISMA checklist, muitiple databases were searched, including studies reporting on patients diagnosed with a talar fracture undergone minimally-invasive surgery using screws as exclusive fixation method. We extracted data regarding the cohort,the study design,the surgical technique and the outcome at the longest follow-up. The MINORS score were used to assess the methodological quality of studies. RESULTS: Eight studies (124 talar fractures) were selected (ARIF=73, PF=51). In the two groups, the mean (±SD) sample size, mean age of patients and sex distribution were comparable. The mean follow-up was longer in ARIF (46.5±26 months) than in PF (36.7±3.8 months) but the difference was not significant (p=0.11). The healing rate assessed on radiographs was similar (99%±1 in ARIF vs 98%±3 in PF) in the two groups (p=0.85). The complication rate did not differ either (13%±9 in ARIF vs 25%±17 in PF; p=0.19). The incidence of early peritalar osteoarthritis was significantly lower in ARIF (3%±3 vs 16%±5; p=0.04). The mean MINORS was 9.8. CONCLUSIONS: In this review, we found a similar radiographic healing rate and complication rate in talar fractures treated percutaneously using screws with or without arthroscopy. The incidence of early peritalar osteoarthritis was significantly lower after ARIF than after standalone percutaneous fixation.

#42770 : Combined anterior and posterior vs isolated posterior facet fixation for subtalar arthrodesis: a proportional meta-analysis and systematic review of the literature .

Preferred format : a podium presentation OR a poster presentation

Authors:

Antonio Izzo (1), Martina D'Agostino (2), Giovanni Manzi (3), Alessio Bernasconi (4)

1. Dipartimento prevenzione e sanità pubblica, Università Federico II Napoli, San marco evangelista, Italy
2. Policlinico Federico II, Università Federico II Napoli, Napoli, Italy
3. Clinique du Val d'Ouest, none, Lione, France
4. Dipartimento prevenzione e sanità pubblica, Università Federico II Napoli, Napoli, Italy

Keywords: subtalar,arthrodesis,anterior facet,posterior facet

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Subtalar arthrodesis (SA) is a common procedure to treat end-stage subtalar osteoarthritis. We set out in order to determine whether a combined direct fixation of both anterior and posterior facets during SA might influence union and complications compared to isolated fixation of the posterior facet. METHODS In this PRISMA-compliant PROSPERO-registered systematic review, we included studies reporting data after SA stabilized with screws in adults. The characteristics of the cohort, study design, surgical details, nonunion and complication rate at the longest follow-up were recorded. The mCMS was applied to appraise the quality of studies. Two groups were compared: an ANT/POST group (screws positioned both in the anterior and posterior facet) and an ONLY POST group (isolated posterior facet fixation). RESULTS Eighteen series (685 feet: ANT/POST=96, ONLY POST=589) were selected. The median follow-up was 28 months (IQR, 12-42). The pooled proportion showed a similar nonunion rate (6% vs 10%;p=0.46) and complication rate (14% vs 19%,p=0.47) in the ANT/POST group as compared to the ONLY POST group. The pooled proportion of reoperation was not different either (ANT/POST: 7% vs ONLY POST: 10%,p=0.37). Kernel regression suggested a correlation between the proportion of open/arthroscopic procedures and the nonunion rate (p=0.025) with a median nonunion rate at 10.9% and 5.9%.Mean CMS was 40.4 points CONCLUSION This proportional meta-analysis suggested that a combined direct fixation of anterior and posterior facets during subtalar arthrodesis does not significantly influence the risk of nonunion nor affects the risk of complication and reoperation as compared to isolated posterior facet fixation.

#42772 : Long term outcomes using various patient reported outcomes following Lisfranc fixation .

Preferred format : a podium presentation

Authors:

Islam Sarhan (1), Mohamed Nagy (2), Neil Ashwood (3)

1. , , Burton on trent, United Kingdom
2. , University H of Derby and Burton, Manchester, United Kingdom
3. Professor, University H of Derby and Burton, Burton on trent, United Kingdom

Keywords: Lisfranc , Fixation , PROMS

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Lisfranc injuries are still area of debates regarding optimum management. Long term results are variable in literature. Methods: This is a retrospective study looking at patients who suffered from unstable Lisfranc injuries. We conducted the study to include cases from 2008 until 2021. Manchester-Oxford Foot Questionnaire (MOXFQ) , Health Questionnaire (EQ-5D-5L) and Foot Function Index (FFI) were used as patients related outcome measures. Results: 27 patients were detected with Lisfranc injury. Four of these cohort had non operative managed. Seven patients were lost to follow up due to various reasons (deceased, no answer, moved out the country), leaving 20 patients for follow up. The mean f/u was 9.03 years (range 2-14 years). We had nine males and eleven females with a mean age of 46.76 (range 28-78). Average MOXFQ was 35.52 , EQ-5D-5L was 9.8 and FFI was 36.96. Conclusion: Despite the notorious outcomes following Lisfranc injuries , non athlete population were scoring good outcomes and were leading normal function following restoration their alignment through surgical fixation. Patients found EQ-5D 5-L outcome was easy to use. Ethical approval Health Research Authority IRAS 333070 , UK.

#42784 : Surgical treatment of malunited calcaneal fracture: Effects of demographic variables, time, primary management of calcaneal fracture, and types on the clinical outcomes and radiological features

Preferred format : a podium presentation

Authors:

Amirreza Vosoughi (1), Zakaee Alireza (1), Ahmadifar Ali (1)

1. , Shiraz University of Medical Sciences, Shiraz, Islamic Republic of Iran

Keywords: calcaneus; calcaneal malunion; malunion; subtalar arthrodesis

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Aim: We aimed to evaluate the clinical outcomes and radiological features of the patients underwent surgery for malunited calcaneal fracture by focusing on the effects of primary treatment and interval between acute fracture to surgical treatment of calcaneal malunion. Methods: In a comparative retrospective study, 44 patients were participated at least one year after the surgery. Functional assessment of patients was evaluated using visual analog scale (VAS) for pain, American Orthopaedic Foot and Ankle Society (AOFAS) ankle-hindfoot scale, and Foot and Ankle Outcome Score (FAOS). Differences in postoperative talar declination angle (TDA) and calcaneal pitch angle (CPA) in comparison to preoperative values were measured. Results: Totally, 36 males and 8 females (mean age: 43 years and mean follow-up duration: 52.1 months) were included. Postoperative VAS, AOFAS, FAOS were 7.1±9.0 (↓69.6±12.7), 92.5±55.9 (↑45.9±13.0), and 80.70±2.74, respectively. Also, TDA and CPA increased from 13.0±2.7 to 20.4±1.6, and from 10.9±1.7 to 26.1±2.3, respectively. No statistical correlation was found between age, sex, types, hindfoot varus or valgus deformity, primary surgical versus conservative management of calcaneal fractures, delay in surgical treatment and postoperative clinical outcomes and radiological features differences. On the other hand, longer follow-up period was directly correlated with improved AOFAS score ($P<0.001$) and reduced VAS for pain ($P=0.030$). Conclusion: Operative management of calcaneal malunion can markedly decrease pain of the patients and increase their functional ability and radiological parameters. There is no effect of age, sex, types, delay in surgical treatment, initial management for calcaneal fracture on clinical and functional outcomes of patients.

#42798 : Is it necessary to modify the hallux valgus algorithm based on flat feet? the importance of double correction

Preferred format : a podium presentation OR a poster presentation

Authors:

Ana Núñez García (1), Jaime A Sánchez Lázaro (2), Javier Súarez Pérez (2), Óscar Fernández Hernández (2), Ana R Trapote Cubillas (2), Francisco J Madera González (2)

1. Foot and Ankle Unit, Hospital General Universitario de Villalba, Madrid, Spain
2. Foot and Ankle Unit, Hospital de León, León, Spain

Keywords: hallux values, flat feet, SCARF

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The objective of this study is to assess the effectiveness of calcaneal medializing osteotomy in patients with hallux valgus and symptomatic flat feet. Material and methods We conducted a retrospective cohort study. 2 groups of patients with hallux valgus and flat feet grade IIA and B: Group 1, operated by scarf and medializing osteotomy between 2016 and 2022. N 36. Average age 63 years. Mean Meary-Angle -18, angle preoperative metatarsophalangeal mean 37.7. Group 0, was created collecting all those isolated scarf surgeries carried out in the year 2022. Next we filter those that have a Meary Angle range equal to the group N 46. Meary mean -17.8, preoperative metatarsophalangeal angle mean 37.8. Preoperative weight-bearing radiographs and 6-month follow-up are evaluated. It is considered a recurrence a metatarsophalangeal angle above 20 from 6 months postoperatively. Results In the statistical study we observed that there were no differences between both groups neither in preoperative metatarsophalangeal angle nor in age ($p>0.05$). After medializing osteotomy there were a statistically significant change in the angles of Meary and Kite $p<0.05$. After surgery in group 1 the recurrence was 13.2% while in group 0 the recurrence rate was much higher (36.6%) ($P<0.05$). The odd ratio: flat feet with hallux valgus, only treated by scarf surgery, had a 3.8 times greater risk of recurrence than those treated with scarf and medializing osteotomy. Conclusion In our sample, flat feet was a risk factor for hallux recurrence, so it is recommended associate surgical gestures to correct flat feet.

#42829 : Total ankle replacement versus non-operative management for end-stage ankle osteoarthritis: a comparative analysis at 1-2 years follow-up.

Preferred format : a podium presentation

Authors:

Karolien Schwagten (1), Mathieu Dejonghe (1, 2), Corey Scholes (3), Andrew Wines (4, 5)

1. , AZ Groeninge, Kortrijk, Belgium
2. , UZ Gent, Gent, Belgium
3. , EBM Analytics, Sydney, Australia
4. , Orthopaedic Foot and Ankle Research Institute (SOFARI), Sydney, Australia
5. , North Sydney Orthopaedic and Sports Medicine Centre, Sydney, Australia

Keywords: ankle, ankle replacement, osteoarthritis, arthroplasty, prospective study, non-operative management

Your abstract (DO NOT add the title, list of authors or keywords in this field)

This prospective cohort study including adults with end-stage ankle osteoarthritis compares a 1 to 2-year outcome of total ankle replacement (TAR) to that of non-operative management (NOM). The primary outcome is measured by VR-12, FAOS (5 subclasses), patient satisfaction, and PCS short form. Statistical analysis was performed using one-way ANOVA as well as t-tests. 295 index procedures were included in the PROMs analysis of which 138 surgical (47,40%) and 152 non-operative (52,60%). Among the non-operative group, 85 patients (56%) were not offered surgical treatment and 72 patients (44%) decided to delay their surgery by more than 1 year. At 1-year follow-up, the treatment survival was 80,9% in the delayed surgery group and 94,4% in the not offered group. In the surgical group, there was 1 failure (99,3% survival). A significantly (P<0,001) worse FAOS pain score at follow-up was seen for the delayed group (61,6) compared to the not offered (69,1) and surgical group (78,1). Similarly, FAOS QoL was significantly (P<0,01) lower for the delayed group (39,6) compared to the surgical group (58,3) with an average difference of 19.7 points (95%CI 9.9 - 29.4). Between the not offered (50,1) and surgical group (58,3) there was a not significant (P=0,12) average difference of 8.2 points (95%CI -2.3 - 18.6). We conclude that TAR is superior to NOM regarding pain treatment for end-stage ankle osteoarthritis. Conservative treatment remains a valid option in end-stage osteoarthritis, however, if TAR is indicated and surgery is delayed these patients suffer worse outcomes during the delay time.

#42833 : Tibialis posterior tendon transfer and foot drop, a recent review of the literature.

Preferred format : a podium presentation OR a poster presentation

Authors:

Marco Pes (1), Prashant Singh (2), Suranga Gurusinghe (1), Francesc Malagelada (1), Amit Patel (1), Lucky Jeyaseelan (1)

1. , The Royal London Hospital, London, United Kingdom
2. , Royal National Orthopaedic Hospital, London, United Kingdom

Keywords: Foot drop, Tibialis posterior tendon transfer, Surgical techniques, Outcomes, Complications, Neuromuscular disorders

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Foot drop, characterized by the inability to dorsiflex the foot, significantly disrupts normal gait pattern. Common etiologies include peroneal nerve damage, anterior compartment muscle loss, and neurological disorders. Traditional treatments focus on physiotherapy, orthotic devices, or nerve repair surgeries. However, when these methods fail, surgical interventions like tibialis posterior tendon transfer become a viable alternatives. Objective: This literature review aim to evaluate the effectiveness of tibialis posterior tendon transfer for correcting foot drop, examining surgical techniques, outcomes, success rates, and complications. Methods: A systematic review was conducted using PubMed and Google Scholar, covering English-language peer-reviewed articles from 2000 onwards. The search included terms related to surgery and condition (e.g., "tendon transfer," "tibialis posterior," "foot drop"). Out of 453 studies identified, 15 met the inclusion criteria. Results: Findings from 15 studies revealed various surgical techniques, such as anterior transfer, double tendon transfer, and circumtibial routing. Success rates varied, with many patients showing improved dorsiflexion and gait. However, complications like wound issues, incomplete sensation, and tendon rupture were noted.The influence of early surgical intervention, patient-specific factors, and the choice of surgical approach (thorugh the interosseus membrane or circumtibial) and fixation technique (tendon-to-tendon vs. tendon-to-bone) were critical to outcomes. Conclusion:Tibialis posterior tendon transfer is an effective option for foot drop correction, offering high success rates and improved outcomes. Surgical technique selection should be tailored to patient condition and surgeon expertise. Future research should refine these techniques, explore success factors, and conduct long-term outcome studies. Individualized treatment planning is crucial for optimizing results.

#42838 : DOES FLEXOR HALLUCIS LONGUS GROOVE MORPHOLOGY HAVE AN EFFECT ON FLEXOR HALLUCIS LONGUS TENDON PATHOLOGIES?

Preferred format : a podium presentation

Authors:

Mert Erdem Yeşilli (1), Mehmet Ali Tokgöz (2), Yılmaz Ergişi (3), Alim Can Baymurat (2), Ulunay Kanatlı (4), Muhammet Baybars Ataoğlu (2)

1. Republic of Türkiye Ministry of Health , Ministry of Health Ankara Training and Research Hospital Department of Orthopedics and Traumatology, Ankara, Turkey
2. , Gazi University Faculty of Medicine Department of Orthopedics and Traumatology, Ankara, Turkey
3. , Karabük University Faculty of Medicine Department of Orthopedics and Traumatology, karabük, Turkey
4. Department of Orthopedics and Traumatology, Gazi University Faculty of Medicine, Ankara, Turkey

Keywords: Flexor hallucis longus , Bone variations , Posterior ankle endoscopy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objective: The aim of this study is to evaluate the effect of flexor hallucis longus (FHL) tendon groove morphology on tendon pathologies. Method: The surgical records and magnetic resonance imaging (MRI) scans of 112 patients who underwent posterior ankle endoscopy retrospectively reviewed. Groove depth, groove width, and opening angle values of the patients were measured on MRI. Additionally, groove morphology (C, U, L, and parenthesis) was classified radiologically. FHL tendon disorders (0: Normal, 1: Tendinitis, 2: Delamination, 3: Tear) were recorded by reviewing endoscopic records. The data were evaluated statistically. Results: There were 112 patients and FHL tendon disorders were detected in 38 (34%) patients. Analyses showed statistically significant lower groove depth (p: 0.014) and higher opening angle (p: 0.001) in normal patients. When patients were divided into two groups based on the presence of lesions, groove depth (p: 0.001) and opening angle ($p<0.001$) were significantly different between the two groups. When groove types were examined, it was observed that U and L type grooves were more common in patients with tendon pathology. Logistic regression analysis showed that an increase in groove depth increased the likelihood of developing tendon pathology by 8.4 times (CI: 1.19-59.65). Conclusion: In conclusion, the morphology of the FHL groove is closely related to tendon issues. The risk of tendon pathology increases in patients with deep grooves and narrow opening angles. Additionally, it was observed that the frequency of U-type grooves increases with the level of degeneration, while the frequency of parenthesis-type grooves decreases.

#42852 : How Elastic System Make Syndemosis Injuries Bounce Back

Preferred format : a podium presentation OR a poster presentation

Authors:

Luís Fabião (1), Vítor Macedo-Campos (1), Rita Faria de Castro (1), João Castro Mendes (2), Tiago P. Barbosa (3), Luís Miguel Silva (1), Tiago Frada (1), Bruno S. Pereira (1), Nuno Esteves (1)

1. , Unidade Local de Saúde Barcelos/Esposende, Barcelos, Portugal
2. , Unidade Local de Saúde de Coimbra, Coimbra, Portugal
3. , Unidade Local de Saúde de Braga, Braga, Portugal

Keywords: Elastic System, Syndesmosis, Malleolar Fracture

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Syndesmosis injuries typically result from a sudden external rotation of the dorsiflexed ankle. Trans-syndesmotic screw stabilization was the standard surgical treatment for acute injuries. Recently, elastic stabilization has been gaining importance by demonstrating promising safety functional outcomes. Our objective was to verify the effectiveness and safety of the elastic system in the treatment of acute syndesmotic injuries. A retrospective cohort study was carried out on patients with injuries to the syndemosis treated surgically with an elastic system, using clinical process analyses. The variables analyzed were: start date of full load and activities of daily living with and without restrictions, and associated complications. Data from 127 patients was recovered and analysed. Demographics were: 77 female, 50 male patients; average age 46,94 years and follow-up 10,15 months. Full weight bearing was initiated at 1,39 months. Daily life with minimal restrictions was achieved on average 3,38 months and with no restrictions at 7,09 months. The 3 main injuries identified were: bimalleolar fractures/equivalent Weber B and C (40,9% and 27,6%) and isolated syndesmotic lesions (11,8%). No major complications were reported. Elective hardware removal was performed in 27 patients, due to discomfort; minor wound complications, resolved with wound care procedures were reported in 4 patients (3,14%). We conclude that in our series the treatment of syndesmotic injuries with an elastic system had a good functional outcome, with return to previous functional status at average 7,09 months, with no major complications and low rate of minor complications.

#42854 : Bioinductive Collagen Implant Augmentation for Achilles Rupture

Preferred format : an ePoster Displayed

Authors:

Luís Fabião (1), Vítor Macedo-Campos (1), Rita Faria de Castro (1), Tiago P. Barbosa (2), João Castro Mendes (3), Luís Miguel Silva (1), Tiago Frada (1), Nuno Esteves (1), Bruno S. Pereira (1)

1. , Unidade Local de Saúde Barcelos/Esposende, Barcelos, Portugal
2. , Unidade Local de Saúde de Braga, Braga, Portugal
3. , Unidade Local de Saúde de Coimbra, Coimbra, Portugal

Keywords: Achilles Rupture, Bioinductive Collagen Implant, Regeneten

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Bioinductive implants, which stimulate the growth of new tissue, continue to be the focus of new research. This innovative technology is reshaping the landscape of orthopedic sports surgery by offering unprecedented opportunities to enhance and fortify weakened, partially torn, or previously repaired tendons. This implant has considerable research in adjusting rotator cuff tears and repairs, but not when it comes to the Achilles tendon. A 60-year-old female, presented to our emergency room with posterior ankle pain, after a direct trauma. At physical exam she presented an Haglund deformity, a palpable gap in Achilles' tendon insertion, and a negative Thompson. On X-ray it was possible to see an avulsion of calcification of the Achilles tendon, and an ultrassound confirmed the rupture. We performed a mini open Achilles tenorrhaphy, calcaneal osteotomy and a distal reinsertion with double row anchors plus Regeneten (bioinductive, highly porous, highly aligned, xenograft patch, from Smith & Nephew). She used a cast for 2 weeks, and next 4 weeks of walker boot. She began physical rehabilitation at 4 weeks. At 3 months she had no elongation at the tendon and at 4 months se started running. At one year the patient was clinically and imaging well, with no complications. Bioinductive collagen patch augmentation of Achilles tendon repair may be a useful adjunct for Achilles ruptures, allows for good integration and recovery without pain.

#42867 : Tibio-Talo-Calcaneal arthrodesis using a straight nail: A single tertiary referral centre experience over 10 years

Preferred format : a podium presentation OR a poster presentation

Authors:

Street Jean Marc (1), Prashant Singh (2), Karan Malhotra (1), Nicholas Cullen (1), Shelain Patel (1), Matthew Welck (3)

1. , Royal National Orthopaedic Hospital, London, United Kingdom
2. Trauma and Orthopaedic Surgery, Barts Health NHS Trust, London, United Kingdom
3. Trauma and Orthopaedic Surgery, Royal National Orthopaedic Hospital, London, United Kingdom

Keywords: tibio-talo-calcaneal arthrodesis, hindfoot nail, union rates, complications

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Tibio-talo-calcaneal (TTC) arthrodesis using a hindfoot intramedullary nail has been shown to be a safe and effective treatment for ankle and subtalar joint degenerative disease. This study aimed to review the radiological outcomes, complications and revision rates from a single tertiary referral centre. Methods Retrospective review of data from the last 10 years. Patients undergoing TTC arthrodesis using a straight hindfoot nail were included in the study. Data were collected on demographics, smoking status, co-morbidities, BMI, previous foot and ankle surgery, use of bone graft during surgery and adjunctive procedures. The primary outcome was the time to radiological union of the TTC arthrodesis determined on plain radiographs or weight bearing CT scan by a fellowship trained foot and ankle surgeon. Secondary outcomes were complication rate and requirement for revision surgery. Results A total of 114 TTC arthrodesis procedures in 112 patients were included. 66 patients (57.1%) were male, and mean age was 58.1 years. 80/114 (70.2%) cases were assessed using weight bearing CT scans and the remainder via plain radiographs. Radiological union occurred in 93/114 (81.6%), with a median time to union of 88 days (interquartile range 51). Complications were observed in 17 cases (14.1%), and 17 patients required re-operation, 12/17 (70.6%) of which involved dynamisation of the nail. Conclusions TTC arthrodesis with a straight nail demonstrates a low complication and revision rate with acceptable rates of union. Regression analysis regarding factors affecting union and complications has also been undertaken.

#42868 : Is prenatal testosterone-estrogen balance related to the os trigonum?

Preferred format : a podium presentation OR a poster presentation

Authors:

Mehmet Ali Tokgoz (1), Asım Ahmadov (1), Ethem Burak Oklaz (1), Ramazan Duzgun (1), Cagatay Delice (1), Ulunay Kanatli (1)

1. Department of Orthopedics and Traumatology, Gazi University, Ankara, Turkey

Keywords: Os trigonum, 2D:4D ratio, Testosterone, Estrogen

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction The 2D:4D ratio, an indicator of prenatal testosterone-estrogen balance, is the ratio of the second to fourth finger lengths. High exposure to testosterone has been demonstrated to affect secondary ossification centres by increasing chondrocyte proliferation, leading to increased bone growth. We hypothesized that a low 2D:4D ratio, indicating high prenatal testosterone exposure, could be associated with os trigonum. Materials and Methods This cross-sectional study included 47 participants, 27 with os trigonum and 20 controls. The presence of os trigonum was assessed on true sagittal radiographs, and the lengths of the second and fourth fingers of both hands were measured with a caliper. Both groups were compared based on 2D:4D ratios derived from the measurements. Results Patients with an os trigonum had a significantly lower 2D:4D ratio compared to patients without an os trigonum (mean: $p < 0.001$, right: $p = 0.005$, left: $p = 0.002$). The mean 2D:4D ratio had the highest predictive ability for ruling out os trigonum (AUC: 0.869, cutoff: 0.97). The left 2D:4D ratio also showed good predictive ability (AUC: 0.753, cutoff: 0.9962), while the right 2D:4D ratio had lower predictive ability (AUC: 0.743, cutoff: 0.9892). Logistic regression probabilities for each ratio showed high predictive value for the presence of os trigonum. Conclusion A low 2D:4D ratio is associated with the presence of os trigonum. Testosterone could influence os trigonum formation by affecting the secondary ossification process in the talus.

#42869 : Arthroscopic treatment of chronic lateral ankle instability: a new technique

Preferred format : a podium presentation OR a poster presentation

Authors:

Luís Fabião (1), Vítor Macedo-Campos (1), Rita Faria de Castro (1), Tiago P. Barbosa (2), João Castro Mendes (3), Luís Miguel Silva (1), Tiago Frada (1), Daniel Freitas (4), Guilherme França (2), Nuno Esteves (1), Bruno S. Pereira (1)

1. , Unidade Local de Saúde Barcelos/Esposende, Barcelos, Portugal
2. , Unidade Local de Saúde de Braga, Braga, Portugal
3. , Unidade Local de Saúde de Coimbra, Coimbra, Portugal
4. , Hospital da Prelada, Porto, Portugal

Keywords: Arthroscopy, Chronic lateral ankle instability, Knotless tissue anchor

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Chronic lateral ankle instability (CLAI) is prevalent in sports, traditionally treated with open surgery – modified Broström-Gould. Recently, arthroscopic treatment has gained interest, though studies are limited. This study introduces a new arthroscopic CLAI repair technique using knotless anchors, comparing its outcomes to existing literature and evaluating postoperative improvements in clinical and functional scores. Data was collected from 36 patients (64% male, 36% female, mean age 27.5) who underwent arthroscopic repair with a knotless anchors system. Evaluations were conducted preoperatively, and at 6 and 12 months postoperatively, measuring variables such as age, sex, Visual Analog Scale (VAS), American Orthopaedics Foot and Ankle Society Score (AOFAS) Ankle-Hindfoot Scale, Karlsson-Peterson score, patient satisfaction, and surgical complications. Results indicated significant improvements in VAS, AOFAS, and Karlsson-Peterson scores ($p < 0.001$) at both 6 and 12 months. The AOFAS score increased from a median of 61.0 preoperatively to 96.0 at 6 and 12 months. The Karlsson-Peterson score improved from a median of 45.0 preoperatively to 95.0 at both postoperative intervals. Patient satisfaction at 12 months was high, with 91.7% very satisfied and 8.3% satisfied, and only two minor complications reported. No significant impact of age or gender on outcomes was found. The new arthroscopic technique with knotless anchors demonstrated excellent short-term postoperative recovery. Future research should compare this technique with open Broström-Gould surgery and other arthroscopic methods using knot systems.

#42870 : A case series: Results of surgical reconstruction of midfoot Charcot neuro-arthropathy in a multidisciplinary team

Preferred format : a podium presentation OR a poster presentation

Authors:

Marijn Stelwagen (1), Wouter Brekelmans (2), Boudewijn Borger van de Burgh (3), Menno Benard (4), Wilbert van Laar (1)

1. Orthopedic surgery, Alrijne Hospital, Leiderdorp, The Netherlands
2. Alrijne Wound Centre, Alrijne Hospital, Leiderdorp, The Netherlands
3. Vascular Surgery, Alrijne Hospital, Leiderdorp, The Netherlands
4. Research coordinator & researcher orthopedics, Alrijne Hospital, Leiderdorp, The Netherlands

Keywords: Charcot, midfoot, infection, multidisciplinary team, surgical reconstruction, diabetes, intramedullary beam, osteoarthropathy, deformity, ulcers

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Charcot neuro-osteoarthropathy (CNO) of the midfoot, the most common location of CNO, can cause severe instability and deformity. Increased deformity correlates with a higher incidence of ulcers, raising the amputation risk 12-fold. Surgical reconstruction is increasingly used in an attempt to preserve the foot. However, multiple factors negatively impact the outcome, including peripheral artery disease (PAD) and poorly controlled diabetes. This retrospective case series describes the results of surgical reconstruction of midfoot CNO in a multidisciplinary team. Methods: Patients with midfoot CNO were included if they had an indication for surgical reconstruction, Meary's angle greater than 27 degrees or progressive sagging despite conservative therapy, between 2018 and 2024. Patients were treated according to a multidisciplinary protocol, including optimization of glucose regulation and vascular status, and surgical reconstruction by the super construct concept. Results: Seventeen patients were included from a single center. The mean age was 58 years and 88% was diabetic. Eighty percent had elevated HbA1c levels, of which 75% normalized following treatment. Four patients (24%) were diagnosed with PAD, of whom two were successfully revascularized. The mean Meary's angle improved from 33,2 to 5,5 degrees after surgery. Four patients (24%) developed deep infections, with three requiring additional surgery. No amputations were performed. An ulcer-free, stable, plantigrade foot was achieved in 16 patients (94%). Conclusion: This case series demonstrates that amputation can be prevented in patients with midfoot CNO provided they are treated by a multidisciplinary team combining surgical reconstruction with treatment of comorbidities such as PAD and diabetes.

#42871 : Turf-toe injuries, a diagnostic and therapeutic challenge.

Preferred format : an ePoster Displayed

Authors:

Ana Rosa Trapote Cubillas (1), Marcos González Alonso (2), Francisco Madera Gonzalez (3), Oscar Fernández Hernández (3), Jaime Antonio Sánchez Lázaro (3)

1. Unidad de Pie y Tobillo, Hospital Universitario de León, Leon, Spain
2. , Hospital Universitario de León , León , Spain
3. Unidad de Pie y Tobillo, Hospital Universitario de León, León, Spain

Keywords: Hallux; Metatarsophalangeal; Plantar plate;Turf-Toe;

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Turf-Toe injuries encompass a wide spectrum of traumatic injuries of the first metatarsophalangeal (MTP) joint. They are produced by medial or lateral stress and forced hyperextension, which affects the plantar plate (PP). The patient will commonly complain of pain and swelling, limitation of mobility and instability. Grade III of Anderson classification requires surgical treatment. We report the case of a 38-year-old man who suffered trauma on his right great toe 3 months before. On examination, varus deformity, lateral sesamoid pain, and instability were notable. Weight-bearing radiographs revealed an avulsion-fracture of the PF, proximal displacement of the lateral sesamoid and hallux varus. MRI showed rupture of the lateral collateral ligament at the PF insertion, complete rupture of the PP with disinsertion at the level of PF and a mild joint effusion. The injury was classified as grade III, so surgical treatment was indicated. An L-shaped plantar approach was performed at the first interdigital space, finding rupture of the joint capsule, PP and lateral collateral ligament. They were reinserted into the PF with 2 JuggerKnot-1.45mm. After 10 days, the bandage was replaced by an orthosis and weight baring was allowed with rigid-soled orthopedic shoe for 6 weeks. The patient presented good functional outcomes with complete range of motion. Conclusions Turf-Toe injuries are uncommon, highly disabling, and require a high index of suspicion. Treatment is controversial, with surgery being indicated in grade III. In our experience, the reinsertion of the PP and the collateral complex in the PF presents satisfactory results.

#42877 : Two conservative treatments of plantar fasciitis – a prospective randomized controlled trial with one year follow-up.

Preferred format : an ePoster Displayed

Authors:

Grethe Elisabeth Borchgrevink (1), Marit Ulla Lund (2), Øyvind Bernhardsen (2), Ole-Henrik Karlsaune (2), Olav Andreas Foss (3)

1. Department of orthopedic Surgery, St.Olav University Hospital, Trondheim, Norway
2. , Trondelag Orthopedic Workshop, Trondheim, Norway
3. , St.Olav University Hospital, Trondheim, Norway

Keywords: conservative treatment, plantar fasciitis, randomized controlled trial

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The aim of the study was to compare the efficacy of two conservative treatments of plantar fasciitis: a group with physical stretching of gastrocnemius by an experienced physical therapist and a group using insoles adapted by an experienced orthopaedic engineer. We wanted to include a control group but this was rejected by the National Committee for Medical and Health Research Ethics. Power and Sample Size was estimated for two independent groups using Visual Analogue Scale (0-10) as outcome, with at least 2 points in clinical difference. We estimated data without normal-distribution, and found the need of 15 patients in each group. The patients were referred by their general practitioner and the recruitment was made consecutively. The patients were randomized into the two groups. The mean age was 51 years (SD 12.7). Mean BMI was 30 (SD 5.6). The follow-up period was one year, with clinical investigations at the time of inclusion and six months later. Every month for 12 months a pain-report was obtained through telephone contact. For the pain assessment, we used Visual Analogue Scale (VAS) and Manchester-Oxford foot questionnaire (MOXFQ). For both treatment groups in all VAS-and-MOXFQ-parameters there was statistically significant reduction in pain and functional improvement after 6 month and after one year. The gastrocnemicus stretching group was somewhat less bothered, but there were no statistically significant differences between the two treatment groups. The findings in the physical examinations will be presented at the meeting.

#42878 : Quantification of hindfoot kinematics and articular joint loading - a combined in vivo and in silico workflow based on 4D CT imaging

Preferred format : a podium presentation

Authors:

Barbara Postolka (1), Bryce A. Killen (1), Hannelore Boey (1, 2), Tiago M. Malaquias (2), Tassos Natsakis (2, 3), Stefan Clockaerts (4), Dominique Misselyn (5), Walter Coudyzer (6), Jos Vander Sloten (2), Ilse Jonkers (1)

1. Department of Movement Science, KU Leuven, Leuven, Belgium
2. Department of Mechanical Engineering, KU Leuven, Leuven, Belgium
3. Department of Automation, Technical University of Cluj-Napoca, Cluj-Napoca, Romania
4. Department of Orthopaedic Surgery and Traumatology, Holy Heart Hospital Lier, Lier, Belgium
5. Department of Development and Regeneration, UZ Leuven, Leuven, Belgium
6. Radiology, UZ Leuven, Leuven, Belgium

Keywords: 4D CT imaging, musculoskeletal modelling, articular joint loading

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Accurate characterisation of individual hindfoot motion patterns and articular joint loading can help to gain a detailed understanding of joint functionality but also advance our knowledge on injury mechanisms. The aim of this work was to combine accurate in vivo hindfoot imaging and novel in silico musculoskeletal modelling to quantify individual 3D kinematics and articular joint loading of the ankle and subtalar joint in healthy participants and patients with a calcaneal fracture. Dynamic 4D CT images of 12 healthy participants (29±10 years) and 4 patients with a surgically treated calcaneal fracture (44±19 years) were acquired during a simulated stance phase of walking. Geometries of the tibia, talus, and calcaneus were segmented and tracked throughout the image series and individual ankle and subtalar kinematics were calculated. Articular joint loading (contact area and contact pressure) of the ankle and subtalar joint were estimated using a detailed foot-ankle musculoskeletal model combined with the 4D CT based ankle and subtalar rotations (through the OpenSim joint articular mechanics tool). The patients with a treated calcaneal fracture displayed a reduced range of ankle plantar/dorsiflexion (10.8±2.2° vs 15.9±3.9°) and a highly constrained subtalar joint. Further, they showed a decreased peak contact pressure of the ankle (4.44±0.33MPa vs 4.90±0.36MPa) and the subtalar (3.93±0.15MPa vs 4.50±0.53MPa) joint. Overall, the developed workflow showed the potential to identify small but meaningful differences between healthy participants and patients. As such, it can support a more comprehensive understanding of functional differences in ankle and subtalar motion and loading following calcaneal fracture fixation.

#42880 : The effect of corrective tarsal arthrodesis for pes varus deformity in individuals with unilateral upper motor neuron syndrome: a repeated measures study

Preferred format : a podium presentation

Authors:

Bente Bloks (1, 2), Noël Keijsers (1, 2), Jan Willem Louwerens (3), Alexander Geurts (2, 4), Jorik Nonnekes (2, 4)

1. Department of Research, Sint Maartenskliniek, Nijmegen, The Netherlands
2. Department of Rehabilitation, Radboud University Medical Center, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, The Netherlands
3. Department of Orthopedics, Sint Maartenskliniek, Nijmegen, The Netherlands
4. Department of Rehabilitation, Sint Maartenskliniek, Nijmegen, The Netherlands

Keywords: pes varus, ankle-foot deformity, tarsal arthrodesis, tarsal fusion, unilateral upper motor neuron syndrome

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Tarsal arthrodesis is a promising treatment option for pes varus deformity in individuals with unilateral upper motor neuron syndrome (UMNS). However, knowledge about its effectiveness is sparse. Therefore, the aim of this study was to investigate the effect of the surgical intervention on personalized goal attainment, gait, and balance capacity in individuals with UMNS. Methods: In this repeated measures study, 36 adults with UMNS who received a fusion of one or more tarsal joints were included. Before and one year after surgery, personalized goal attainment, balance, and gait capacity were assessed with the Canadian Occupational Performance Measure (COPM), Mini Balance Evaluation Test (Mini-BEST), and three-dimensional instrumented gait analysis, respectively. Results: Personalized goals improved significantly after surgery ($p<0.05$, performance before surgery: 3.5±1.4, after surgery: 6.9±1.7, satisfaction before surgery: 3.3±1.6, after surgery: 7.3±1.8, $n=32$). Mini-BEST scores also improved significantly following surgery ($p<0.05$, before surgery: 9.0±8.7, after surgery: 13.2±7.5, $n=19$). Of the 16 participants unable to walk barefoot before surgery, 12 regained this ability afterward. Additionally, among the four who used a walking aid, one could walk unaided after surgery. Furthermore, a significant increase in non-paretic peak ankle power was found among the 16 individuals who could walk barefoot without walking aid before and after surgery ($p<0.05$, $n=16$). Discussion: This study revealed clinically relevant enhancements in personalized goal attainment, balance, and gait capacity following surgery. Hence, corrective tarsal arthrodesis for pes varus deformity is a valuable treatment option for achieving personalized goals and enhancing gait and balance capacity in people with UMNS.

#42881 : Evaluation of hindfoot varus using plantar pressure measurements in individuals with unilateral upper motor neuron syndrome: a historical cohort study

Preferred format : a podium presentation

Authors:

Bente Bloks (1, 2), Lise Wilders (3), Jan Willem Louwerens (4), Alexander Geurts (2, 3), Jorik Nonnekes (2, 3), Noël Keijsers (1, 2)

1. Department of Research, Sint Maartenskliniek, Nijmegen, The Netherlands
2. Department of Rehabilitation, Radboud University Medical Center, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, The Netherlands
3. Department of Rehabilitation, Sint Maartenskliniek, Nijmegen, The Netherlands
4. Department of Orthopedics, Sint Maartenskliniek, Nijmegen, The Netherlands

Keywords: ankle-foot deformity, hindfoot varus, plantar pressure, unilateral upper motor neuron syndrome

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Hindfoot varus deformity is a major problem in people with unilateral upper motor neuron syndrome (UMNS). Accurate assessment of the deformity is essential for scientific evaluation of surgical interventions. However, a quantitative assessment method is still lacking. Therefore, the aim of this study was to quantitatively assess hindfoot varus in people with UMNS using plantar pressure measurements during gait. Methods: In this historical cohort study, plantar pressure data from 42 people with UMNS and 586 healthy controls were analyzed. UMNS feet were categorized based on clinical examination: 1) no hindfoot varus (NO_VAR), 2) dynamic hindfoot varus during the loading response of walking (DYN_VAR), or 3) persistent hindfoot varus throughout the entire stance phase of walking (PER_VAR). Center of pressure trajectories were computed and compared using statistical parametric mapping. Results: The center of pressure trajectory was significantly more lateral during the first 82% of the stance phase for the PER_VAR category, and during the first 26% for the DYN_VAR category, compared to healthy controls ($p<0.01$). All UMNS categories showed a center of pressure that was positioned significantly more anteriorly during the first 30% and more posteriorly between 53% and 77% of the stance phase compared to healthy controls ($p<0.01$). Discussion: Plantar pressure measurements show promise for assessing hindfoot varus in individuals with UMNS. Particularly, the medio-lateral center of pressure trajectory emerges as an important discriminator for evaluating dynamic and persistent hindfoot varus. Therefore, we propose using it as outcome measure in the scientific evaluation of surgical interventions targeting hindfoot varus.

#42882 : Evaluation of Tendon-to-Tendon Versus Tendon-to-Bone Transfers in Charcot-Marie-Tooth Foot Surgery

Preferred format : a podium presentation OR a poster presentation

Authors:

Ella Mccarthy (1), Mohammed Shaath (2), Gilles Van EetVelde (1), Muhammad Chatoo (1), Karan Malhotra (1), Matthew Welck (1)

1. , Royal National Orthopaedic Hospital, London, United Kingdom
2. , Royal National Orthopaedic Hospital, Stanmore, United Kingdom

Keywords: Charcot-Marie-tooth, Tendon transfers, Cavo-varus, Foot reconstruction

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Charcot-Marie-Tooth (CMT) commonly presents with cavovarus foot deformities. Surgical correction involves bony correction and tendon transfer, usually of the tibialis posterior. Transfer methods include tendon-to-tendon or tendon-to-bone fixation. Although differences between these techniques have been evaluated for footdrop, no previous studies specifically analyse surgery for CMT. Our aim was to compare subjective outcomes and complications between these techniques in CMT feet. Methods This was a single-centre retrospective series over 10-years. We included patients with CMT undergoing cavovarus foot correction with the following conditions: all had a calcaneal osteotomy, and tibialis posterior tendon transfer. We excluded patients under 18-years and those who had previous surgery. Subjective assessment was done using a questionnaire based on the Stanmore score and using the MOxFQ. Results 42 feet were included with mean 60-month (12-134-months) follow-up. 31 had tendon-to-bone transfers and 11 had tendon-to-tendon. MOxFQ significantly improved in both groups, but there was no difference in improvement ($p>0.05$). Patients in their 30s had greater improvement in MOx-FQ-Walking than older patients regardless of procedure ($p=0.002$). The only subjective differences noted between groups were: tendon-to-tendon transfer had better balance ($p=0.037$), whilst tendon-to-bone required less orthotics ($p=0.027$). There was no overall significant difference in subjective improvements in power or range-of-movement between groups, or in complications or recurrence rates ($p>0.05$). Conclusions We did not demonstrate clinically meaningful differences in outcome between transferring the tibialis posterior to tendon or bone in CMT cavovarus foot correction. Choice of fixation can therefore be at the surgeon’s discretion, guided by patient-specific factors.

#42883 : Medializing calcaneal osteotomy: a prospective comparative study of a human allogenic cortical bone screw (Shark-Screw®) with a metal/biotenodesis screw in the surgical treatment of flexible adult acquired flatfoot deformity

Preferred format : a podium presentation OR a poster presentation

Authors:

Florian Wenzel-Schwarz (1), Elena Nemecek (2), Sabrina Krejci (2), Sabine Krenn (2), Clemens Mansfield (2), Gudrun H. Borchert (3), Catharina Chiari (2)

1. Department of pediatric orthopedics and adult foot and ankle surgery, Orthopedic Hospital Speising Vienna, Vienna, Austria
2. Department for pediatric orthopedics and adult foot and ankle surgery, Orthopedic Hospital Speising Vienna, Vienna, Austria
3. , Dr. Borchert Medical Information Management, Langen, Germany

Keywords: adult acquired flatfoot, pes planovalgus, medializing calcaneal osteotomy, prospective comparative study, human allogeneic cortical bone screw, Shark-Screw®, metal/biotenodesis screw

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Flatfoot deformity often occurs in adults as a result of dysfunction of the tibialis posterior tendon, with a prevalence of 3 to 10%. A pesplanovalgus, StageII, can be treated with joint-preserving surgery, such as medializing calcaneal osteotomy (MCO) combined with flexor digitorum longus tendon (FDLT) transfer. The idea of stabilizing osteotomies or fractures using compact bone instead of metal is not new. Use of a bone screw creates immediate solid bony union that is remodelled into patient's own trabecular bone during consolidation process. This study aims to evaluate clinical and radiological results after MCO with the Shark Screw® in comparison to conventional metal/biotenodesis(PLLA) screws. Method Forty patients treated with MCO and, if necessary, FDLT transfer were included in this prospective clinical study (NCT05643079). They are divided into 4 cohorts, one group being treated with the Shark-Screw® (with and without FDLT-Transfer) , the other with metal/biotenodesis screw (control group). Radiologic- and Patient Related Outcome Measures PROMs (AOFAS, FAOS, FFI and NAS) were recorded up to 24 months. Results 40 patients have been included so far. The first results show a bony union after an average of 4 months and significant improvement in the PROMs. 2 Patient needed hardware removal and 3(17%) biotenodesis screw failures were observed in 18 operated patient. Conclusions Cortical bone screw implants lead to similar results compared to metal/biotenodesis screws. Advantage of the Shark Screw® is the good biocompatibility, the absence of donor site morbidity and the avoidance of a possible 2nd surgery for metal removal.

#42884 : Ankle arthrodesis case report – back to basics

Preferred format : an ePoster Displayed

Authors:

Rute Santos Pereira (1), João Raposo (2), João Cruz (1), Joana Rodrigues (1), Claudio Garcia (1), Tiago Canas (1), Ricardo Simões (1)

1. Orthopedics, Hospital do Divino Espírito Santo, Ponta Delgada, Ponta Delgada, Portugal
2. Orthopedics, CUF Açores, Ponta Delgada, Portugal

Keywords: Ankle arthrodesis, ankle arthroplasty, foot and ankle

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Ankle arthrodesis is considered in cases of advanced arthrosis, arthroplasty failure or other. Objectives: Illustrate a clinical case that was used twice on the same patient in different phases. Materials/methods: The bibliography related to ankle arthrodesis was reviewed and the clinical file of the illustrated case was consulted. Results: A 56-year-old man presents with a 2-year history of intense pain in the right ankle. Past history refers to a work accident(2003) resulting in a fracture of the tibial pilon-osteosynthesis was performed. Due to progression to osteoarthritis and disabling pain, he underwent ankle arthrodesis. Later, in 2007, he underwent disarthrodesis and total ankle arthroplasty. At the appointment(2022), evidence of astragaline loosening, bone cysts, lateral malleolus stress fracture and subastragaline arthrosis. He underwent prosthesis extraction and calcaneo-tibial arthrodesis with a nail (anterior approach) and space filling with a tricortical iliac graft and a cadaveric allograft (lateral approach). The surgery was uneventful. No isolation in microbiology. The patient evolved favorably, with superficial infection (empiric antibiotic-therapy), use of a walker-boot and consolidation with progression to full weight bearing at 12 weeks. He only complaints of dysmetria(2cm), managed with height compensation. AOFAS Ankle-Foot Scale:74. Conclusions: Constraints for ankle arthrodesis and arthroplasty present some overlap. Calcaneo-tibial arthrodesis presents itself as a surgical alternative in cases of ankle arthroplasty failure, namely as an alternative to revision arthroplasty. The results are predictably a stable, painless limb with functional gait. In the presented case (18months follow-up) the patient is well adapted, without limitations in ADLs, with autonomous gait.

#42885 : Optimum timing for temperature measurement to monitor Diabetic Charcot Neuroarthropathy

Preferred format : a podium presentation

Authors:

Suranga Gurusinghe (1), Konara Weerasinghe (2), Marco Pes (3), Vasukutty Nijil (4)

1. , Royal London Hospital, Grantham, United Kingdom
2. , University Hospital Birmingham, GRANTHAM, United Kingdom
3. , Royal London Hospital, London, United Kingdom
4. , Pilgrim Hospital, Boston, United Kingdom

Keywords: Charcot neuropathy, Temperature measurement,

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Currently, the most centres used single time-point temperature measurement to gauge disease activity, this could give false impression about stage of the disease. It is key that temperature measurements are done after the limb is allowed to cool down after removal of cast or brace to avoid false high readings. Aim: study is to evaluate optimum time for temperature measurement from cast removal to guide disease activity. Methodology: Study protocol; serial temperature measurements 00, 10 and 20 minutes from splint removal. Used 5 pre-determined anatomical locations for measurements. Ambient temperature was maintained a standard value, temperature was measured by non-touched technique. Radiographic staging was done by two different clinicians separately. Results: 48 patient episodes with mean age of 62.4 years. Disease site based on Brodsky classification; Type 1 92%, Type 2 5% and Type 3 3%. Disease activity from Eichenholtz stage; stage 0 -28%, stage 1 – 10%, stage 2 – 36% and stage 3 – 26%. There was statistically significant temperature difference in 1.6 degree Celsius in 10 minutes and 1.2 degree Celsius in 20 minutes compared to normal side from cast removal. The temperature difference between healthy and disease side at 0, 10 and 20 minutes after removal of brace was 2.0, 1.6 and 1.2 Celsius respectively. Conclusions: Our study shows that temperature measurement soon after removal of brace would show a falsely elevated reading and possibly overtreatment of these patients. Waiting for 20 minutes after brace removal for the limb to cool down would be beneficial.

#42887 : The naviculo-cuneiform reorientation arthrodesis. Indication and surgical technique

Preferred format : a podium presentation

Authors:

Tonio Gottlieb (1), Kaj Klaue (2)

1. foot and ankle surgery, Der-Fusschirurg.de, Berlin, Germany
2. foot and ankle surgery, Clinica Luganese, Lugano, Switzerland

Keywords: flat-foot therapy, naviculo-cuneiform arthrodesis, NC-fusion, correction of the flexible pes planovalgus

Your abstract (DO NOT add the title, list of authors or keywords in this field)

In the so-called pes planus-valgus, the talo-metatarsal axis is broken either in the sagittal, the horizontal or both planes. Prerequisite for surgical correction of this deformity includes recognizing the localization of the deformity. Alignment of the talo-navicular joint, the naviculo-cuneiform joint, the first tarso-metatarsal joint, in two or all three joints must be recognized in bipodal weight bearing x-rays. Malalignment of the naviculo-cuneiform joint may be best corrected by areorientation arthrodesis together with motor strengthening of the posterior tibialis tendon through an FDL transfer on to the first cuneiform bone. The correction is preferably performed through a ‘medial utility approach’ at the upper edge of the abductor hallucis. Cartilage and subchondral bone resection of two medial or all cuneiforms allow for achieving a straight talo-metatarsal axis upon reduction in both sagittal and horizontal planes. Mechanical fixation is best achieved by means of a plantar tension bandplate and screws. 2 naviculo-cuneiform and cuneo-navicular crossing screws may suffice in small patients. Gastrocnemius release is often indicated to correct the equinus of the hindfoot. The technique allows for a comprehensive correction of the deformity without limiting function by addressing a non-essential joint of the foot.

#42889 : Calcaneal osteotomy due to insertional calcaneal (Achilles) tendinopathy – preoperative planning

Preferred format : an ePoster Displayed

Authors:

Matej Mazura (1), Jiri Bek (2), Goldmann Tomas (3), Rastislav Hromadka (1)

1. First Department of Orthopaedics, Charles University and Motol University Hospital in Prague, Prague, Czech Republic
2. First Department of Orthopaedics, First Faculty of Medicine, Charles University and Motol University Hospital in Prague, Prague, Czech Republic
3. Department of Mechanics, Biomechanics and Mechatronics, Czech Technical University in Prague, Prague, Czech Republic

Keywords: Calcaneal osteotomy; Chauveaus-Liet angle; Insertional Achilles tendinopathy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Dorsal closing wedge calcaneal osteotomy (DCWCO) is indicated in patients with insertional tendinopathy of the calcaneal (Achilles) tendon. The Chauveaus-Liet's (CL) angle is represented by the difference between the angle of verticalization (α) and morphological angle (β) of the calcaneus (CL angle = α − β). The purpose of the study was to assess whether the DCWCO affects the Chauveaus-Liet's angle. Methods: The study included 12 patients indicated to DCWCO. Three directions of close wedge osteotomy were designed for each patient—horizontal, vertical and in the middle type of osteotomy and a virtual osteotomy was created in each of them in the ABAQUS system in cooperation with Czech Technical University. The most used directions of osteotomy according to the available literature were used. We evaluated α and β angles before and after osteotomy, changes of the length plantar aponeurosis and the elevation of distal insertional point of the calcaneal tendon. The changes of grades, median and standard deviation were observed. Results: The change of the alfa angle was dependent on the direction of the osteotomy and the change of the beta angle was affected by the size of the osteotomy. The greatest elevation of the distal insertional point of the calcaneal tendon occurred in the horizontal type of the osteotomy. Conclusion: Our study shows that the more we want to reduce the tension in the calcaneal tendon, the more we have to perform an osteotomy horizontally. This study could serve as a preoperative guide for osteotomy planning.

#42890 : Return To Activity After Sesamoidectomy. Long Term Results.

Preferred format : an ePoster Displayed

Authors:

MARIA CRISTINA GARCIA-MARTINEZ (1), Javier Gonzalez-Ustes (2), Sara Castellanos-Alonso (3), Cristina Ballestero-Tellez (3), Josep Novell-Alsina (3)

1. ORTHOPEDIC SURGERY, HOSPITAL MUNICIPAL BADALONA, BADALONA, Spain
2. ORTHOPEDIC SURGERY, Fundació Hospital Esperit Sant, Santa Coloma Gramanet, Spain
3. ORTHOPEDIC SURGERY, HOSPITAL MUNICIPAL BADALONA, Badalona, Spain

Keywords: Sesamoid, Sesamoidectomy, Return to Activity

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background To review the return to work and sports activity of patients who have undergone open sesamoidectomy. Objectives The aim of this review was to follow the evolution after open sesamoidectomy, assessing the return to work and sports activity. We have conducted long-term follow-up for possible long-term complications. Study Design & Methods 20 sesamoidectomies have been performed in 18 patients from January 2012 to January 2020. All have a follow-up of more than 3 years with a mean of 74 months. 10 were women and 8 were men with an age range of 18 to 65 years and a mean age of 38 years. The return to work has been an average of 2 months and to sports activity of 3 months on average. Regarding the sesamoids, 14 were tibial and 6 fibular. The cause of sesamoid pain has been fractures that have not healed orthopedically, painful pseudoarthrosis of the sesamoid, and sesamoiditis with positive scintigraphy Results We have made the AOFAS scale going from 58 to 85 points. All 18 patients would undergo re-surgery. As complications we have had a section of the FHL, a hallux valgus and a hallux varus in the postoperative period without consequences. No patient has had to be reoperated for a complication. Conclusions After reviewing current bibliography and despite the black legend of this surgical technique, we believe that it is a good technique when it is well indicated. Our results are similar to those of other authors with recent publications.

#42891 : Comparative Analysis of Lower Extremity Injuries in Gunshot vs. Explosive Trauma during the Israel-Gaza War

Preferred format : a podium presentation

Authors:

Dan Prat (1), Maya Braun (2), Shachar Shapira (2)

1. Orthopaedic Surgery, Sheba Medical Center, Ramat-Gan, Israel
2. Orthopaedic Surgery, Sheba Medical Center, Ramat Gan, Israel

Keywords: Israel Gaza Gunshot Explosive Lower Extrimity

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: The Israel-Gaza war, Swords of Iron War resulted in a significant number of lower extremity injuries, predominantly caused by gunshot wounds (GSWs) and explosive trauma. These injuries pose distinct challenges due to differing injury mechanisms. Objective: This study aimed to compare the epidemiological characteristics, injury patterns, and outcomes of lower extremity injuries from GSWs and explosive trauma during the Swords of Iron War. Methods: A retrospective analysis was conducted on 674 cases of lower extremity injuries reported between October 7th and December 31st, 2023. Data on demographics, surgical interventions, hospitalization, additional injuries, injury severity score, neurovascular injuries, amputations, and associated fractures were analyzed. Results: Gunshot wounds were more prevalent among civilians, while explosive injuries were more common among military personnel. Gunshot injuries necessitated more surgical interventions. Explosive injuries exhibited a higher propensity for additional injuries and amputations. Gunshot injuries had significantly higher rates of open fractures. Conclusion: Understanding the differences in injury patterns and outcomes between GSWs and explosive trauma is crucial for optimizing patient care and resource allocation during conflicts.

#42892 : Arthrodesis Of The Hallux As Salvage Surgery For Osteonecrosis Of The Proximal Phalanx After Percutaneous Surgery. A clinical case from our unit.

Preferred format : an ePoster Displayed

Authors:

MARIA CRISTINA GARCIA-MARTINEZ (1), Javier Gonzalez-Ustes (2), Sara Castellanos-Alonso (3), Cristina Ballestero-Tellez (3), Josep Novell-Alsina (3)

1. ORTHOPEDIC SURGERY, HOSPITAL MUNICIPAL BADALONA, BADALONA, Spain
2. ORTHOPEDIC SURGERY, Fundació Hospital Esperit Sant, Santa Coloma Gramanet, Spain
3. ORTHOPEDIC SURGERY, HOSPITAL MUNICIPAL BADALONA, Badalona, Spain

Keywords: Hallux, Percutanous surgery, Osteonecrosis, Hallux arthrodesis

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction and objectives Percutaneous surgery has revolutionized forefoot surgery in the last 20 years to establish itself as a comparable alternative to classic open surgery. However, it is not absent from complications. Our objective is to present a clinical case that after undergoing percutaneous hallux surgery valgus in 2006, consulted 16 years later for a painful rigid hallux claw. Material and methods This patient was first operated in 2006 by a surgeon from the F&A Unit of our hospital for hallux valgus and metatarsalgia percutaneously. In 2022, the patient is referred with painful hallux rigid claw deformity that interferes with footwear. X-ray shows partial necrosis of the base of the proximal phalanx together with a rigid dorsal metatarsophalangeal dislocation. The preoperative AOFAS test was 36 points. The patient was proposed a new rescue surgery: open metatarsophalangeal arthrodesis with the distal phalanx due to an important bone defect in the proximal phalanx. Results In March 2023, a metatarsophalangeal arthrodesis of the hallux was performed using an anatomical plate. The patient began inmediate weight bearing using a stiff sole shoe during the first month. 3 months after surgery, VAS 8 decreased to VAS 2, and the radiograph showed bone consolidation. At 12 months, the AOFAS test became 82 points. The patient was discharged with a satisfactory clinical and radiological result. Conclusion After percutaneous complication of hallux proximal phalange necrosis, open surgery of hallux arthrodesis with distal phalanx can be a good rescue option, offering a good clinical result in a medium term.

#42893 : Clinical outcomes of posterior hindfoot endoscopic surgery using 1.9-mm diameter needle arthroscopy for posterior ankle impingement in Athletes

Preferred format : a podium presentation OR a poster presentation

Authors:

Yoshiharu Shimozono (1), Daisuke Mori (2), Yasuyuki Mizuno (2), Noboru Funakoshi (2), Masahiko Kobayashi (2), Shuichi Matsuda (3), Fumiharu Yamashita (2)

1. Orthopaedics Surgery, Kyoto University, Kyoto, Japan
2. , Kyoto Shimogamo Hospital, Kyoto, Japan
3. , Kyoto University, Kyoto, Japan

Keywords: posterior ankle impingement, needle arthroscopy, athletes, ballet

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Purpose: To investigate the clinical outcomes and return to sports following hindfoot endoscopic surgery utilizing 1.9-mm diameter needle arthroscopy for posterior ankle impingement syndrome (PAIS), especially in athletes, including ballet dancers. Methods: A retrospective cohort study was conducted to evaluate patients who underwent hindfoot endoscopic surgery using 1.9-mm diameter needle arthroscopy for PAIS between 2021 and 2023. Clinical outcomes were evaluated preoperatively and 12 months after surgery using the Japanese Society for Surgery of the Foot (JSSF) scale and the Self-Administered Foot Evaluation Questionnaire (SAFE-Q). The time to return to sports training, and complete return to sports activities were also evaluated. Results: Thirteen patients (5 male and 8 female) with a mean age of 21.1 years were included. The mean follow-up time was 17.1 months. Sports activities included ballet (7 patients), soccer (3 patients), lacrosse (2 patients), and tennis (1 patient). The mean JSSF scale significantly improved from 79.1 preoperatively to 98.3 at the final follow-up ($p<0.001$). The mean SAFE-Q scores improved significantly postoperatively in all subscales ($p<0.005$), except the shoe-related subscale ($p=0.121$). The mean time to return to sports-specific training was 3.8 weeks. The mean time to return to full sports activities at the pre-injury levels was 6.3 weeks. The ballet dancers returned to full activity at the pre-injury levels at a mean time of 7.3 weeks. Conclusion: Posterior hindfoot endoscopy employing 1.9-mm diameter needle arthroscopy demonstrated excellent clinical outcomes for PAIS, with patients experiencing a relatively earlier return to sports than conventional endoscopic surgery, including ballet dancers.

#42894 : Ankle fracture surgery performed by orthopaedic residents without supervision has comparable outcomes to surgery performed by fellowship trained orthopaedic surgeons

Preferred format : a podium presentation

Authors:

Dan Prat (1), Snir Balaziano (1), Itay Fogel (1), Or Maoz (1), Barzilai Yuval (1), Shenkar Yorye (2), Shay Tenenbaum (1)

1. Orthopaedic Surgery, Sheba Medical Center, Ramat-Gan, Israel
2. Orthopaedic Surgery, Sheba Medical Center, Ramat Gan, Israel

Keywords: Resident training surgical outcomes ankle fracture

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Unstable ankle fractures often necessitate open reduction and internal fixation (ORIF). The impact of surgical trainee autonomy on healthcare quality remains uncertain. We hypothesized that surgery performed solely by residents, without participation of an attending surgeon, can provide similar outcomes to surgery performed by trauma or foot-and-ankle fellowship-trained orthopaedic surgeons. Methods A single-center cohort of an academic level-1 trauma center was retrospectively reviewed for all ankle ORIF between 2015 and 2019. Data were compared between surgery performed solely by post-graduate-year 4 to 6 residents, and surgery performed by trauma or foot-and-ankle fellowship-trained surgeons. Demographics, surgical parameters, preoperative and postoperative radiographs, and primary (mortality, complications, and revision surgery) and secondary outcome variables were collected and analyzed. Univariate analysis was performed to evaluate outcomes. Results In total, 460 ankle fractures were included. Cases operated by senior orthopaedic surgeons who were not trauma or foot-and-ankle fellowship-trained orthopaedic surgeons were excluded. The average follow-up time was 58.4 months (SD±12.5). We found no significant difference between residents and attendings in complications and reoperations rates ($p = 0.690$, $p = 0.388$). Sub-analysis by fracture pattern and the number of malleoli involved and fixated demonstrated similar outcomes. Surgery time was significantly longer in the resident group ($p < 0.001$). Conclusion Ankle fracture surgery can be performed by adequately trained orthopaedic surgery residents, with similar results and complication rates as surgery performed by fellowship-trained attendings. These findings provide valuable insights into surgical autonomy in residency and its role in modern clinical training and surgical education.

#42895 : Osteomyelitis of the Hallux Caused by Actinotignum Schaalii, a Rare Emerging Urinary Pathogen.

Preferred format : an ePoster Displayed

Authors:

MARIA CRISTINA GARCIA-MARTINEZ (1), Cristina Ballestero-Tellez (2), Sara Castellanos-Alonso (2), Javier Gonzalez-Ustes (3), Josep Novell-Alsina (2)

1. ORTHOPEDIC SURGERY, HOSPITAL MUNICIPAL BADALONA, BADALONA, Spain
2. ORTHOPEDIC SURGERY, HOSPITAL MUNICIPAL BADALONA, Badalona, Spain
3. ORTHOPEDIC SURGERY, Fundació Hospital Esperit Sant, Santa Coloma Gramanet, Spain

Keywords: Osteomyelitis, Hallux

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction and Objectives: Actinotignum schalii is a gram-positive coccobacillus belonging to the Actinomycetaceae family related to urinary tract infections, with potential to cause septicemia. Cases of osteomyelitis are very rare in the literature, so we want to present a clinical case from our center. Material and methods: This is a 30-year-old female patient with no relevant history, whose only previous surgery was an interphalangeal arthrodesis of the hallux in 2008 with an intramedullary screw. She began with a fistula and purulent exudation associated with nail dystrophy 12 years later, without associated signs of sepsis. She initially improved after a short empirical course of Amoxicillin-clavulanic acid. Later, given the persistence of the symptoms, a first swab was performed, which was positive for Actinotignum schalii. X-rays demonstrated osteolysis of the distal phalanx, suggesting osteomyelitis in this context, so we decided to amputate the distal phalanx and remove osteosynthesis material. Intraoperative cultures, again, were positive for Actinotignum schalii. Results: Intraoperative cultures were all positive for Actinotignum schalii sensitive to Clindamycin and Levofloxacin, so dual therapy was started for 4 weeks and subsequently continued with Levofloxacin for 4 more weeks until completing a total of 8 weeks of antibiotic treatment. Clinical result was satisfactory, with wound healing and exudate completely remitting. Conclusion: Actinotignum schalii is a very rare cause of osteomyelitis, which requires high suspicion. In the last 5 years, increasing cases have been described, so it should be considered an emerging virulent pathogen. Its usual sensitivity to multiple antibiotics facilitates its treatment.

#42896 : Focused extracorporeal shock wave therapy for painful delayed union or nonunion of fractures of interphalangeal coalition

Preferred format : a podium presentation OR a poster presentation

Authors:

Yoshiharu Shimozono (1), Daisuke Mori (2), Yasuyuki Mizuno (2), Noboru Funakoshi (2), Masahiko Kobayashi (2), Shuichi Matsuda (3), Fumiharu Yamashita (2)

1. Orthopaedics Surgery, Kyoto University, Kyoto, Japan
2. , Kyoto Shimogamo Hospital, Kyoto, Japan
3. , Kyoto University, Kyoto, Japan

Keywords: extracorporeal shock wave therapy, delayed union, nonunion, interphalangeal coalition

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Interphalangeal coalition fractures often result in delayed union or nonunion. The purpose of this study was to evaluate the results of focused extracorporeal shock wave therapy (ESWT) in patients with painful delayed or nonunion of fractures of the interphalangeal coalition. Methods: Nine patients (9 feet) diagnosed with painful delayed union or nonunion due to persistent pain and no tendency toward bony fusion for at least 3 months after fracture of the interphalangeal coalition between 2021 and 2023 were included (fourth toe, 3; fifth toe, 6). Focused ESWT was performed in all patients. There were two males and seven females with a mean age of 51.3 years (23-64). The mean time from the date of injury to the start of ESWT was 16.1 weeks (12-15 weeks). ESWT was performed every two weeks, with each session consisting of 3,000 impulses (0.25 mJ/mm2). Plain radiographs were used to confirm bone union, and VAS scores were evaluated. Results: Complete bony union was documented in all nine patients. The application of focused ESWT was performed a mean of 2.7 times (2-4 times), and the mean duration from the initiation of treatment to the confirmation of bony union was 7.4 weeks (3.6-12.7 weeks). The mean VAS scores significantly decreased from 3.8 (2-6) before ESWT to 0 after the achievement of union ($p<0.001$). Conclusion: Focused ESWT is a valuable treatment option for painful delayed-union or nonunion of interphalangeal coalition fractures, as all patients achieved bony fusion within 2 months of ESWT initiation.

#42897 : Subtalar arthroscopic surgery using 1.9-mm diameter needle arthroscopy for osteochondral lesions of the subtalar joint without any invasive distraction: a report of three cases

Preferred format : a podium presentation OR a poster presentation

Authors:

Yoshiharu Shimozono (1), Daisuke Mori (2), Yasuyuki Mizuno (2), Noboru Funakoshi (2), Masahiko Kobayashi (2), Shuichi Matsuda (3), Fumiharu Yamashita (2)

1. Orthopaedics Surgery, Kyoto University, Kyoto, Japan
2. , Kyoto Shimogamo Hospital, Kyoto, Japan
3. , Kyoto University, Kyoto, Japan

Keywords: subtalar arthroscopy, osteochondral lesion

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Subtalar arthroscopy is used for the treatment of subtalar osteochondral lesion (OCL). However, an invasive bone distraction technique is typically necessary to visualize joints and treat lesions. In this report, we present three cases of arthroscopic bone marrow stimulation with platelet-rich plasma (PRP) without invasive distraction using 1.9-mm diameter needle arthroscopy for subtalar joint OCLs. Methods: Three patients who underwent arthroscopic bone marrow stimulation for subtalar joint OCL were included. The mean age was 27 years (29-37), and the mean follow-up time was 22.0 months (15-27). The OCLs were located in the posterior facet of the calcaneus in all patients. A 1.9-mm diameter arthroscopic system was utilized through the anterolateral portal. Bone marrow stimulation was performed through the middle portal. All patients received PRP injections after surgery. The JSSF Scale and VAS scores were evaluated. Results: None of the patients required any invasive distraction technique to enter the subtalar joint and visualize the lesions. Manual distraction alone was sufficient for all patients. The mean JSSF score improved significantly from 70.3 (65-74) to 96.7 (90-100). The mean VAS score was 5.7 (4-7) preoperatively and 0.3 (0-1) at the final follow-up. All patients were able to return to sports activities. No complications were observed. Conclusions: Subtalar arthroscopic surgery using 1.9-mm diameter needle arthroscopy is a safe and effective surgical treatment for subtalar OCLs without any invasive distraction and disruption to the surrounding tissues.

#42898 : Arthroscopic assisted reduction of syndesmosis injuries: clinical outcome and CT evaluation

Preferred format : a podium presentation

Authors:

Federico Maria Liuni (1), Luca Berni (2), Riccardo Cepparulo (2), Girgenti Giacomo Fabio (3), Federico Maria Liuni (4)

1. , , Borgo Val di Taro, Italy
2. Orthopedics, S.Maria Hospital, Borgo Val di Taro, Italy
3. Orthopedics, S.Maria Hospital, Borgo Val di. Taro, Italy
4. , S. Maria Hospital, Borgo Val di Taro, Italy

Keywords: Syndesmosis, arthroscopy, malleolar fracture, CT

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The aim of the study is to determine the validity of arthroscopic assistance in stabilizing the syndesmosis in patients with malleolar fractures. We also aim to determine the incidence of malreduction of the syndesmosis and examine the correlation between malreduction and functional outcome. Retrospective cohort study on patients with malleolar fracture and syndesmotic disruption. 36 patients in 2 groups. Group A: 18 patients treated with reduction and stabilization of the syndesmosis associated with arthroscopic evaluation; group B: 18 patients with reduction and stabilization of the syndesmosis without arthroscopy evaluation. The two groups were evaluated by CT scan of the bilateral ankle, AOFAS and VAS scores at a minimum follow-up of 12 months. The mean age was 45,66 years (range 18-74 years). The reduction of the syndesmosis was classified as anatomical in 15 patients of group A (83,3%) and 12 patients of group B (66,7%). In 3 patients of group A (16,7%) and in 6 patients of group B (33,3%) the reduction was non-anatomical. There were no significant differences in anatomical reduction between the two groups, but significantly favorable scores for both AOFAS score and VAS scale for the patients with anatomical reduction. The arthroscopy group showed a reduced incidence of malreduction, although not significant. The results showed an association with the CT reduction quality and both the AOFAS score and VAS scale. This emphasizes the importance of an anatomical reduction of the syndesmosis which can be assisted by arthroscopy.

#42899 : Method to perform the proximal and distal cuts of scarf osteotomy with the correct obliquity

Preferred format : an ePoster Displayed

Authors:

Fernández Rafael (1)

1. Orthopedic surgery, Hospital Arnau de Vilanova de Valencia, Valencia, Spain

Keywords: scarf osteotomy, surgery planning, hallux valgus, surgery guides.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

We present surgical guidelines to perform the proximal and distal scarf osteotomy cuts for hallux valgus deformity, with the correct obliquity calculated on loaded radiographs. Barouk describes the proximal and distal scarf osteotomy cuts considering exclusively the sagittal plane, choosing an obliquity of 60°. This results in a random horizontal plane cut, with the danger of obtaining an undesired effect. If we want to obtain a pure lateral transfer, without lengthening or shortening, the proximal and distal cuts in the transverse plane must be strictly perpendicular to the axis of the second metatarsal. The proposed method makes it possible to perform these cuts calculated in the surgical planning with the correct obliquity, avoiding undesired shortening or lengthening of the metatarsal. It consists of 6 guides with trapezium morphology, with a long side that should be flush with the medial diaphyseal cortex of the metatarsal and a short side. Between the long side and the two short sides, a different “K angle” is formed for each guide, between 70° and 80°. The angle K arises from the line perpendicular to the axis of the second metatarsal with the axis of the first metatarsal and can be calculated by subtracting the AIM from 90.

#42900 : Radiological landmarks for joint line level in challenging total ankle arthroplasty

Preferred format : a podium presentation OR a poster presentation

Authors:

Antono Mazzotti (1), Simone Ottavio Zielli (1), Elena Artioli (1), Sgubbi Federico (1), Laura Langone (1), Alberto Arceri (1), Cesare Faldini (1)

1. Clinica I Ortopedica e Traumatologica, Istituto Ortopedico Rizzoli, Bologna, Italy

Keywords: Total Ankle Replacement; Ankle Arthroplasty Revision; Custom-made implants; Patient Specific Instrumentation;

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Although Total Ankle Arthroplasty (TAA) is primarily performed for post-traumatic ankle arthritis with joint disruption, anatomical landmarks for Joint Line (JL) level are typically preserved. However, severe bone loss or TAA revision may render some landmarks unidentifiable, challenging the JL restoration. Methods: Patients undergoing customized TAA for severe bone loss or revision were enrolled. Custom-made implants, based on 3D CT-scans, were designed to address bone defects and provide adequate bone support. Evaluated parameters, measured on bilateral ankle weight-bearing radiographs taken preoperatively and 6-8 months postoperatively, included JL Height Ratio (JLHR) and the distances from JL to the Lateral Malleolus apex (LM-JL), the posterior colliculus of the Medial Malleolus (MM-JL), and the Gissane Calcaneal Sulcus (CS-JL). Reproducibility and variability were assessed, comparisons were made between radiological parameters measured at TAA and those at the contralateral ankle. Results: Thirteen patients were included. Intra- and inter-observer reliability demonstrated excellent values. Least variability was observed in LM-JL distance. Statistically significant correlations were found between CS-JL and MM-JL distances in the operated limb, and between CS-JL of the operated limb and the contralateral ankle. While TAA parameters did not show statistically significant differences compared to the contralateral ankle, a trend towards proximalization of the JL was noted. Conclusion: This study demonstrated good reproducibility of the analysed parameters for evaluating JL in TAA among patients with severe bone loss or undergoing revision surgery. However, these parameters cannot be deemed fully reliable. Given their potential weaknesses, it is crucial to identify more reproducible values, preferably ratios.

#42901 : Close wedge osteotomy of heel bone in patients with insertional Achilles tendinopathy; virtual preoperative planning

Preferred format : a podium presentation

Authors:

Rastislav Hromadka (1), Matej Mazura (2), Tomas Goldman (3)

1. , First Department of Orthopaedics, First Faculty of Medicine, Charles University and Motol University Hospital, Prague, Czech Republic
2. , First Department of Orthopaedics, First Faculty of Medicine, Charles University and Motol University Hospital, Prague, Czech Republic
3. , Department of Mechanics, Bioemchanics and Mechatronics, Faculty of Mechanical Engineering, Czech Technical University in Prague, Prague, Czech Republic

Keywords: osteotomy of calcaneus, preoperative planning, insertional Achilles tendinopathy, Close wedge osteotomy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Dorsal closing wedge calcaneal osteotomy (DCWCO) can be indicated in patients with insertional tendinopathy of the Achilles tendon. The osteotomy changes the morphology of the heel bone, as well as the tension and direction of the Achilles tendon in its insertion. It is indicated especially in patients with a morphological disposition. Our study was based on preoperative planning of the osteotomy in 12 patients with insertional tendinopathy. Patient had been treated with conservative therapy as stretching, shock wave therapy or plasmatherapy at last 6 months. Due to unsuccessful conservative treatment conservative were indicated for the osteotomy. Preoperative planning includes measurements of angles on lateral weight-bearing X-rays of the foot: pitch angle (alpha), the angle between the vertical line and facet for insertion of Achilles tendon (beta) and Chauveaus-Liet's angle (CL=alpha−beta). Virtual vertical osteotomies were designed in the ABAQUS system in cooperation with Czech Technical University. The system proposes an osteotomy and virtual changes of the shape of the calcaneus according to the shape of the bone to change alpha and beta angles. To simplify the issue, we propose to use 10 and 15 degrees of the wedge in osteotomy in three directions (straight vertical, two oblique). The algorithm measures changes in the shape of 12 heel bones (patients) after the virtual osteotomy. The results show the importance of planning the DCWCO on individual morphological differences in the shape of heel bones to obtain a suitable result. The osteotomy was then performed using the open lateral and lateral MIS approach.

#42902 : Fixed-Bearing Versus Mobile-Bearing in Total Ankle Arthroplasty: A Systematic Review and Meta-Analysis

Preferred format : a podium presentation OR a poster presentation

Authors:

CHIARA COMISI (1), TOMMASO GRECO (1), Virginia Cinelli (1), ANTONIO MASCIO (1), CHIARA POLICHETTI (1), GIULIO MACCAURO (1), CARLO PERISANO (1)

1. , Fondazione Policlinico Universitario Agostino Gemelli IRCCS, ROMA, Italy

Keywords: Ankle arthritis; Ankle Joint Prosthesis; Total Ankle Arthroplasty (TAA); Mobile-bearing prosthesis; Fixed-bearing prosthesis; Implant failure; Implant revision.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Total Ankle Arthroplasty (TAA) is an effective solution in the end-stage ankle arthritis. New generation’s implants have demonstrated encouraging intermediate clinical results: modern systems have either a fixed-bearing (FB) or a mobile-bearing (MB) design. Literature shows no clear evidence about the differences between the two types of prostheses. Objectives The aim of the study is to compare FB and MB prosthesis systems, specifically evaluating for each group (i) the revision rate in terms of conversion to arthrodesis, replacement TAA and below-knee amputation; (ii) minor events that still required surgery; (iii) and to provide an overview of total ankle replacement, including its advantages and disadvantages. Study Design & Methods A systematic review of the literature was performed. The Preferred Reporting Items for Systematically Reviews and Meta- Analyses (PRISMA) was followed. Retrospective and prospective studies were evaluated and added to the final reference list. Indeed, all case reports, case series and systematic reviews were excluded. Results Forty-six articles were included in the review. Relevant data were systematically collected. A meta-analysis was conducted among similar data, showing the failure risk and revision rate among the two different groups. No significant statistical differences were found in terms of complications rate. Conclusions TAA is a challenging procedure both technically and for the high revision rate. Both types of ankle prostheses, with mobile-bearing or fixed-bearing, appear to be valid options for the treatment of ankle arthritis, with an intermediate risk of short, medium, and long-term complications.

#42903 : “Intact” lateral ankle ligaments finding on MRI does not imply “competent” ligaments -The role of EUA in chronic symptomatic Ankle Instability.

Preferred format : a podium presentation

Authors:

Aysha Rajeev (1), George Koshy (2), Kailash Devalia (1)

1. Trauma and Orthopaedics, GATESHEAD HEALTH FOUNDATION NHS TRUST, GATESHEAD, United Kingdom
2. , Gateshead Health Foundation NHS Trust, GATESHEAD, United Kingdom

Keywords: EUA,MRI,Intact Lateral ligament,chronic ankle instability

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Chronic lateral ankle instability often follows traumatic rupture or pathological laxity of the lateral ankle ligament complex. While MRI is useful in identifying complete ligament tears, it may not reliably detect incompetence in pathologically elongated ligaments. This study aims to determine if EUA is a superior diagnostic tool compared to MRI scans in accurately diagnosing chronic lateral instability. Methods We conducted a prospective case analysis of 50 symptomatic patients who underwent lateral ligament reconstruction for chronic ankle instability. Each patient underwent both EUA and MRI scans prior to surgery. EUA was performed in the operating theatre under general anaesthesia, using image intensifier guidance to conduct anterior drawer stress and talar tilt tests. MRI scans were independently evaluated by two experienced musculoskeletal radiologists. Results EUA indicated complete insufficiency of the ankle in all 50 patients, as evidenced by positive anterior drawer and talar tilt tests. MRI scans reported complete ligament rupture in 17 patients (34%), thickened ATFL (Anterior Talo-Fibular Ligament) and CFL (Calcaneo-Fibular Ligament) ligaments in 18 patients (36%), and an intact lateral ligament complex in 15 patients (30%). Conclusion EUA, in conjunction with symptomatic instability, appears more reliable in assessing lateral ligament instability compared to MRI scans. While MRI is valuable for identifying additional pathologies such as osteochondral lesions, peroneal tendon subluxation or tear, and syndesmotic injuries, it is less effective for evaluating hyperlaxity and elongated lateral ligaments. Therefore, EUA should be considered a critical diagnostic tool in managing patients with chronic lateral ankle instability.

#42904 : Foot and ankle trauma: epidemiology before, during and post COVID - 19 pandemic in a Level I Trauma center. A 5-year experience and data analysis

Preferred format : a podium presentation OR a poster presentation

Authors:

ANTONIO MASCIO (1), CHIARA COMISI (1), TOMMASO GRECO (1), CHIARA POLICHETTI (1), Virginia Cinelli (1), GIULIO MACCAURO (1), CARLO PERISANO (1)

1. , Fondazione Policlinico Universitario Agostino Gemelli IRCCS, ROMA, Italy

Keywords: COVID-19, emergency department, ankle sprain, foot and ankle trauma.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Foot and ankle injuries are one of the most orthopedic leading causes of emergency department (ED) admissions. The purpose of this study is to analyze, through 5 years of data collection, differences in number and type of admission of foot and ankle trauma to the ED in the pre-pandemic period, during the COVID-19 emergency, and in the post-pandemic period. Methods 5 years data were collected on admissions to the ED of the University Policlinic A. Gemelli, using the regional GIPSE system. Data was extensively collected and analyzed to obtain epidemiological and clinical evaluation. Result In the pre-pandemic period, 2228 ED accesses were recorded, including 1138 males with a mean age of 37 years and a mean of 2.8 accesses per day, with an average surgical treatment of 4.5%. During the COVID period the total number of accesses was 981, with an average surgical treatment of 10.4%. In the post-COVID period, 578 accesses were collected, with an average surgical treatment of 9,1%. Conclusions During the pandemic period due to Covid-19 was noted a substantial decrease in total admissions per day to the ED, but an increase in more complex codes, as evidenced by the percentage increase in surgical admissions compared to total admissions during the pandemic; the average age of users gradually increased. Total hospitalization data remained overlapping in the post-pandemic period, probably due to the global impact of the pandemic. Covid-19 radically and concretely changed people's living habits and priorities for accessing the ED.

#42905 : Tendon to tendon versus tendon to bone transfers in Charcot-Marie-Tooth pes cavovarus correction

Preferred format : a podium presentation

Authors:

Ella McCarthy (1), Gilles Van Eetvelde (2, 3), Shelain Patel (1), Nick Cullen (1), Matthew Welck (1), Karan Malhotra (1)

1. Orthopaedics, Royal National Orthopardic Hospital, London, United Kingdom
2. Orthopaedics, AZ Sint-Lucas Gent, Gent, Belgium
3. Orthopaedics , Royal National Orthopardic Hospital, London, United Kingdom

Keywords: Cavovarus, Tendon transfer, Charcot-Marie-Tooth

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Charcot-Marie Tooth (CMT) commonly presents with a cavovarus foot deformity. Commonly used treatment methods include tendon transfer. This can be done tendon-to-tendon or tendon-to-bone. Although differences have been evaluated for patients with foot drop, no previous studies have compared results for CMT. Our aim was to compare subjective outcomes and complications between these techniques. Methods This was a single-centre retrospective series over a 10-year period. We included patients with CMT undergoing a cavovarus foot correction with the following conditions: all patients had a calcaneal osteotomy, a 1st metatarsal dorsiflexion osteotomy and a tibialis posterior tendon transfer. We excluded patients under 18 years and those who had previous surgery. Subjective assessment was done using a questionnaire based on the Stanmore score and using the MOxFQ. Results 42 patients were included with mean follow-up of 60 months (12-134 months). 31 had tendon-to-bone transfers and 11 had tendon-to-tendon. The MOxFQ significantly improved in both groups, but there was no difference in improvement between the groups ($p>0.05$). The only subjective differences noted between groups were: balance was better in the tendon-to-tendon group ($p=0.037$), whilst tendon-to-bone had less requirement for orthotics ($p=0.027$). There was no overall significant difference in subjective improvements in power or range of movement between groups. No significant difference in complications. Conclusions We did not demonstrate any clinically meaningful differences in outcome between transferring the tibialis posterior to tendon or bone in CMT cavovarus foot correction. The choice of tendon transfer can therefore be at the discretion of the surgeon.

#42906 : Minimally invasive treatment of recurrent diabetic foot ulcers on the fifth metatarsal head

Preferred format : a podium presentation

Authors:

Baïdir Haloui (1), Wahid Rezaie (2), Frank Nobels (3)

1. Orthopaedics and traumatology, Onze Lieve Vrouw ziekenhuis, Ternat, Belgium
2. Orthopaedics and traumatology, Onze Lieve Vrouw ziekenhuis, Aalst, Belgium
3. Endocrinology, Onze Lieve Vrouw ziekenhuis, Aalst, Belgium

Keywords: Minimal invasive surgery, forefoot surgery, bunnionette, tailor's bunion, diabetic foot, ulcer

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Diabetic forefoot ulcers frequently result from elevated pressure on bony prominences, neuropathy, and poor limb circulation. Treating these ulcers, particularly when infected, is challenging and can often lead to toe or forefoot amputation. This study aims to assess the efficacy and safety of minimally invasive surgical offloading for recurrent diabetic ulcers of the fifth metatarsal through minimal invasive fifth metatarsal osteotomy and bunionettectomy. Methods A retrospective cohort study was conducted on patients surgically treated for diabetic foot ulcers on the lateral or plantar side of the fifth metatarsal head between January 2020 and May 2024. Outcomes included the time to healing of the primary ulcer and surgical wound, recurrence of ulcers, length of hospital stay, postoperative complications and reoperation rates. Clinical, and radiological parameters of the feet were evaluated, and patient-reported outcome measures were collected. Results Ten feet from nine patients were included who didn’t respond successfully to conservative offloading. The mean patient age was 70 years. Five feet were classified with Wagner grade 3 wounds, three feet with Wagner grade 2 wounds and one as grade 1. Ulcers completely healed in a mean period of nine weeks postoperatively. Two patients required 6 weeks of antibiotic treatment due to preexisting osteomyelitis. One postoperative infections occurred. There was no failure of correction, and all patients returned to wearing orthopedic shoes postoperatively. Conclusion Minimally invasive offloading of the fifth metatarsal is a safe and effective procedure for treating diabetic ulcers on the fifth metatarsal head that are refractory to conservative treatment.

#42907 : Treatment of a post-traumatic osteochondral lesion (OCL) of the first metatarsal head with minced cartilage implantation (AutoCartTM): Case report of a 14-year-old patient including MRI at one year follow up

Preferred format : a podium presentation OR a poster presentation

Authors:

Florian Wenzel-Schwarz (1), Catharina Chiari (1)

1. Department of pediatric orthopedics and adult foot and ankle surgery, Orthopedic Hospital Speising Vienna, Vienna, Austria

Keywords: minced cartilage implantation, MRI, cartilage repair, osteochondral lesion

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Autologous chondrocyte implantation has increasingly gained importance as a surgical technique for treating cartilage damage in knee and ankle surgery in recent years. The so-called "Minced Cartilage Implantation" (MCI) uses minced cartilage components as a biological material for reconstructing destroyed cartilage in a single-stage procedure. This technique has also been described for treating focal osteoarthritis at the first metatarsophalangeal joint (MTP1). The following case demonstrates treatment of a traumatic osteochondral lesion (OCL) at the first metatarsophalangeal head of a 14 year old patient. Methods: Preoperative imaging was performed as well as pre-and postoperative assessment of AOFAS 1st Forefoot Ray, Foot Function Index and pain at 3,6 and 12 months. Surgery was done with cartilage reconstruction using MCI (AutoCartTM, Arthrex Inc.) Postoperative follow-up included a 3T MRI at 6 and 12 months. Postoperative after 48 hours of immobilization of the big toe, bandages were changed, mobilization started in a short walker boot for 3 weeks. From first week, passively guided mobilization exercises of the MTP1 joint were allowed. In the 2nd to 3rd week, these were expanded to include active exercises. After 3weeks, pain-oriented mobilization was done in stable footwear. Results: All parameters assessed showed a significant improvement at 3-months follow-up. After 6 months, a preoperative bone marrow edema was already noticeably regressing. 12 months postoperatively, a nicel and stable cartilage regeneration was evident with complete regression of the bone marrow edema. Conclusion: Treating osteochondral lesions of the MTP1 joint with MCI (AutoCartTM) offers an effective and safe treatment option.

#42909 : A distally curved paracentral incision reduces shoe conflict after Achilles tendon insertion surgery

Preferred format : a podium presentation OR a poster presentation

Authors:

Togay Koc (1), Hesham Oshba (1)

1. , University Hospital Southampton, Southampton, United Kingdom

Keywords: Achilles, Tendinopathy, Tendon Rupture

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Surgery to the insertion of the Tendoachilles is commonly performed using a central longitudinal incision which is associated with a 20% incidence of shoe conflict. This study assessed a new approach: a medial paracentral incision, curved distally, which aims to reduce shoe conflict while enabling effective surgery and early mobilization. Methods Between June 2021 and October 2023, 8 consecutive procedures were performed at the insertion of the Tendoachilles utilising a medial paracentral distally curved incision approach. Indications for surgery included insertional Tendoachilles rupture (3) and insertional Achilles tendinopathy (5). Post-operatively, patients were immobilised in an equinus front slab non-weightbearing for 2-3 weeks before mobilising full weightbearing in an orthotic boot until 2-3 months post-operative. Incidence of shoe conflict, surgery-associated complications and Patient Reported Outcome Measures (ATRS/VISA-A+EQ5D+VAS Pain) were prospectively collected. Results No patients complained of shoe conflict after discontinuation of the orthotic boot. 2 patients developed aseptic blistering which resolved with regular dressing changes without prolongation of plaster immobilisation or non-weightbearing status. No patients required re-admission or further surgery. Mean ATRS at 1 year for patients with insertional Tendoachilles rupture was 64. For patients with insertional Achilles tendinopathy; mean VAS Pain was 41.8 pre-op and 20.5 post-op, mean VISA-A was 14.3 pre-op and 51 post-op and mean EQ-5D was 48.7 pre-op and 77.7 post-op. Conclusion Utilisation of a distally curved, medial paracentral incision for surgery at the insertion of the Tendoachilles was associated with 0% shoe conflict. The incision is safe, allows early accelerated rehabilitation and demonstrates good outcomes.

#42910 : Safety of and outcomes after day case percutaneous dorsal closing wedge calcaneal osteotomy with early weightbearing for the treatment of insertional Achilles tendinopathy

Preferred format : a podium presentation OR a poster presentation

Authors:

Togay Koc (1), Hesham Oshba (1)

1. , University Hospital Southampton, Southampton, United Kingdom

Keywords: Achilles, Tendinopathy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background The surgical management of insertional Achilles Tendinopathy is commonly an open procedure which subjects patients to inpatient management, a prolonged non-weightbearing status and significant risk of wound related complications. The aim of this study was to assess the safety of and outcomes after percutaneous Dorsal Closing Wedge Calcaneal Osteotomy (DCWCO) performed as a day-case operation with early mobilisation in an orthotic boot. Methods Between October 2022 and March 2024, 6 consecutive DCWCOs were performed for insertional Achilles tendinopathy. Surgery was performed in the lateral decubitus position with a popliteal block and no tourniquet. Irrigated, high torque, low speed burrs were utilised to perform the DCWCO which was fixated with 1-2 headless compression screw(s). Impinging Haglund deformities were excised percutaneous through the osteotomy incision or an accessory portal. Post-operatively, patients were placed in an orthotic boot and allowed to weightbear to comfort with two crutches for a period of 4-6 weeks. Chemical thromboprophylaxis was prescribed for 6 weeks. Radiographic union and surgery-associated complications were prospectively collected. Results All patients had the procedure performed as a day-case. Percutaneous portals had healed by the first post-operative visit at 2-3 weeks. All patients achieved radiographic union by 8 weeks post-operatively. No patients experienced sural neuritis. There were no cases of thromboembolic complications. Conclusion Percutaneous DCWCO can be performed safely as a day-case with immediate weight-bearing in an orthotic boot with reliable union.

#42911 : Union rate, metalwork removal and complications in Lapidus bunion correction using a plantar Lapidus plate, intercuneiform stabilisation and immediate weightbearing

Preferred format : a podium presentation OR a poster presentation

Authors:

Togay Koc (1), Hesham Oshba (1)

1. , University Hospital Southampton, Southampton, United Kingdom

Keywords: Hallux Valgus, TMTJ fusion, Lapidus

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background The Lapidus procedure is a corrective 1st tarsometatarsal joint (TMTJ) fusion, distal lateral soft tissue release, medial eminence resection +/- Akin osteotomy. Traditionally the fusion site is stabilised with screws and/or medial or dorsal plates and immobilised non-weightbearing in a plaster cast or orthotic boot with weightbearing commenced from six weeks. The procedure has been associated with non-union rates of 10% or higher. Recurrence of Hallux valgus has been observed with intercuneiform diastasis. Methods Between July 2021 and June 2023, 13 consecutive Lapidus procedures were performed utilising low-velocity, length retaining joint preparation, fixation with a plantar lapidus plate and a screw from the first metatarsal base to the middle cuneiform with immediate weightbearing allowed in a heel weightbearing shoe and/or short orthotic boot. Radiographic union, requirement for metalwork removal and complication data was recorded prospectively. Results All cases achieved radiographic union by 12 weeks. In all cases, patients returned to normal comfortable footwear by 12 weeks post-operatively. In one case, the plate/screw construct was exchanged for an intercuneiform screw due to irritation of the 2nd TMTJ by the 1st metatarsal base-middle cuneiform screw. In four cases, there were aseptic wound healing delays requiring dressing changes beyond two weeks. There were no cases of Tibialis Anterior or Peroneus longus tendon irritation or rupture. Conclusion/Findings We demonstrate that the Lapidus procedure can be performed safely using a plantar plate and immediate weight-bearing with no tendon irritation and low hardware removal rates.

#42912 : The learning curve of Minimally-invasive Extra-articular Transverse metatarsal and Akin osteotomy using an external jig for reduction, wire and screw placement.

Preferred format : a podium presentation OR a poster presentation

Authors:

Togay Koc (1), Hesham Oshba (1)

1. , University Hospital Southampton, Southampton, United Kingdom

Keywords: Hallux Valgus, Minimally Invasive Surgery

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Minimally-invasive Extra-articular Transverse metatarsal and Akin (META) osteotomy is a fourth-generation percutaneous hallux valgus correction associated with a flat learning curve. Various commercially available jigs claim to accelerate the learning curve. The aim of this study is to analyze a single surgeon’s learning curve utilising such a jig. Methods Between June 2021 and March 2024, 14 consecutive META procedures were performed by the senior author using a jig for reduction, wire and screw placement and a standard-sized C-arm for image acquisition. Surgery duration, number of fluoroscopies, and surgery-associated complications were prospectively collected. Results The average surgery time was 50 min (SD 10.4, range 31-64 min). The median number of fluoroscopies required was 149 (IQR 49, range 64-215). Three cases required the jig to be abandoned. With these cases excluded, mean surgery time was 47.7 min (SD 10.2, range 31-63 min) and median number of fluoroscopies was 149 (IQR 73, range 64-194). Where the external jig was able to be utilised, after eight cases, surgery time dropped to below 45 minutes and fluoroscopic images under 100. No cases required conversion to open surgery. No cases require secondary screw removal. Conclusion/Findings Previous studies have consistently demonstrated initial operative times over 90 minutes and over 150 fluoroscopic images with 27 to 40 procedures being required to drop the operative time to under 45 min and require less than 100 fluoroscopic images. In our series, the use of an external jig accelerated the achievement of these proficiency measures.

#42913 : Predictive factors for tillaux-chaput tubercle fracture: a case-control study of 28 cases

Preferred format : a podium presentation OR a poster presentation

Authors:

Cedric Dongmo Mayopa (1), David Ancelin (2), Despotin Pauline (3), Julie Manon (4), Gaspary Fodjeu (5), Randy Buzisa Mbuku (6), Masscheleyn Maxime (3), Olivier Cornu (3), Karim Tribak (3), Dan Putineanu (3)

1. Orthopedic and trauma department / IREC - Laboratoire de Neuro Musculo Squelettique, Cliniques Universitaires St Luc - Université Catholique de Louvain, Woluwe Saint Lambert, Belgium
2. Musculoskeletal Institute, Hôpital Pierre Paul Riquet, CHU Toulouse Purpan, Hôpital Pierre Paul Riquet, CHU Toulouse Purpan, 1 place Baylac, 31000, Toulouse, Toulouse, France
3. Department of Orthopaedic Surgery and Traumatology, Cliniques universitaires Saint-Luc UCL, Cliniques Universitaires St Luc - Université Catholique de Louvain, Brussels, Belgium
4. Orthopedic and trauma department / IREC - Laboratoire de Neuro Musculo Squelettique, Cliniques Universitaires St Luc - Université Catholique de Louvain, Brussels, Belgium
5. Orthopedic and trauma department / IREC - Laboratoire de Neuro Musculo Squelettique, Université Catholique de Louvain, Brussels, Belgium
6. IREC - Laboratoire de Neuro Musculo Squelettique, Université Catholique de Louvain, Brussels, Belgium

Keywords: Ankle fractures, Tillaux-Chaput fracture, Anterior malleolus, CT scan, Missed lesion

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Tillaux – Chaput tubercle fractures in adults often go unnoticed in ankle trauma. This study aimed to identify clinical and radiological factors associated with these fractures to develop a decision aid for CT diagnosis. Methods This case-control study included 72 patients with bimalleolar fractures who underwent both radiography and CT scans. The case group consisted of 28 patients with Tillaux – Chaput fractures, and 44 served as control. Socio-demographic, clinical data and injury mechanisms according to Arimoto and Forester's algorithm were compared using univariate and multivariate analysis to identify predictive factors. Results Tillaux-Chaput factures were missed on standard radiographs in 60% of the cases. Predictive factors of Tillaux-Chaput fractures were age > 60 years, injury on the dominant side, and Pronation – External Rotation injury mechanisms. Conclusion In the absence of routine CT scan for ankle fracture preoperative assessment we recommend a CT scan for elderly patients with ankle fractures on the dominant side, particularly with stage III or IV Pronation-External Rotation mechanisms.

#42916 : Hallux valgus complicated by gouty tophi treated with joint sparing corrective osteotomy

Preferred format : a podium presentation OR a poster presentation

Authors:

Keng Pui, Bryan Hon (1), Wei Liang, Eric Cher (1)

1. Orthopaedic Surgery, Sengkang General Hospital, Singapore, Singapore

Keywords: Hallux Valgus, Gout, Tophaceous Gout, Joint sparing corrective osteotomy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Hallux valgus (HV) and gout may present in a similar fashion, leading to pain and deformity of the first metatarsophalangeal joint (MTPJ). Studies have shown a high prevalence of HV in gouty patients and is associated with destructive joint arthritis. Most agree that surgical correction in the presence of joint arthropathy often excludes joint-sparing procedures. We present an uncommon case of hallux valgus presenting with a large tophaceous gout, being treated with excision and joint sparing corrective osteotomy. The patient is a 42-year-old male presenting with painful hallux valgus and concomitant gouty tophi of the 1st MTPJ. Plain radiographs showed adequate joint space without significant arthritis. Hallux Valgus Angle and Intermetatarsal Angle was 22 and 19.5 degrees respectively. A medial incision was made over the 1st MTPJ to excise the entire tophi followed by Chevron osteotomy of the 1st metatarsal. Using a small proximal incision, two beveled headless compression screws were used to secure the distal osteotomy. Akin procedure was then performed. Due to the chronic attenuation of the medial stabilizing structures, capsular plication was performed additionally. Post-operatively, the patient was allowed immediate full weight-bearing in Darco boots, which was weaned off after 2 weeks. At 4 months post-surgery, the patient recovered well with a painless joint and reported excellent range of motion. In conclusion, surgical management of a hallux valgus deformity with a concomitant gouty tophus should take into account the presence of MTPJ arthritis. Joint sparing corrective osteotomy should be considered in patients without significant joint destruction.

#42918 : Landmarks on the medial malleolus to determine the optimal direction of the syndesmosis screw: A cadaveric study

Preferred format : a podium presentation OR a poster presentation

Authors:

Arne Raçon (1), Cool Louis (1), Mahieu Niels (1), Frederick Michels (2), Debuyser Janou (1), Vereecke Evie (1)

1. Dept. Development and Regeneration, Faculty of Medicine, KU Leuven Campus Kulak, Etienne Sabbelaan 53, 8500 Kortrijk, Belgium, Kortrijk, Belgium
2. Orthopaedic department AZ Groeninge, , Kortrijk, Belgium

Keywords: syndesmosis, stability, syndesmotic screw, anatomy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Positioning a syndesmotic screw or a tightrope is a challenge to restore the integrity of the tibiofibular syndesmosis. The use of a 30 degree angle is a commonly used guideline. The purpose of this study is to evaluate the use of anatomical landmarks on the tibia to aid in optimal screw placement. Methods: A cadaveric study was performed on 5 specimens. In each specimen, 2 K-wires were drilled towards 2 specific anatomical landmarks: the anterior half of the medial malleolus (landmark A) or the anterior and medial border of the tibia (landmark B). A cross-sectional analysis was then performed to compare the results with the 30 degree guideline. In addition, the exit area of the K-wire was dissected to assess for damage to anatomical structures. Results: The mean orientation of the K-wire was 11.5±6.2 degrees using landmark A and 10.4±5.1 degrees using landmark B. The mean orientation of the syndesmosis was 20.2±6.7 degrees. The average distance between the K-wire and the great saphenous vein was 2.1 mm. Conclusion: The landmarks used in this study provided orientation closer to the ideal position compared to the 30 degree guideline. In addition, the great saphenous vein is at risk when a K-wire exits medially.

#42919 : Topographic distribution of bone density is a valid measure of three-dimensional hindfoot alignment in WBCT.

Preferred format : a podium presentation OR a poster presentation

Authors:

François LINTZ (1), Alessio BERNASCONI (2), Céline FERNANDO (3), Gianluca GONZI (4), Cesar DE CESAR DE NETTO (5)

1. Union Cheville Pied, Clinique de l'Union, Ramsay Santé, Saint Jean (Toulouse) , France
2. Department of Public Health, Orthopaedic and Traumatology Unit, University Federico II of Naples, Naples, Italy
3. Union Cheville Pied, Clinique de l'Union, Ramsay Santé, Saint Jean (Toulouse), France
4. Trauma and Orthopaedics, Royal College of Surgeons of England, London, United Kingdom
5. Department of orthopaedics, Duke University Medical Center, Durham, USA

Keywords: bone mineral density, weight bearing CT, alignment, Hounsfield units

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Hindfoot alignment contributes to degenerative joint disease by altering joint pressure distribution. Studies use weightbearing computed tomography (WBCT) to explore bone mineral density (BMD) through Hounsfield Units (HU), indicating altered joint pressure distribution. Here, Principal Density Analysis (PDA) was used to examine correlations between BMD in the foot and hindfoot alignment, comparing valgus and varus cases. This retrospective study analyzed 30 hindfeet (15 valgus and 15 varus). Measurements included Tibio-Calcaneal Angle (TCA), Hindfoot Moment Arm (HMA), Foot Ankle Offset (FAO). Data were processed using Vent Creativity (NYC, USA) to calculate the foot density orientation via PDA. Statistical analyses included Shapiro-Wilk tests for normality and Spearman's or Pearson's coefficients for correlations. Principal component analysis (PCA) assessed contributions of each component to hindfoot alignment. Bland-Altman plots evaluated agreement between PDA and control measurements. PDA revealed mean coronal angles of 11.59° (SD=6.22) in varus and 15.99° (SD=9.38) in valgus. Correlations were: moderate negative with TCA ($r=-0.43$, $p<0.001$), weak negative with HMA ($r=-0.17$, $p<0.01$), weak positive with FAO ($r=0.21$, $p<0.05$). Bland-Altman analysis showed over 95% agreement for FAO and TCA, and 91% for HMA. PCA indicated coronal angles predominantly influenced hindfoot alignment (65.84% variance), then axial (26.39%) and sagittal (7.77%). PDA's BMD foot analysis significantly correlated with hindfoot alignment measures, the coronal component being most influential. Limitations include the retrospective nature and sample selection. PDA's advantage lies in its application without relying on variable anatomical landmarks, though it depends on reliable segmentation for clinical use.

#42920 : A systematic review and meta-analysis of syndesmotic stability in posterior malleolar fractures

Preferred format : a podium presentation OR a poster presentation

Authors:

Siyoung Lee (1), Toby Jennison (1)

1. , University Hospitals Plymouth NHS Trust, Plymouth, United Kingdom

Keywords: posterior malleolar fractures, syndesmotic stability, systematic review, meta-analysis, PRISMA guidelines, Freeman-Tukey double arcsine transformation, fracture union, Malreduction incidence

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Posterior malleolar fractures cover a wide range of classifications, fracture configuration and techniques. It is currently unknown if the syndesmosis should be stabilised in addition to the posterior malleolus. The aim of this systematic review and meta-analysis was to determine if the syndesmosis was unstable and required fixation based on the surgical treatment of the posterior malleolus. Methods A systematic review using multiple databases was undertaken using PRISMA guidelines. All levels of evidence were included. Meta-analysis of proportions using the Freeman-Tukey double arscine transformation for non comparative studies. Results Out of 1889 papers initial identified 26 studies were included for analysis. 24 studies and 1233 fractures underwent fixation of the posterior malleolus. Of these 213 (12.9% 95% CI 6.9%-20.2%) required syndesmotic stabilisation. 10 studies analysed 558 patients where the posterior malleolus was not fixed and of these 320 (57.6% 95% CI 38.2-75.9%) required syndesmotic fixation. 5 studies analysed reduction of the syndesmosis with an incidence of malreduction of 5.3% (95% CI 1.2%- 11.1%). All but 1 fracture in the studies went onto union. Conclusion Posterior malleolar fixation provides syndesmotic stability in the majority of cases.

#42921 : A systematic review and meta-analysis of malreduction of posterior malleolar fractures based on fixation technique

Preferred format : a podium presentation OR a poster presentation

Authors:

Siyoung Lee (1), Toby Jennison (1)

1. , University Hospitals Plymouth NHS Trust, Plymouth, United Kingdom

Keywords: Posterior malleolar fractures, Fixation techniques, Malreduction incidence, Systematic review, Meta-analysis, PRISMA guidelines, Posterior fixation, Anterior fixation, Posterolateral fixation, Posteromedial fixation

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Posterior malleolar fractures cover a wide range of classifications, fracture configuration and techniques. There is limited evidence on the outcomes of these fractures based on fixation technique. The aim of this systematic review and meta-analysis was to determine the incidence of malreduction of the posterior malleolus based on fixation technique. Methods A systematic review using multiple databases was undertaken using PRISMA guidelines. All comparative studies of different surgical techniques were included. Meta-analysis was performed calculating odds ratios with 95% confidence intervals. Results Out of 1889 papers initial identified 7 were included for analysis. 4 studies compared posterior (screw or plate) and anterior posterior screw with an odds ratio of malreduction of 1.53 (95% CI 0.96-2.10). 3 studies compared posterior plating versus AP screw with an odds ratio 1.53 (95% CI 0.89-2.16). 2 studies compared AP versus PA screw with an odds ratio of -1.40 (95% CI -2.26- -0.55). 1 study analysed posterolateral versus posteromedial fixation with an odds ratio 0.34 (95% CI -2.49 – 3.17). Conclusion There is currently limited evidence on the technique of managing posterior malleolar fractures. Posterior approach for fixation gives a lower incidence of malreduction compared to anterior fixation.

#42922 : Exposed material after osteosyntheses is not necessarily infected: A case report of a distal tibia fracture

Preferred format : a podium presentation OR a poster presentation

Authors:

Johanna Michel (1), Nermine Habib (2), Angela Seidel (3)

1. HFR Fribourg, HFR Fribourg, Fribourg, Switzerland
2. Swiss Diabetic Foot Centers, Swiss Diabetic Foot Centers, Fribourg, Switzerland
3. , , Fribourg, Switzerland

Keywords: Fracture, wound complication, skin substitute

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Suspected infections of the implants and their management remain one of the main complications for orthopaedic and traumatology patients. With a skin defect and exposed material, the treatment is even more challenging. Methods / Case descriptions We report on a 66-year-old patient who sustained a closed oblique tibial fracture. After initial fixation with an external fixator, the definitive osteosynthesis was performed. The evolution was complicated by a wound dehiscence with exposed tibial plate. Due to the defect the material was changed and in the same surgery a free graciles flap was performed. As in one of four biopsies a skin germ was found, the patient was treated with antibiotics for 6 weeks. Unfortunately, the free graciles flap had a distal necroses with again exposed the material. Due to the lack of alternative skin coverage directive wound healing was performed. Most of the time the skin substitute Nushiled® was used. The plate was exposed for a total of 5 months before the wound was healed. Results After confirming the radiological consolidation of the fracture, the plate was removed. None of the bacteriological samples including sonication of the plate came back positive. At the follow up controlled at two years the patient had no limitations in her daily activities. Conclusion Exposed material of an osteosyntheses is always considered to be infected or at least contaminated by cutaneous bacteria. Yet this case questioned this consideration presenting a fracture which healed without antibiotic therapy and during hardware removal no germ could be found.

#42923 : Comparison of radiographic outcomes and 1st metatarsal shortening between minimally invasive chevron and akin, lapidus and scarf procedures in hallux valgus surgeries.

Preferred format : a podium presentation OR a poster presentation

Authors:

Keng Pui, Bryan Hon (1), Teddy Cheong (1), Wenxian Png (1), Inderjeet Singh Rikhraj (1), Wei Liang, Eric Cher (1)

1. Orthopaedic Surgery, Sengkang General Hospital, Singapore, Singapore

Keywords: 1st Metatarsal Shortening, Radiological outcomes, Minimally Invasive Chevron and Akin, MICA, Hallux Valgus, Lapidus, Scarf

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Iatrogenic transfer metatarsalgia is a known complication of hallux valgus correction from excessive shortening of the 1st metatarsal. Most studies show that 1st metatarsal shortening should be less than 4.0mm to avoid such complications. This study aims to compare the extent of 1st metatarsal shortening and radiological outcomes across the different procedures. A retrospective study was conducted using data from a single tertiary hospital involving 92 feet who underwent Minimally Invasive Chevron and Akin (MICA) (n=32), Lapidus (n=34) and Scarf (n=26) procedures. Radiological outcomes collected include the Hallux Valgus Angle (HVA), Intermetatarsal Angle (IMA) and 1st metatarsal shortening measured via the Maestro's method. All 3 techniques demonstrated significant improvements in HVA and IMA compared to preoperative measurements ($p = <0.05$). 1st metatarsal shortening was lower in MICA (0.06mm ± 1.55) compared to Scarf (0.44mm ± 4.14), however this was not statistically significant ($p=0.608$). Variance in 1st metatarsal shortening was smaller in MICA than Scarf. In our study Lapidus demonstrated the least MT shortening (-2.56mm ± 3.73) among the 3 procedures ($p <0.05$). Significant 1st Metatarsal shortening of more than 4mm was seen in 4 cases who underwent Scarf, while there were none in the MICA and Lapidus groups. All three techniques have been shown to provide adequate hallux valgus correction. Based on our study, Scarf has the highest risk of metatarsal shortening among the 3 procedures, potentially resulting in transfer metatarsalgia. As such, care should be taken while performing the osteotomy during Scarf procedure to minimize 1st metatarsal shortening.

#42925 : PEDIATRIC FLEXIBLE FLATFOOT: DOES THE OBESITY INFLUENCE THE OUTCOMES OF ARTHROEREISIS?

Preferred format : a podium presentation

Authors:

LUCA MONESTIER (1), GIACOMO RIVA (2), FABIO D'ANGELO (3, 4)

1. Orthopedics and Traumatology Unit, ASST Settelaghi, Varese, Italy
2. Orthopedics and Traumatology Unit, ASST Settelaghi, VARESE, Italy
3. , Università degli Studi dell'Insubria, Varese, Italy
4. Orthopedics and Traumatology Unit, ASST Sette Laghi Varese, Varese, Italy

Keywords: OBESITY, PEDIATRIC FLEXIBLE FLATFOOT, ARTHROEREISIS, OUTCOMES

Your abstract (DO NOT add the title, list of authors or keywords in this field)

BACKGROUNDS Childhood obesity emerged in last decades as an important public health problem worldwide. The economic impact of childhood obesity is remarkable, including both the healthcare costs of treating obesity and its consequences and the impact of high BMI on economic productivity. It has been demonstrated that also pediatric flatfoot (pes planus) is related to obesity, showing twice-higher risks compared to normal weight children. In the treatment of pediatric flatfoot, subtalar arthroereisis has been reported as a minimally invasive, effective, and low-risk procedure The aim of the present study is to evaluate correlations between childhood overweight/obesity and clinical and radiographic outcomes after subtalar arthroereisis with self-locking implants. MATERIAL AND METHODS This retrospective study included one hundred and sixty-nine pediatric patients (10-14 years old) who underwent to subtalar arthroereisis between February 2020 and April 2022 at the Orthopedics Unit of the ASST Settelaghi in Varese. RESULTS EFAS and VAS scores improve post-operateively in the whole population. Only seven cases with complications were reported. Radiographic assessment revealed an improvement of all angles. Significant statistical relationships were reported between BMI and EFAS postoperative score, postoperative VAS, postoperative calcaneal pitch angle, postoperative Kite angle, postoperative Meary angle and postoperative talo-first metatarsal angle. CONCLUSIONS Although arthroereisis represents a very effective and valid treatment of flatfoot both in normal weight and obese children, obesity significantly influences clinical and radiographic outcomes and obese children tend to perceive more pain and discomfort.

#42926 : Tibiotalocalcaneal Arthrodesis with Retrograde Intramedullary Nail: A Retrospective Analysis of Results Over 7 Years

Preferred format : a podium presentation OR a poster presentation

Authors:

Ramiro Vera Salas (1), Frano Atlagich Lopez (1), Luis Ortiz Meneses (1), Sergio Fuentes Traverso (1), Andres Fuentealba Pooley (1), Hugo Henriquez Sazo (2, 3)

1. Foot and Ankle departament, Instituto Traumatologico de Santiago, Santiago, Chile
2. Foot and Ankle departament, Clinica Santa Maria, Santiago, Chile
3. Foot and Ankle departament, Instituto Traumatologico de Santiago, santiago, Chile

Keywords: Arthrodesis, Ankle

Your abstract (DO NOT add the title, list of authors or keywords in this field)

OBJECTIVE: To analyse the outcomes of 44 cases of tibiotalocalcaneal arthrodesis using a retrograde intramedullary nail. METHODS: This retrospective study reviewed 44 surgeries performed between 2017-2023, evaluating aetiology, surgical technique, consolidation, postoperative complications, and clinical outcomes using the American Orthopaedic Foot & Ankle Society (AOFAS) and Ankle-Hindfoot Scale and the Visual Analogue Scale (VAS) for pain. RESULTS: The cohort included 26 women and 17 men, with an average age of 59 years. The most common aetiology was severe post-traumatic arthritis (52%), followed by poliomyelitis sequelae, Charcot neuroarthropathy, clubfoot, and neurological injuries. Surgeries were performed in the supine position, using anterior (54.5%) or lateral approaches with fibular resection (29.5%). Hindfoot malalignment was present in 75% of patients. Primary arthrodesis was performed in 2 cases. We do not prepare the subtalar joint. Bone grafting was used in 34% of cases, with 11 cases using femoral head allograft and 4 cases using fibular autograft. The average surgical time was 132 minutes. Consolidation was achieved in 97.7% of cases, with a median radiographic consolidation time of 20 weeks. One patient developed pseudoarthrosis. CT scans in 22 cases showed complete tibiotalar fusion. Superficial dehiscence was the most common complication (9 cases), and one patient had a deep infection. The average AOFAS score was 67/100, the average VAS score was 3/10, and all patients would undergo surgery again. CONCLUSIONS: Tibiotalocalcaneal arthrodesis with retrograde intramedullary nail is a reliable option for managing advanced arthritis with or without malalignment, providing stability, high consolidation rates, and few major complications.

#42927 : Missed displaced fifth metatarsal base fracture treated with peroneal brevis reconstruction using allograft.

Preferred format : a podium presentation OR a poster presentation

Authors:

Dhivakaran Gengatharan (1), Walter Wong Soon Yaw (1), Eric Cher Wei Liang (1), Inderjeet Singh Rikhraj (1)

1. Orthopedic Surgery, Sengkang General Hospital, Singapore, Singapore

Keywords: Metatarsal fracture, peroneus brevis, allograft, foot eversion.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Displaced base of 5th metatarsal (MT) fractures can lead to malunion and retraction of the peroneal brevis (PB), resulting in chronic pain and foot eversion weakness. We report an uncommon case of a missed displaced 5th MT base fracture treated with PB reconstruction using an allograft. Case Report: We report a young gentleman presented with localized tenderness at the base of the 5th MT, swelling upon ambulation, and weakness in foot eversion. Radiographs showed a proximally retracted 5th MT base fracture. MRI revealed a hyperintense signal in the retracted PB tendon, indicating a chronic tear. Surgical technique: A lateral incision was made along the axis of the 5th MT. The displaced fragment and attenuated PB tendon were excised. A drill hole was created at the base of the 5th MT. The proximal end of the allograft tendon was stitched to the remaining healthy PB using the Pulvaturf technique, and the distal end was passed through the drill hole and sutured onto itself. The foot was placed in eversion to ensure adequate tensioning during the procedure. Postoperatively, the patient was placed in a non-weight bearing cast for six weeks. Results At three months, the patient showed significant improvement in functional ambulation and foot eversion strength. He resumed sports-related activities at six months and continued to improve up to the one-year follow-up. Conclusion Surgical reconstruction of displaced 5th MT base fractures with PB retraction using an allograft tendon is a viable treatment option, demonstrating excellent clinical and functional outcomes.

#42928 : MRI features of insertional Achilles tendinopathy: descriptive study of a surgical cohort

Preferred format : a podium presentation OR a poster presentation

Authors:

Adriel You Wei Tay (1), Rui Xiang Toh (1), Kizher Shajahan Mohamed Buhary (1), Zongxian Li (1), Kae Sian Tay (2)

1. Orthopaedic Surgery, Singapore General Hospital, Singapore, Singapore
2. Orthopaedic Surgery , Singapore General Hospital, Singapore, Singapore

Keywords: Achilles tendinopathy, insertional, magnetic resonance imaging, Haglund deformity, bone marrow edema

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Interpreting magnetic resonance imaging (MRI) findings in IAT is complex due to subtle and heterogeneous nature of pathological changes within the tendon and surrounding structures. Differentiating between pathological and normal variations, assessing tendon involvement, and identifying associated pathologies like retrocalcaneal bursitis and Haglund deformity can be challenging. This study aims to analyse the common pathologic MRI features of IAT in surgical patients. Methods A retrospective review of a foot and ankle registry in a tertiary institution was performed. Patients who underwent surgery for IAT and had preoperative MRIs performed were identified. The MRIs were reviewed by a senior radiologist specializing in musculoskeletal imaging. MRI features analysed were the presence of Achilles tendon degeneration, partial tendon ruptures, retrocalcaneal bursitis, Haglund deformity and bone marrow edema (BME). Results Thirteen patients underwent preoperative MRI examination, revealing findings consistent with Achilles tendon degeneration in 12 cases (92.3%). Among these, partial ruptures of the Achilles tendon were observed in 10 cases (76.9%), while features indicative of retrocalcaneal bursitis were present in 7 cases (53.8%). Additionally, 10 cases (76.9%) exhibited associated Haglund deformity, with 8 cases (61.5%) demonstrating concomitant BME of the calcaneal tuberosity. Conclusion Preoperative MRI assessment is effective in identifying the pathologic features of insertional Achilles tendinopathy. The high prevalence of Achilles tendon degeneration, partial ruptures, and concurrent retrocalcaneal bursitis highlights the multifaceted nature of this condition. Furthermore, the frequent coexistence of Haglund deformity, often accompanied by bone marrow edema, suggests a potential association between structural abnormalities and symptomatology.

#42929 : The human allogeneic cortical bone screw (Shark Screw®) as an alternative to avoid metal removal and metal implant related complications?

Preferred format : a podium presentation OR a poster presentation

Authors:

Boris Tirala (1), Thomas Reitter (1)

1. Orthopaedy, BKH Schwaz, Schwaz, Austria

Keywords: human allogeneic cortical bone screw, Shark Screw®, bone metabolism, MTP, calcaneus fracture, os navicular, talus, FDL-transfer, trauma, metal removal

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: To avoid the known problems with metal implants, the human allogeneic cortical bone screw (Shark Screw®) was developed. It is a set screw with a fine thread made from donor cortical bone, available between 3.5-5 mm diameter as a Shark Screw®-cut, as the -diver version with 5 mm diameter and as a bone anker. Methods: Between 2018 and 2023 the implant was used in more than 600 cases in our institution, 140 of them in foot surgery. For 48 isolated traumata of the foot and ankle a retrospective analysis of the data was performed. Potential risks using the Shark Screw®: missing compression, not enough stability Potential advantages using the Shark Screw®: no metal removal , freeing operation theater time, low infection rate, no biofilm, no rejection of the implant, no defect zone in the bone, minimal invasive method possible Results: Three patients of the 48 evaluated, showed complications, with one no full consolidation after 3 months, one patient with a broken diver after 1 year, but no clinical symptoms and one with a secondary dislocation, even though bony union was recorded after 3 months. Scores and time to return to work were similar to results presented for metal implants. Conclusion: The Shark Screw® is an alternative to metal implants. It can be widely used from MTP I-V to calcaneus-, os navicular-, talus-, ankle fractures, and for FDL transfers. The low rate of complication and the fast integration of the screw into the patient's bone favors its use.

#42930 : Posterior Malleolar Fractures: Do we need to fix the syndesmosis?

Preferred format : a podium presentation OR a poster presentation

Authors:

Siyoung Lee (1), Toby Jennison (1), Alastair Marsh (2), Paul Fenton (2)

1. , University Hospitals Plymouth NHS Trust, Plymouth, United Kingdom
2. , University Hospitals Birmingham, Birmingham, United Kingdom

Keywords: Posterior malleolar fractures, Syndesmotic fixation, Surgical outcomes, Trimalleolar fractures, Haraguchi classification, Mason classification, Retrospective cohort study, Syndesmotic disruption

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Over the last decade, our understanding of posterior malleolar fractures has increased. However, it remains unclear if the syndesmosis should be fixed with the posterior malleolus. This study aimed to determine the failure rates of posterior malleolar fractures based on syndesmotic and posterior malleolar fixation. Methods A retrospective cohort study was conducted on posterior malleolar fractures at a single trauma center from 2015-2020. Patients had pre-operative CT scans and surgical treatment. Fractures were classified by Haraguchi and Mason criteria. Failure was defined as the need for revision due to loss of reduction/unstable syndesmosis. Results Out of 141 fractures, 101 were trimalleolar. Revision was required in 5.7% of cases. The syndesmosis was fixed in 41 cases with 9.8% failure rate, and not fixed in 100 cases with 4% failure rate($p=0.180$). The posterior malleolus was fixed in 71 cases with 5.6% failure rate, and not fixed in 70 cases with 5.7% failure rate($p=0.984$). When both the posterior malleolus and syndesmosis were fixed, the failure rate was 42.9% compared to 1.6% when only the posterior malleolus was fixed($p=0.00001$). No significant differences in failure rates were observed based on Haraguchi or Mason classifications. However, Mason type 1 fractures showed lower failure rates with syndesmotic fixation(21.4% vs. 5.6%,$p=0.2576$). Conclusion Whilst Mason type 1 fractures may benefit from syndesmotic fixation, this study doesn't demonstrate a clear need for syndesmotic fixation. Individual fracture fixation should be case-specific, and further studies are required to explore other markers of syndesmotic disruption and determine optimal procedures.

#42934 : Ankle arthrodesis with Neofuse® In2Bones® anterior plate : preliminary results of a prospective multicentric study

Preferred format : a podium presentation OR a poster presentation

Authors:

Floriane Moore (1), Yves Tourné (2)

1. Orthopédie-Traumatologie, CHU Dijon, Dijon, France
2. Orthopédie-Traumatologie, Clinique des Cèdres, Grenoble, France

Keywords: Ankle arthrodesis, Tibio-talar arthrodesis, anterior plate

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction : Tibio-talar fusion is the gold standard for the treatment of end-stage arthrosis. The anterior plate and isolated screw fixation is mechanically the most stable and achieves a higher consolidation rate. The study aims to evaluate the performance and safety of the Neofuse® In2Bones® anterior plate arthrodesis. Method : This is a one-year prospective multicentric European study. The primary outcome measure is tibio-talar consolidation. Secondary outcome includes radiographic measurements, functional results and scores, clinical stability and fusion, as well as device safety evaluation. Results : The preliminary study results on 35 patients who completed follow-up are presented. Fusion was achieved in 97.1% of cases (34/35) with a mean time of 3.9 months. Patients returned to work/daily activities at 5.3 months. At one year, 100% (35/35) are stable with 91% (32/35) of normo-axial hindfoot. Comparing pre-operative and post-operative scores at one year showed a significant improvement : 7 vs 2 for VAS, 29 vs 74.2 for AOFAS, 6 vs 17 for EFAS, 27.2 vs 36.4 for SF12, all with $p<0.001$. The one-year radiographic results showed mean frontal, sagittal and tibia axis-to-talus alignments of 91.1° (79-98), 104° (88-122) and 36.3 (27-45) respectively. Conclusion : The Neofuse® In2Bones® tibio-talar arhtrodesis device demonstrates excellent results in this preliminary study. The fusion rate of 97.1% is comparable to the literature. The study reports no complication directly related to the device. The surgical objective of achieving consolidation in a good position as well as clinical objectives of painlessness and stability are perfectly met.

#42936 : Technique and early results of endoscopic flexor hallucis longus transfer with interference screw and additional tension slide cortical button for achilles tendon rupture

Preferred format : a podium presentation OR a poster presentation

Authors:

Samuel Franklin (1), Vikramman Vignaraja (1), Tom Lewis (1), Robbie Ray (1)

1. , Kings College Hospital NHS Foundation Trust, London, United Kingdom

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Endoscopic flexor hallucis longus (FHL) transfer can be used in the management of acute Achilles tendon rupture. A cadaveric study demonstrated greater strength can be achieved using an FHL transfer with interference screw and cortical button slide technique compared to an interference screw alone. Objectives Demonstrate this novel technique to be a safe and effective treatment method. Methods The complications and patient related outcome measures (PROMs) of 10 patients who underwent Achilles tendon rupture repair using the aforementioned technique were reviewed. Validated scoring systems were utilised (EQ-5D, Manchester.Oxford Foot Questionnaire (MOxFQ) and Visual Analogue Score for pain (VAS Pain)) with results collected via the BOFAS Amplitude registry pre-operatively and at 6 monthly intervals post-operatively. Results Mean (SD) age at time of surgery is 58 (16.3) years. EQ-5D improved from a mean (SD) of 0.48 (0.35) pre-operatively to 0.76 (0.26) at 6 months and 0.98 (0.05) at 12 months post-operatively. Similarly, VAS Pain improved from an average of 40.6 (30.9) pre-operatively to 15.4 (27.2) and 2.2 (4.3) at 6 and 12 months respectively. Improvements in MOxFQ were reported across all three domains post-operatively also. One patient developed tibial nerve neuritis: no further complications were reported. Conclusion This endoscopic method is safe, effective and provides a stronger repair. Early patient data shows improvements in quality of life, pain and specific foot and ankle outcome measures following surgery. Further studies are required with longer term follow up and greater patient numbers. Clinical comparison to standard interference screw fixation should also be undertaken.

#42937 : Results of ultrasound guided hyaluronic acid injection in patients with ankle osteoarthritis and osteochondral lesions of the talus.

Preferred format : a podium presentation

Authors:

Enrique Alberto Vargas Meouchi (1), Andrea Sallent Font (1), Iker Benegas Lage (1), Yuri Denis Lara Taranchenko (1), Gemma Duarri Lledo (1), Rosa Busquets Net (1), Matias De Albert (2), Marta Altayo Carulla (3), Ignacio Maled Garcia (1)

1. Trauma and orthopedics, Vall d'Hebron University Hospital , Barcelona, Spain
2. Radiology, Vall d'Hebron University Hospital , Barcelona, Spain
3. Trauma and orthopedics, Vall d'Hebron University Hospital , Barcelona , Spain

Keywords: Ankle osteoarthritis, osteochondral lesions of the talus, hyaluronic acid, ultrasound-guided injection

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Ankle osteoarthritis (OA) and osteochondral lesions of the talus (OLT) can be managed conservatively with different strategies with surgery reserved for failures of conservative management. Objectives: Describe the effects regarding pain relief and possible complications of hyaluronic acid (HA) injection in patients with ankle OA and OLT. Methods: Observational study of patients with ankle OA and OLT that had an ultrasound guided HA injection by the radiology department between January 1st 2020 and December 1st 2023 in our center and a minimum follow-up of 6 months. Patients' visual analog scale (VAS) at baseline, 3 months and 6 months after injection were recorded. Exclusion criteria were administration of another medication (except mepivacaine) or biological therapy and incomplete data collection during follow-up. Results: 137 patients were referred to the radiology department for an ultrasound guided injection. Fifty-eight patients (63 ankles) that received HA injection for ankle OA and OLT were identified. Thirty-seven (42 ankles) were included. Baseline VAS score was 7.98 ± 1.37; 5.76 ± 2.14, and 6.64 ± 2.07 at 3 and 6 months post injection respectively ($p<0.05$). Patients reported a mean of 7.9 ± 7.81 months with some pain relief. Patients mean age was 59.6 (range 32-83) and mean follow-up was 18.8 ± 12.1 months. Eleven (26.2%) patients received a second HA injection and 7 (16.6%) underwent surgery during follow-up. No complications were recorded in this series. Conclusion: HA injections is a safe treatment that may provide a temporary pain improvement in patients with ankle OA and OLT.

#42938 : Cartiva interpositional arthroplasty versus arthrodesis in the treatment of hallux rigidus: A retrospective comparative study with mean 2 year follow up

Preferred format : a podium presentation OR a poster presentation

Authors:

Tom Lewis (1), Sam Trowbridge (1), Samuel Franklin (1), Benjamin Lau (1), Ramy Shehata (1), Shirley Lyle (1), Robbie Ray (1)

1. , Kings College Hospital NHS Foundation Trust, London, United Kingdom

Keywords: Hallux rigidus, Cartiva, Arthrodesis, Metatarsophalangeal joint

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: The gold standard surgical treatment for hallux rigidus is arthrodesis, which sacrifices range of motion (ROM). The Cartiva synthetic cartilage implant (SCI) has been utilised as an interpositional arthroplasty, aiming to reduce pain whilst preserving ROM. We aimed to evaluate the clinical outcomes of Cartiva SCI compared to arthrodesis in our centre. Methods: A retrospective cohort study was conducted, enrolling all adult patients who underwent primary first MTPJ SCI arthroplasty or arthrodesis for the treatment of hallux rigidus. The primary outcome was a validated patient-reported outcome measure (PROM), the Manchester-Oxford Foot Questionnaire (MOXFQ). Secondary outcomes included EQ-5D, complication rates, VAS Pain and FAAM (ADL). Results: There were 33 cases divided into two groups (17 Cartiva SCI, 16 arthrodesis, mean age 59.0 ± 9.9 years) with a mean follow up of 2.3 years. There was no statistically significant difference in MOXFQ, EQ-5D, VAS Pain or FAAM (ADL) outcome scores between the Arthrodesis and SCI groups ($p > 0.05$). The mean MOXFQ Index score was 7.2 ± 6.4 for the SCI group and 3.9 ± 5.8 for the Arthrodesis group at final follow up ($p = 0.15$). Although complications were high in both groups, the overall hallux re-operation rate was 29.4 % in the SCI cohort and 0.0 % for arthrodesis. Conclusion: There was no significant superiority of Cartiva SCI over arthrodesis in terms of PROMs. Due to the higher rate of further surgical intervention in the SCI cohort, we recommend arthrodesis as the preferred surgical option for hallux rigidus.

#42940 : Lateral release in open hallux valgus correction surgery through a “trans-osteotomy” approach: a comparison cadaveric study with the trans articular approach

Preferred format : an ePoster Displayed

Authors:

Enrique Adrian Testa (1, 2), Daniel Poggio Cano (3), Markus Knupp (4), Pablo Ruiz Riquelme (5), Annamaria Porreca (6), Albert Baduell (3), Martin Riegger (7), Miki Dalmau Pastor (8)

1. Orthopaedics and Traumatology Department, Ente Ospedaliero Cantonale (EOC), Bellinzona, Switzerland
2. , Università della Svizzera Italiana (USI), Lugano, Switzerland
3. , Hospital Clinic de Barcelona, Barcelona, Spain
4. , Meinfuss Zentrum Basel, Basel, Switzerland
5. , Clinica Las Condes, Santiago de Chile, Chile
6. , Universita di Chieti-Pescara, Pescara, Italy
7. , Ente Ospedaliero Cantonale (EOC), Lugano, Switzerland
8. , University of Barcelona, Barcelona, Spain

Keywords: Hallux valgus, lateral release

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The main objective of lateral release is to release the lateral suspensory ligament and the lateral capsule while trying not to release the joint adductor tendon. A 'trans-osteotomy' approach has been described in the past but there are no studies demonstrating its effectiveness. The aim of the present study is to describe the technique and to compare it by means of a cadaveric study with a 'classic' approach, the 'trans-osteotomy' approach. 18 specimens divided into two groups. 6 anatomical structures identified as targets to assess the success of the release and possible damage to surrounding structures. The anatomical study showed that both techniques achieve the objective. With regard to the structures at risk, we saw that in the TA group there were 2/9 lesions (22.2%) of the LCL compared to 1/9 case (11.1%) in the TO group; we also saw that in the TA group there was a lesion of the CT in 6/9 cases compared to 8/9 in the TO group. All of these lesions appear linear and parallel to the tendon belly. The trans-osteotomy approach is an alternative that allows better visualisation of the lateral structures to be released and is less aggressive than other classical approaches. The data presented would seem to show that it is an approach that allows the purpose of release to be achieved effectively and safely. The data appear to be encouraging and open the way for further studies to confirm the validity of this promising variant.

#42941 : The Forth Valley Achilles Management Protocol for Acute Achilles Tendon Ruptures: A Prospective Observational Study

Preferred format : a podium presentation OR a poster presentation

Authors:

Louis John Stephen (1, 2), Conor Rankin (2), Catriona Phin (3), Kevin McCloskey (2), Turab Syed (2, 1), Efstathios Drampalos (2, 1)

1. School of Medicine, Veterinary & Life Sciences, University of Glasgow, Glasgow, United Kingdom
2. Department of Trauma & Orthopaedics, NHS Forth Valley, Larbert, United Kingdom
3. Department of Physiotherapy, NHS Forth Valley, Larbert, United Kingdom

Keywords: Achilles tendon rupture, enhanced rehabilitation, re-ruptures, complications, ATRS, tendon reconstruction.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: This prospective study explores the outcomes of the Forth Valley Protocol (FVP) for the management of acute Achilles tendon ruptures. The protocol uses ultrasound as the primary mechanism to guide treatment. Methods: All patients presenting with acute tendoachilles rupture over a three-year period were included. Patients under 18 years of age, chronic ruptures, or prior surgery to the Achilles tendon were excluded. Patients with a gap ≤2cm had conservative management following an Early Rehabilitation Protocol (ERP) and >2cm underwent surgery (if an appropriate surgical candidate). Achilles Tendon Rupture Scores (ATRS) were obtained retrospectively. Fischer's exact test was used to determine statistical significance. Results: 158 patients were included with a mean age of 53 (range 20-89). Ultrasound scans were obtained for 121 patients (76.5%), demonstrating a mean tendon gap of 1.61cm. 143 patients were managed conservatively and 15 surgically. The overall re-rupture rate was 3.8% (n=6) with a mean time to re-rupture of 271 days. All re-ruptures occurred in patients treated conservatively, but this was not found to be statistically significant (P=1.0). The overall complication rate (excluding re-ruptures) was 1.9%. ATRS was comparable between both treatment modalities (P=0.382, 0.422), with a mean score of 86.6 in the conservative group and 81.4 in the surgical group. Conclusion: The FVP demonstrates low re-rupture and complication rates in line with other published literature. Our study suggests patients with gaps ≤2.0cm on ultrasound can be successfully treated conservatively with an ERP. This has potential benefits for improved patient outcomes, patient satisfaction, and cost effectiveness.

#42942 : Description and considerations of tibial cartilage involvement in Chevron and Oblique type medial malleolus osteotomies. A Cadaveric study.

Preferred format : an ePoster Displayed

Authors:

Pablo Ruiz Riquelme (1), Albert Baduell (2), Magdalena Castro (3), Miki Dalmau Pastor (4), Carlo Gamba (5), Daniel Poggio Cano (2), Enrique Adrian Testa (6, 7)

1. , Clinica Las Condes, Santiago de Chile, Chile
2. , Hospital Clinic de Barcelona, Barcelona, Spain
3. , Universidad Finis Terrae, Santiago de Chile, Chile
4. , University of Barcelona, Barcelona, Spain
5. , Hospital del Mar, Barcelona, Spain
6. Orthopaedics and Traumatology Department, Ente Ospedaliero Cantonale (EOC), Bellinzona, Switzerland
7. , Università della Svizzera Italiana (USI), Lugano, Switzerland

Keywords: Medial Malleolus Osteotomy, Ankle Exposition

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The most commonly medial malleolus osteotomy used are Chevron(OMM-C) and Oblique(OMM-O). A bony "safety zone" with less cartilage is described for this technique, however, the difference between the two techniques and the impact of the surgeon's experience is not described. The objective is to quantify tibial articular cartilage damage according to type of osteotomy and surgeon experience. Surgeons with 20 years (C1) and 3 years (C2) of experience. Osteotomy angulation was measured, photographic recording of tibial plateau determining distance (mm) between "safety zone" and osteotomy; percentage of cartilage area involved. 28 cadaveric legs. Median angulation of OMM-C 54.5º and OMM-O 59º. According to surgeons C1 and C2, median OMM-C angulation 54º and 56º with no differences; OMM-O 52º and 64º with differences (p=0.0017) respectively. Presence of 63.5% of cartilage in "safety zone". More secure location medial to the "safety zone" in OMM-C versus OMM-O and in C2 versus C1. Median compromise of 0% and 1.1% of the tibial plafond area for OMM-C and OMM-O respectively, with no differences. No differences according to surgeon and osteotomy. In this study, there were no differences in angulation between osteotomies, neither according to surgeon in OMM-C, but there was a greater cutting angulation in OMM-O of the less experienced surgeon. The "safety zone" was confirmed at 63.5% cartilage. OMM-C was located more medial to the "safety zone", towards the medial malleolus, versus OMM-O. Both osteotomies had low involvement of the articular cartilage area with no differences between osteotomies or surgeons.

#42943 : Outcome of malreduction of ankle syndesmosis accompanying ankle fractures: Defining the maximum range of displacement based on CT scan

Preferred format : a podium presentation

Authors:

Amirreza Vosoughi (1), roham Borazjani (1), Ahmadifar Ali (1), Seyed Ali Hashemi (1)

1. , Shiraz University of Medical Sciences, Shiraz, Islamic Republic of Iran

Keywords: : Ankle; Fracture; syndesmosis; Outcome

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: This study aimed to investigate the outcomes of ankle syndesmosis malreduction, at least one year following the surgery. Methods: Adult patients underwent ORIF of syndesmosis accompanying ankle bi/trimalleolar fractures with at least one unbroken syndesmosis screw were enrolled. Bilateral ankle CT scan was requested to identify anatomic accuracy of syndesmosis reduction, 1cm proximal to the joint. Patients were divided into five groups: anatomical reduction, compression, diastasis, translation, and rotation. Clinical outcomes were assessed using visual analogue scale (VAS) of pain, American Orthopaedic Foot and Ankle Society (AOFAS) ankle-hindfoot scale, and Olerud-Molander Ankle Score (OMAS). Results: Among 57 cases (average age: 46.3±15.4 years), axial CT scan revealed anatomical reduction in 16 patients(28.07%), translation in 17 patients(29.82%), rotation in 11 cases(19.29%), compression in 8 cases(14.03%), and diastasis in 5 cases(8.77%). The average (range) value of fibula position in the incisura compared to uninjured ankle for compression, diastasis, translation, and rotation types were 3.4mm(2.4-5.1), 3.49mm(2.2-4.7), 3.1mm(2.1-4.1), and 4.1mm(2.1-5.8), respectively. Average VAS, AOFAS, and OMAS scores among all patients were 1.8±2.3, 90.5±12.0, and 84.4±16.9 respectively. There were no significant differences in VAS, AOFAS, and OMAS scores between anatomical and malreduction groups (P-values:0.50, 0.73, and 0.65 respectively). We found no significant differences among four groups of syndesmosis malreduction in terms of VAS score (P-value:0.47), AOFAS score (P-value:0.88), and OMAS (P-value:0.79). Conclusion: Ankle syndesmosis malreduction (up to about 5mm) may not significantly impact the clinical outcomes of syndesmosis injury accompanying ankle fractures, if all malleoli have been anatomically reduced and rigidly fixed.

#42947 : Shear wave speed, mechanical and morphological comparison in conservatively treated and uninjured Achilles tendon

Preferred format : an ePoster Displayed

Authors:

Alessandro Schneebeli (1), Marco Barbero (1), Deborah Falla (2), Enrique Adrian Testa (3, 4), Martin Riegger (5), Alessandro Sangiorgio (5), Corrado Cescon (1), Giuseppe Filardo (5)

1. , SUPSI, Lugano, Switzerland
2. , University of Birmingham, Birmingham, United Kingdom
3. Orthopaedics and Traumatology Department, Ente Ospedaliero Cantonale (EOC), Bellinzona, Switzerland
4. , Università della Svizzera Italiana (USI), Lugano, Switzerland
5. , Ente Ospedaliero Cantonale (EOC), Lugano, Switzerland

Keywords: Achilles tendon

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Shear wave tensiometry is a recent technology that uses accelerometers to measure wave propagation along the tendon. The aim of this study was to evaluate shear wave speed (SWS) differences in conservatively treated Achilles tendon after rupture. Tendon loading was measured using a shear wave tensiometer consisting of four accelerometers fixed on the tendon. SWS was calculated based on the time delay between the different waves detected by the accelerometers and the mechanical wave propagation on the tendon. Mechanical properties of the tendons were evaluated using MyotonPRO and morphological properties using ultrasound imaging. 29 participants with conservatively treated AT were recruited, 15 after mid-tendon rupture (MID) and 14 after myotendinous junction rupture (MTJ). SWS difference between the affected and unaffected side were statistically significant only in 2 out of 11 contraction level in the MID group, and the MTJ group showed a similar SWS behavior between the affected and unaffected side at every level. The behavior of SWS between the two conservatively treated AT (MID and MTJ group) was similar. MyotonPRO examination showed similar tendon stiffness between affected and unaffected side in both MID and MTJ groups. At ultrasound, the affected tendon showed an increased thickness compared to the unaffected side in both MID and MTJ groups. Conservative treatment after ATR does not seem to influence SWS values. While tendon thickness in the affected tendon was higher compared to the unaffected side, the myotonometry evaluation showed similar tendon stiffness between affected and unaffected side in both MID ad MTJ groups.

#42949 : A Glomus Tumor at the Achilles Tendon: A Case Report

Preferred format : an ePoster Displayed

Authors:

Erika Jerele (1), Matevž Bajuk (1), Pika Krištof Mirt (2)

1. MD, Splošna bolnišnica Novo mesto, Novo mesto, Slovenia
2. MD, Splošna bolnišnica Novo mesto, Novo mesto , Slovenia

Keywords: Achilles tendon, ankle pain, glomus tumor

Your abstract (DO NOT add the title, list of authors or keywords in this field)

A glomus tumor is a painful soft tissue neoplasm arising from the glomus body. The tumor usually presents itself with a triad of symptoms: pain, touch and cold sensitivity. The most common site of occurrence is the nail bed of the hand; other locations are far less common. Presentation in the ankle is rare. In the present study, we report a case of a patient with a glomus tumor at an atypical site, the Achilles tendon. A 75-year-old man presented to our department with a history of 6 months severe pain in the area of his right Achilles tendon, provoked by palpation or wearing shoes. Physical examination showed a painful, 1 cm large mobile lump at the medial border of the Achilles tendon. Gentle palpation of the lump provoked severe pain. Magnetic resonance imaging showed a non-specific change at the Achilles tendon, which could represent fluid collection. Rupture or calcifications of the Achilles tendon were excluded. The patient underwent surgical excision of the mass. Surgical exploration revealed a well-defined blue lesion on the Achilles tendon, approximately 1 cm in diameter. The lesion was excised and sent for histopathological examination. Gross examination revealed a flat solid grey-brown oval mass measuring 12 x 8 x 4 mm. A histopathologic diagnosis was reported as a glomus tumor. At the one-month follow-up visit, the patient presented pain free and could wear regular shoes.

#42950 : Fifteen years learning curve of scarf ostetomy for hallux valgus correction

Preferred format : a podium presentation

Authors:

Hrvoje Klobučar (1), Borna Strahonja (2), Denis Tršek (2)

1. Orthopaedic Surgeon, AKROMION, Zagreb, Croatia
2. , AKROMION, Zagreb, Croatia

Keywords: scarf osteotomy, learning curve, hallux valgus correcton

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The study evaluates learning curve of scarf osteotomies in treatment of hallux valgus as a work of single surgeon. He performed 194 isolated scarfs of the first metatarsal (with/without Akin or lateral release) during 15 years. Radiological evaluation (by two non-operating surgeons) was done before surgery and at least one year after treatment. We measured intermetatarsal angle-IMA, hallux valgus angle-HVA, distal-metatarsal articular angle-DMAA, proximal-to-distal phalangeal-articular angle-PDPAA, translation of diaphysis and sesamoid position. Clinical evaluation was performed by Foot and Ankle Disability Index - FADI and the American Orthopedic Foot and Ankle Score – AOFAS. Descriptive statistics was done, and evaluation of paired samples was performed after testing the distribution of measured values. There were 182 women and 12 men. Bilateral surgery at once was done in 42 patients. There were HVA diminishes for 24°-from 32°(16°-60°) before to 8°(-27°-32°) after surgery, IMA for 10°-from 14°(6°-31°) to 4°(0°-13°), DMAA for 13°-from 18° to 5°, PDPAA for 8°-from 7° to -1° and sesamoid position from 5(2-7) to 2(1-7). First metatarsal translation was 59%(17%-94%). FADI enlarged from 65(26-99) to 95(45-100) and AOFAS from 76(47-98) to 96(72-100). All diferences were significant ($p<0,05$). Reccurence rate was 4,6%, iatrogenic hallux varus 6,3%, symptomatic screw in 9%, transfer metatarsalgia 2,3%, troughing 2,9% superfitial wound infecton 1,1% and postoperative hypesthesia 1,1%. Scarf osteotomy is reliable and safe procedure for correction of moderate to severe hallux valgus deformities. Relatively long learning curve is burden with solvable complications.

#42951 : Popliteal nerve block anaesthesia versus combined spinal anaesthesia and local infiltration anaesthesia during hallux valgus surgery: a randomised clinical trial

Preferred format : a podium presentation OR a poster presentation

Authors:

Leonieke Palmen (1), Myrthe van de Ven (2), Elcke Karthaus (2), Sander Koëter (2), Justus Jansen (2)

1. , Sint Maartenskliniek, Nijmegen, The Netherlands
2. , CWZ, Nijmegen, The Netherlands

Keywords: hallux valgus, mobility, spinal anaesthesia, local infiltration anaesthesia, pain, popliteal nerve block

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background To determine the anaesthesia technique for hallux valgus surgery that allows early mobility, popliteal nerve block anaesthesia was compared with combined local infiltration anaesthesia (LIA) and spinal anaesthesia. Methods During this prospective, randomised, clinical trial, 31 patients eligible for hallux valgus surgery were randomised to receive either LIA/spinal anaesthesia or popliteal nerve block anaesthesia. Patients were mobilized during a short overnight stay. The primary outcome was early postoperative mobility. Intraoperative and postoperative pain relief and patient satisfaction were secondary outcomes. Results On the day of surgery, independent mobilization and weight-bearing ability of patients who received LIA/spinal anaesthesia were significantly better. No significant between-group differences were observed in postoperative pain. Good satisfaction with the anaesthetic technique was achieved in both groups. Conclusions Popliteal nerve block anaesthesia and LIA/spinal anaesthesia are suitable for hallux valgus surgery. Owing to its earlier independent mobility, we prefer LIA/spinal anaesthesia.

#42952 : Effect of Plantar Fasciotomy on the Mobility of the First Metatarsophalangeal Joint

Preferred format : a podium presentation OR a poster presentation

Authors:

ANDRES VALDIVIA SAN ROMAN (1), LAIZ LISSETTE BELLO TEJEDA (2), SERGIO LOPEZ HERVAS (1), MANEL FA BINEFA (1), ANDREA ARRIBAS VALLEJO (1), MARIA EULALIA LOPEZ CAPDEVILA (3)

1. Orthopeadic Surgery, Hospital de la Santa Creu i Sant Pau, BARCELONA, Spain
2. Orthopeadic Surgery, Consorsi Sanitari del Maresme, BARCELONA, Spain
3. Orthopeadic Surgery, Hospital de la Santa Creu i Sant Pau, Barcelona, Spain

Keywords: Plantar fascia, fasciotomy, Hallux Limitus, Percutaneous

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction and Objectives The plantar fascia is key in foot biomechanics. Some studies show increased dorsiflexion of the first metatarsophalangeal joint after plantar fasciotomies.While others argue it can alter the windlass mechanism, possibly resolved by a selective medial band fasciotomy. This study describes the percutaneous section of the BM and its effect on 1MTF mobility. Materials and Methods An anatomical study in 3 phases was conducted on 20 specimens. Phase1: anatomical and photographic study of the plantar fascia in 5 specimens to determine the safest area for MB fasciotomy using the medial sesamoid as reference. Phase2: percutaneous fasciotomy in 11 specimens and subsequent dissection to check the procedure's effectiveness and condition of adjacent structures. Phase3: comparative measurement of the dorsiflexion angle of the 1MTF, before and after fasciotomy, in 20 specimens with a computer program. Statistical analyses were performed using SPSS19. Results Phase1: The main structures at risk were the medial and lateral collateral branches of the medial plantar nerve and the flexor hallucis longus tendon. The average distance to collateral nerve branches from the SM was 32.15mm, establishing 30mm as a safety point. Phase2: Complete percutaneous section in all specimens without injury to adjacent structures, with an average SM-BM distance of 30.92mm. Phase3: The average increase in dorsiflexion was 10.2°, with a statistically significant difference between pre- and post-procedure measurements (p=0.05). Conclusion The percutaneous section of the BM of the plantar fascia increases the DF of the 1MTF, potentially useful for treating hallux limitus and other pathologies.

#42953 : Comparative Meta-Analysis of Clinical Outcomes in Chronic Achilles Ruptures: Isolated FHL Transfer, Hamstring Transfer, and Turndown Flaps

Preferred format : a podium presentation OR a poster presentation

Authors:

Bedri Karaismailoglu (1), Samir Ghandour (2), Joris Hendriks (3), Mani Eftekhari (3), Ehab Eltouny (3), Gregory Waryasz (3), Daniel Guss (3), John Y Kwon (4), Soheil Ashkani-Esfahani (3), Lorena Bejarano-Pineda (3), Christopher DiGiovanni (3)

1. Orthopaedics and Traumatology, Istanbul University-Cerrahpasa, Istanbul, Turkey
2. , Foot and Ankle Research and Innovation Laboratory (FARIL), Department of Orthopaedic Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, USA
3. , Foot and Ankle Research and Innovation Laboratory (FARIL), Department of Orthopaedic Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, USA
4. , Mass General Hospital, Boston, USA

Keywords: chronic achilles rupture, achilles reconstruction, complication, tendon transfer

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Chronic Achilles tendon ruptures (CATR), defined by a delay in diagnosis or treatment exceeding four weeks, often involve retracted tendon ends and adhesions, complicating the treatment. Various surgical techniques, such as flexor hallucis longus (FHL) transfer, turndown flaps, V-Y advancement, and hamstring tendon transfer, have been utilized, each with distinct benefits, limitations, and potential complications. This study aims to perform a meta-analysis comparing different techniques in terms of clinical outcomes and complications. Methods The inclusion criteria consisted of studies reporting clinical outcomes for CATR patients treated with isolated FHL transfer, hamstring tendon transfer, or turndown flaps. Eligible clinical studies had to report at least one of the following outcomes: AOFAS score or complications. Studies were excluded if they were not published in English, had a follow-up period of less than 12 months, or included fewer than ten patients. Results The meta-analysis included eleven studies (295 patients) for isolated FHL transfer, nine studies (168 patients) for hamstring tendon transfer, and six studies (246 patients) for turndown flaps. All groups showed comparable improvements in AOFAS scores. However, the total complication rate for hamstring transfers was significantly lower than that for turndown flaps. The turndown flap group had a significantly higher incidence of wound complications (12.5%) compared to the isolated FHL (5.7%) and hamstring groups (3.5%). Conclusion Although all three techniques resulted in similar improvements in AOFAS scores for CATR management, turndown flaps were associated with a higher incidence of wound complications compared to the other two techniques.

#42954 : Clinical Outcomes of Insertional Achilles Tendinopathy Patients Treated with Reattachment and Dorsal Closing Wedge Calcaneal Osteotomy: A Meta-analysis

Preferred format : a podium presentation OR a poster presentation

Authors:

Bedri Karaismailoglu (1), Ayse Sena Altun (2), Omer Subasi (3), Siddhartha Sharma (4), Matthias Peiffer (3), Soheil Ashkani-Esfahani (3), Christopher DiGiovanni (3), Lorena Bejarano-Pineda (3)

1. Orthopaedics and Traumatology, Istanbul University-Cerrahpasa, Istanbul, Turkey
2. , Bezmi Alem Faculty of Medicine, Istanbul, Turkey
3. , Foot and Ankle Research and Innovation Laboratory (FARIL), Department of Orthopaedic Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, USA
4. , PGIMER, Chandigarh, India

Keywords: insertional achilles tendinopathy, haglund, zadek osteotomy, dorsal closing calcaneal wedge, reattachment

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Debridement and Achilles tendon reinsertion (DATR) has been the most common surgical approach for treating Insertional Achilles Tendinopathy (IAT). Recently, dorsal closing wedge calcaneal osteotomy (DCWCO) has gained popularity as an alternative surgical option. This study aims to systematically review the published literature on both surgical techniques and compare their clinical outcomes and complication rates. Methods We included studies that reported clinical outcomes for IAT patients treated with open DATR or DCWCO. Eligible clinical studies had to report at least one of the following outcomes: AOFAS score or complications. To be included, studies needed to provide sufficient data to extract and pool, including mean values, standard deviations (SD), and the number of subjects. Results The initial search yielded 329 articles. After a full-text review, 15 articles met the inclusion and exclusion criteria. Seven articles included patients who underwent DATR, while eight included patients who underwent DCWCO. For the analysis, seven studies (n=169) were included for DATR, and eight studies (n=227) were included for open DCWCO. Both groups showed similar improvements in AOFAS scores. The overall complication rates were 16.6% in the DATR group and 9.2% in the DCWCO group, but this difference was not statistically significant. However, there was a significantly higher incidence of wound complications in the DATR group (10.1%) compared to the DCWCO group (2.5%). Conclusions Both DATR and DCWCO resulted in similar improvements in AOFAS scores for the management of IAT, but DCWCO was associated with fewer wound complications.

#42957 : Enhancing Precision in Subtalar Fusion: Evaluation of Skin-Matched 3D Patient-Specific Surgical Guides

Preferred format : a podium presentation OR a poster presentation

Authors:

Bedri Karaismailoglu (1), Omer Subasi (2), Wei Shao Tung (2), Gregory Waryasz (2), Daniel Guss (2), Lorena Bejarano-Pineda (2), Christopher DiGiovanni (2), Soheil Ashkani-Esfahani (2), John Y Kwon (3)

1. Orthopaedics and Traumatology, Istanbul University-Cerrahpasa, Istanbul, Turkey
2. , Foot and Ankle Research and Innovation Laboratory (FARIL), Department of Orthopaedic Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, USA
3. , Mass General Hospital, Boston, USA

Keywords: subtalar fusion, patient specific instrumentation, 3d printed, validity

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Subtalar arthrodesis is an effective treatment for subtalar arthritis, but its success relies on precise implant placement. Anatomical variations among patients can make this challenging, leading to longer surgeries, higher complication risks, and increased radiation exposure. This study investigates a novel approach using skin-matched templates to accurately position implants for subtalar arthritis. Methods Twelve cadaveric legs from six donors underwent preoperative CT imaging. Foot bones and skin were segmented, and virtual screw placement was conducted to mimic surgical placement. Skin-matched surgical guides, featuring drill trajectories, were designed and 3D printed. Six feet underwent subtalar arthrodesis using these guides, while the remaining six underwent the procedure without guides by an experienced surgeon. Fluoroscopy usage and the number of repeated attempts were recorded until satisfactory fixation was achieved. Postoperative CT scans compared preoperative plans with actual outcomes, revealing error margins. Results In the guided group, the margin of error for implant trajectory, calculated by comparing virtual plans with postoperative CT scans, was 0.8±0.5 cm. No trajectories in the guided group required re-attempts, indicating satisfactory accuracy. In contrast, the non-guided group required an average of 2.5±2.3 extra attempts, a statistically significant difference ($p<0.01$). Fluoroscopy usage was significantly lower in the guided group compared to the non-guided group ($p<0.01$). Conclusion Skin-matched patient-specific surgical guides effectively achieve accurate fixation trajectories, reducing re-attempts and fluoroscopy usage, thereby shortening overall surgical time. These guides are particularly valuable for less experienced surgeons and patients without significant deformities, facilitating precise placement using superficial bony landmarks on the foot.

#42958 : The Impact of Each Burr Pass on Gap Size and Hindfoot Alignment in Minimally Invasive Zadek Osteotomy

Preferred format : a podium presentation OR a poster presentation

Authors:

Bedri Karaismailoglu (1), Nour Nassour (2), Jessica Duggan (3), Matthias Peiffer (2), Samir Ghandour (4), Lorena Bejarano-Pineda (2), Soheil Ashkani-Esfahani (2), Christopher Miller (3)

1. Orthopaedics and Traumatology, Istanbul University-Cerrahpasa, Istanbul, Turkey
2. , Foot and Ankle Research and Innovation Laboratory (FARIL), Department of Orthopaedic Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, USA
3. , Beth Israel Deaconess Medical Center (BIDMC), Harvard Medical School, Boston, MA, Boston, USA
4. , Foot and Ankle Research and Innovation Laboratory (FARIL), Department of Orthopaedic Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, USA

Keywords: zadek osteotomy, minimally invasive surgery, dorsal closing wedge calcaneal osteotomy, burr pass

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objectives This study aimed to evaluate the effect of each burr pass on gap size and hindfoot alignment in minimally invasive Zadek osteotomy. Materials and Methods Ten cadaveric specimens without evident foot pathology underwent minimally invasive Zadek osteotomy using a 3.1 mm Shannon burr. The osteotomy was initiated anterior to the calcaneal plantar fascia attachment, preserving the plantar cortex, and extended dorsally to the anterior posterosuperior tubercle of the calcaneus. After each burr pass, the defect was closed and subsequent passes were performed. This was repeated five times, with neutral lateral x-rays taken before and after each pass to measure the effect. Measurements were calibrated using a radiological marker and included the defect size created (shortening of the dorsal calcaneal cortex) and changes in foot alignment parameters: Böhler angle, X/Y ratio, and Fowler-Philip angle. Measurements were performed by two observers to ensure reliability. Results The average decrease in dorsal calcaneal cortical length with each burr pass was: 2.1 mm (1st pass), 1.9 mm (2nd pass), 1.6 mm (3rd pass), 1.2 mm (4th pass), and 0.9 mm (5th pass). Böhler angle, X/Y ratio, and Fowler-Philip angle consistently decreased with each burr passage. Conclusion The study revealed trends in length and alignment changes in the hindfoot with each burr pass, assisting surgeons in determining the appropriate number of burr passes needed for specific resections to achieve the desired surgical outcome.

#42959 : Impact of Dorsal Closing Wedge Calcaneal Osteotomy on Hindfoot Alignment and Biomechanics in Patients with Insertional Achilles Tendinopathy

Preferred format : a podium presentation OR a poster presentation

Authors:

Bedri Karaismailoglu (1), Matthias Peiffer (2), Siddhartha Sharma (3), Arne Burssens (4), Daniel Guss (2), Lorena Bejarano-Pineda (2), Christopher DiGiovanni (2), Soheil Ashkani-Esfahani (2)

1. Orthopaedics and Traumatology, Istanbul University-Cerrahpasa, Istanbul, Turkey
2. , Foot and Ankle Research and Innovation Laboratory (FARIL), Department of Orthopaedic Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, USA
3. , PGIMER, Chandigarh, India
4. , Gent University, Gent, Belgium

Keywords: insertional achilles tendinopathy, haglund, zadek osteotomy, dorsal closing calcaneal wedge, 3d model

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Dorsal closing wedge calcaneal osteotomy (DCWCO) is believed to enhance the biological and mechanical aspects of insertional Achilles tendinopathy (IAT) by altering insertional anatomy. However, the biomechanical impacts of shifting the Achilles insertion are not fully understood. Methods Six weightbearing ankle-CTs from IAT patients were segmented, and standardized planes were used to perform DCWCOs with six variations, resulting in 42-foot models. Two plantar osteotomy starting points were defined: 1 cm anterior to the plantar calcaneal tubercle (posterior osteotomy) and 2 cm anterior (anterior osteotomy). Osteotomies extended to 1-cm anterior of the posterosuperior calcaneal tuberosity with 6-, 10-, or 14-mm dorsal wedges. Pre-defined Achilles insertion points were used to create computational models. Automated measurements calculated changes in foot alignment and biomechanics. Results Both anterior and posterior osteotomies decreased lateral talocalcaneal and calcaneal pitch angles, more significantly with the anterior osteotomy ($p=0.028$). The distance change between the Achilles tendon and Haglund's deformity was greater with posterior osteotomy using 6- and 10-mm wedges compared to the anterior ($p=0.028$). Anterior osteotomy significantly decreased the Böhler angle ($p<0.001$). For patients with a preoperative Böhler angle less than 30°, the decrease was also significant with posterior osteotomy ($p=0.004$). Subtalar joint orientation changed up to 3.8° with anterior osteotomy, and the decrease in G-S power was 2-3% overall. Conclusion Posterior osteotomy provides more Achilles decompression, while anterior osteotomy negatively affects foot alignment more. DCWCO can alter subtalar joint orientation and increase joint loads. The reduction in G-S power was minimal, likely having a limited clinical impact.

#42960 : Five-year and extended postoperative outcomes of hallux valgus surgery: patient satisfaction and radiological results in a retrospective cohort study

Preferred format : a podium presentation OR a poster presentation

Authors:

Mikaela Engaras Hamre (1), Fredrik Nilsen (2), Marius Molund (2)

1. orthopedic department, Østfold hospital trust, Grålum, Norway
2. orthopedic department, Østfold hospital trust, Fredrikstad, Norway

Keywords: Hallux Valgus, Surgery, Long-Term Outcomes, Patient Satisfaction, Radiological Recurrence, Retrospective Study, MOxFQ

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Abstract: Background: Hallux valgus surgery is a common procedure with varying long-term satisfaction and radiological outcomes. This study evaluates patient-reported outcomes and radiological results with a minimum follow-up of five years postoperatively. Methods: This retrospective cohort study included patients who underwent hallux valgus surgery between 2016 and 2018 at Østfold Hospital Trust. Patient satisfaction was assessed using the Manchester-Oxford Foot Questionnaire (MOxFQ), Likert scale, and Visual Analog Scale (VAS). Radiological outcomes were evaluated through imaging a minimum of five years postoperatively. Results: 98 patients (100 feet) underwent a Chevron osteotomy. A total of 77 feet had no deformity, 16 had mild deformity, and 7 had moderate hallux valgus deformity on the five-year postoperative x-ray. Mean MOxFQ index score was 15,2 (SD 17, 22). No statistically significant difference in mean MOxFQ index scores was found among the groups (p=0.61). On the Likert scale, 23% reported satisfaction and 58% high satisfaction at five years. Conclusion: Five years post-surgery, high patient satisfaction was observed regardless of residual deformity. Although some radiological recurrence was noted, it did not significantly impact patient-reported outcomes. These findings suggest satisfaction is influenced by factors beyond radiological appearance. We are currently conducting a prospective study to identify these factors, with the goal of optimizing surgical decision-making and techniques for better long-term outcomes.

#42963 : Checkrein deformity managed by midfoot Flexor Hallucis Longus Z-Plasty: A Case Report

Preferred format : an ePoster Displayed

Authors:

Ana Rosa Trapote Cubillas (1), Marcos González Alonso (2), Francisco Madera Gonzalez (3), Oscar Fernández Hernández (3), Jaime Antonio Sánchez Lázaro (3)

1. Unidad de Pie y Tobillo, Hospital Universitario de León, Leon, Spain
2. , Hospital Universitario de León , León , Spain
3. Unidad de Pie y Tobillo, Hospital Universitario de León, León, Spain

Keywords: Checkrein deformity, Flexor hallucis longus, Hallux, Z-plasty

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Checkrein deformities are rare and involve entrapment of the flexor hallucis longus (FHL) tendon in the posterior foot, just proximal to the flexor retinaculum of the ankle. In most cases, a checkrein deformity occurs secondary to trauma or following surgery. It has been suggested that the FHL tendon tethers or entraps scar tissue or fracture sites. This dynamic deformity caused the patient significant trouble walking and playing sports as in the stance phase of gait the toes were forced into maximum plantar flexion and ended up trapped under the foot. Surgical management is usually required in severe cases. Various surgical options are available for the correction of checkrein deformities. Case Report: We present the case of a 40-year-old male who attended with complaint of clawing of his great toe. A history of previous open reduction and internal fixation for ankle fracture was described 5 years back, implant removal 3 years ago and exploration of FHL 1 year ago, with release of the adhesions, but the deformity still occurs. The patient underwent successful surgical correction with exploration of FHL tendon with releasing adhesions of muscle belly and a z-plasty with a pulvertaft suture at the midfoot. Correction was achieved, with complete range of motion of the hallux and remission of the symptoms. Conclusion: Checkrein deformities are rare and involve entrapment of FHL tendon in the posterior foot. It is an important complication of tibial fracture, which can be managed by midfoot Z-plasty, as mentioned in our case, especially in recurrence cases.

#42964 : Calcaneum Fracture Operative Decision making and Outcomes - An Experience from a Large Major Trauma Centre

Preferred format : a podium presentation OR a poster presentation

Authors:

Ben Gabbot (1), Isabella Drummond (1), Prashant Singh (2), Francesc Malagelada (1), Lucky Jeyaseelan (1), Amit Patel (1)

1. , Barts Health NHS Trust, London, United Kingdom
2. Trauma and Orthopaedic Surgery, Barts Health NHS Trust, London, United Kingdom

Keywords: calcaneal fractures, complications, polytrauma, complications

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Calcaneal fractures are associated with significant morbidity. Conservative treatment typically results in poor outcomes. Surgical intervention aims to restore the calcaneal anatomy but is associated with complications. This study presents the outcomes of calcaneal fractures treated a major trauma centre (MTC). Methods: Retrospective study of all calcaneal fractures treated at our centre between 2017-2021. Patients with calcaneal fractures over the age of 18 and minimum of 6 month follow up data were included. Demographic information and details of fracture classification, associated injuries, and patient outcomes were collected. The primary analysis examined the association between fracture classification and the likelihood of operative intervention. Secondary analysis identified risk factors using multiple logistic regression for poor surgical outcomes, complications and revision surgery. Results: 170 fractures were included, of which 97 (57.1%) were intra-articular and 48/170 (28.2%) underwent surgery. The most common associated injuries included fractures of the lumbar vertebrae (43/170, 25.3%), and ipsilateral foot (41/170, 24.1%). Low Böhler's angle (<17.7 degrees) and Sanders classifications 3 and 4 were more likely to have undergone operative management (31/60, 51.7%). The overall complication rate following surgery was 21.3%. Open fractures and smoking status were associated with a higher complication rate and revision surgery, although not statistically significant. Discussion: This study highlights the importance of comprehensive assessment beyond radiological indicators. Whilst classifications can guide management decisions, they should not be used in isolation. Open fractures and smoking status are notable risk factors for complications. Further research is needed to refine operative decision-making criteria.

#42966 : Pseudarthrosis or(s) vesalianum?

Preferred format : a podium presentation OR a poster presentation

Authors:

Leonardo Miraldo (1), Tiago Roseiro (1), Gonçalo Dos Santos (1), Diogo Gameiro (1), Fabio Fernandes (1), Emanuel Seiça (1), Jose Corte Real (1)

1. Orthopedics, Hospital Distrital da Figueira da Foz, Figueira da Foz, Portugal

Keywords: Ossicle, Os, Vesalianum

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The foot and ankle exhibit numerous anatomical variations, including multiple accessory ossicles. Os Vesalianum pedis (OVP), first described by Vesalius, is a rare accessory ossicle near the base of the fifth metatarsal, typically within the peroneus brevis (PB) tendon, due to failed fusion of the secondary ossification center. Its prevalence is about 0.1-1%, often bilateral and asymptomatic, but it can cause lateral foot pain. Differential diagnosis includes fifth metatarsal base fracture, Iselin's disease, and stress fractures. Diagnosis is typically made via AP and lateral X-rays, with CT and MRI providing further clarity, and an anatomopathological (ANP) report offering definitive confirmation. We present a 57-year-old female with a history of recent debilitating lateral right foot pain and a previous inversion trauma. Examination revealed local tenderness and slight exostosis at the base of the fifth metatarsal without Celsus signs. X-rays indicated a possible 5th metatarsal base pseudarthrosis/OVP, and while CT and MRI were inconclusive, they suggested pseudarthrosis. After unsuccessful medical treatment, surgical exploration was performed via a direct lateral approach to the 5th metatarsal. A 20 mm x 20 mm accessory ossicle with a cartilage cap and partial PB insertion with tendinosis was found and resected, along with tendinosis debridement. The remaining tendon insertion was healthy, requiring no further procedures. The ANP report confirmed OVP. At a 6-month follow-up, the patient was pain-free and able to resume daily activities and recreational sports. This case highlights the challenges of diagnosing and treating unilateral OVP and its successful surgical resolution after failed initial treatment.

#42967 : Early outcome of surgical treatment using sinus tarsi approach with variable angle locking plate for calcaneal fracture involving intra articular lesion

Preferred format : an ePoster Displayed

Authors:

YEOKGU HWANG (1)

1. Orthopedic surgery, EWHA WOMANS UNIVERSITY SEOUL HOSPITAL, Seoul, Republic of Korea

Keywords: Calcaneus fracture, Minimal invasive surgery, sinus tarsi approach

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction In recent years, minimally invasive surgery have been reported to reduce postoperative complications and to have the same surgical outcomes. However, there is still no clear criteria for the choice of internal fixation after anatomical reduction. Therefore, this study estimate to report thel results of internal fixation using a multidirectional locking plate with a minimally invasive tarsal sinus approach in intra-articular calcaneal fractures. Methods A total of 24 patients were treated surgically for 24 patients were diagnosed with type II and III of the Sanders classification. Postoperative CT was used to assess the reduction status after surgery, Bohler angle and Gissane angle were measured on x-ray and CT results measured step-off and fracture gap of the posterior articular surface. Clinical assessments examined subjective pain levels (Visual analog scale for pain (VAS), length of hospital stay, and postoperative complications. Results The mean duration of bony union was observed at 7.8 weeks after surgery (range 6-12 weeks). Changes in calcaneus length and width were confirmed to be within 10% compared to unaffected side, and there were no complications such as non-union and postoperative infection. No significant difference was observed in imaging evaluation compared to unaffected side, and a step of more than 1 mm and fracture spacing of more than 3 mm were observed in two cases on postoperative CT examination. The average length of hospital stay was 4.6±1.8 days. Conclusions Minimally invasive reduction using the tarsal sinus approach followed by internal fixation with multidirectional locking plates can achieve satisfactory results.

#42969 : Different effects of superficial versus deep deltoid ligaments injury on ankle stability in a pronation external rotation type fracture model: preliminary results of a cadaveric study.

Preferred format : a podium presentation OR a poster presentation

Authors:

Panagiotis Christidis (1, 2), Georgios Christidis (3), Vasileios Lampridis (4), Alexis Kermanidis (5), Aristeidis Zibis (2), Nikolaos Gougoulias (6, 7)

1. , Frimley Health NHS Foundation Trust, Camberley, United Kingdom
2. , University of Thessaly, Larissa, Greece
3. , General Hospital of Katerini, Katerini, Greece
4. , Liverpool Teaching Hospitals NHS Foundation Trust, Liverpool, United Kingdom
5. , University of Thessaly, Volos, Greece
6. Department of Trauma & Orthopaedics, General Hospital of Katerini, Katerini, Greece
7. Department of Orthopedic Surgery, Firmley Health NHS Foundation, Firmley Park Hospital, London, United Kingdom

Keywords: ankle fracture, pronation, external rotation, deltoid ligament, weight bearing CT, cadaveric

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Pronation external rotation (PER) ankle injuries are associated with damage to the deltoid ligament and “high fibular” fractures. The different effect of superficial vs. deep deltoid ligament injury on ankle stability, has not been investigated in the setting of PER fractures. Material & Methods: Four cadaveric specimens were tested with manipulation and using an axial loading machine with a force of 750N, after lesions to bone and soft tissues were induced. Two specimens had the following sequence of lesions: 1) superficial deltoid ligament (SDL), 2) deep deltoid ligament (DDL), 3) anterior inferior tibiofibular ligament (AiTFL), 4) interosseous membrane (IOM) and, 5) high fibular fracure (Weber C). The other two specimen had the following lesions: 1) SDL, 2) AiTFL, 3) IOM, 4) Weber C fracture, and 5) DDL. Clinical photographs and videos were recorded and Computerised Tomography (CT) imaging was obtained after each lesion was induced. Results: The observations were consistent between the specimens in each group. No loss of ankle congruity was observed on CT after axial loading in isolated SDL lesions and/or SDL lesions in combination with syndesmotic injury. Addition of DDL lesion resulted in talar tilt and ankle subluxation, irrespective to the type of syndesmotic lesion. Talar dislocation was recorded only with the co-existence of DDL lesion and high fibular fracture. Conclusions: Isolated SDL injuries did not disrupt the stability of the ankle joint. In contrast, DDL in combination with syndesmosis lesions caused ankle instability and subluxation. DDL lesion and fibula fracture resulted in ankle dislocation.

#42970 : Improvement in clinical outcomes following arthroscopic all-inside medial lateral ligament reconstruction for rotational ankle instability

Preferred format : a podium presentation

Authors:

Thomas Lewis (1), Joe Ayathamattam (1), Vikramman Vignaraja (2), Mikel Dalmau-Pastor (3), Gabriel Ferreira (4), Gustavo Nunes (5), Robbie Ray (1)

1. , King's College Hospital NHS Trust, London, United Kingdom
2. , NHS, King's College Hospital NHS Trust , United Kingdom
3. , University of BArcelona, barcelona, Spain
4. , Foot and Ankle Surgery Group, Orthopaedics and Traumatology Unit, Prevent Senior, , Sao Paolo, Brazil
5. , COTE Brasília Clinic, Foot and Ankle Unit, Brasilia, Brazil

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Purpose: Rotational ankle instability can be diagnosed in up to 18% of cases of chronic ankle instability. It is caused by injury to the deltoid ligament secondary to chronic deficiency of the lateral collateral ligament. This prospective observational study aimed to investigate clinical outcomes following arthroscopic all-inside medial and lateral ligament reconstruction for rotational ankle instability. Methods: A prospective observational study of consecutive patients undergoing arthroscopic all-inside medial and lateral ligament reconstruction with minimum 6-month follow-up. The primary outcome was a validated patient-reported outcome measure (PROM), the Manchester-Oxford Foot Questionnaire. Secondary outcomes included EQ-5D, European Foot and Ankle Society score and complications. Results: Between 2020 and 2023, 12 patients underwent primary reconstruction for rotational ankle instability with pre-and post-operative PROMs collected. The mean ± standard deviation age was 33.9 ± 7.2 years + mean follow-up was 1.9 ± 1.2 (range: 0.5–3.8, interquartile range: 0.9–3.0) years. There was a significant improvement in all Manchester-Oxford Foot Questionnaire scores ($p < 0.05$): Index 53.1 ± 19.1 to 26.4 ± 27.6, Pain 46.7 ± 20.3 to 26.2 ± 26.8, Walking/Standing 58.7 ± 26.0 to 27.0 ± 30.0 and Social Interaction 51.2 ± 19.5 to 25.6 ± 30.1. There were improvements in EQ-5D-5L Index, VAS and VAS Pain. There was one complication—a superficial peroneal nerve injury which resolved with corticosteroid injection. Conclusion: The arthroscopic all-inside medial and lateral ligament reconstruction technique is a reliable and safe method for treating rotational ankle instability, demonstrating significant improvement in PROMs at a mean 1.9-year follow-up.

#42971 : Osteochondral Lesions of the Ankle: Autologous Osteochondral Transplantation from the Knee. Clinical and Functional Outcomes of the Donor and Recipient Sites.

Preferred format : a podium presentation OR a poster presentation

Authors:

Julieta Brue (1), Virginia Cafruni (2), Ana Cecilia Parise (2), Julian Parma (2), Pablo Sotelano (2), Daniel Villena (2), Leonardo Conti (2), Nelly Marina Carrasco (2), Maria Gala Santini Araujo (2)

1. Foot and Ankle - Orthopedics, Hospital Italiano de Buenos Aires, Ciudad Autonoma de Buenos Aires, Argentina
2. Foot and Ankle - Orthopedics, Hospital Italiano de Buenos Aires, Buenos Aires, Argentina

Keywords: OATS, Osteochondal lesion, Ankle, Knee, Knee to ankle

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction:Autologous Osteochondral Transplantation (OAT) effectively treats talus osteochondral lesions, enhancing functionality and promoting a return to sports. This study evaluates clinical and functional outcomes, complications, and patient satisfaction post-OAT, and examines the return to work and sports. Methods: Observational, retrospective study. Includes patients treated with OAT for talus osteochondral lesions from 2011 to 2022. Inclusion criteria: Patients over 18, minium one year of follow-up. Exclusion criteria: Previous ipsilateral knee pain or surgery, infections, advanced osteoarthritis, rheumatologic diseases. Demographics, injury mechanism, sports activity, lesion details, associated procedures, consolidation time, follow-up, and return to activities were recorded. Clinical outcomes were assessed using AOFAS, Lysholm, Tegner, VAS scores. Patient satisfaction, return to sports, and complications were evaluated. Statistical significance was $p < 0.05$. Results: 37 patients (median age 36, 78.37% male), median follow-up was 24 months. Lesions were primarily sports-related and medially located, with a median area of 150mm^2. Postoperative outcomes showed significant improvement: AOFAS ankle scores increased from 54.45 to 95.81, and ankle VAS scores decreased from 7 to 1.59. Knee VAS and Lysholm scores averaged 1.81 and 98.78, respectively. Return to work averaged 2.29 months, and return to sports 6.53 months, with 37.5% changing sports activity. Tegner scores slightly improved from 5.4 to 5.45. Complications were minimal, with one case of knee hemarthrosis and one anterior ankle arthroscopy. Conclusion: OAT for talus chondral lesions is a safe and effective treatment with positive clinical outcomes, low complication rates, high satisfaction, and a high return to sports, without increased knee morbidity.

#42972 : Proximal intermetatarsal angle behavior in percutaneous surgery: META vs MICA

Preferred format : a podium presentation OR a poster presentation

Authors:

Julieta Brue (1), Virginia Cafruni (2), Ana Cecilia Parise (2), Julian Parma (2), Pablo Sotelano (2), Leonardo Conti (2), Daniel Villena (2), Nelly Marina Carrasco (2), Maria Gala Santini Araujo (2)

1. Foot and Ankle - Orthopedics, Hospital Italiano de Buenos Aires, Ciudad Autonoma de Buenos Aires, Argentina
2. Foot and Ankle - Orthopedics, Hospital Italiano de Buenos Aires, Buenos Aires, Argentina

Keywords: MIS, Hallux valgus, META, MICA

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction:Etiology of hallux valgus (HV) deformity remains controversial, with hypermobility of the first metatarsal-cuneiform (MTC) joint as a contributing factor. A greater intermetatarsal angle of the proximal fragment (IAPF) could enhance MTC joint stability. This study compares postoperative results and IAPF in MIS techniques: Metaphyseal Extra-Articular Transverse and Akin Osteotomy (META) and Chevron-Akin (MICA). It also analyzes the IAPF and the distance between the first and second metatarsals (Dist 1-2) and the association between the proportion of displacement of the first metatarsal head and IAPF. Methods:Patients with moderate to severe HV who underwent META or MICA between 2017 and 2022 were retrospectively reviewed. Full-weight bearing radiographs assessed hallux valgus angle (HVA), intermetatarsal angle (IMA), IAPF, Dist 1-2, and percentage of metatarsal head displacement pre- and postoperatively. Patients were grouped by displacement: over 75% and under 75%. Results:META group included 38 female patients (95%) with a median age of 55. MICA group included all female patients with a median age of 58. Both groups showed significant increases in IAPF and Dist 1-2 postoperatively. No significant differences were found between META and MICA groups, except for preoperative Dist 1-2 being higher in the META group. Higher IAPF was not associated with greater head displacement. Conclusion:META and MICA are effective for correcting moderate to severe HV, significantly increasing IAPF and Dist 1-2, contributing to MTC joint stability. Head displacement did not significantly impact IAPF. Future research should focus on long-term outcomes, particularly arthritis development and postoperative symptoms like recurrence or MTC joint pain.

#42973 : Treatment of Progressive Collapsing Foot Deformity 1AB: Comparison of outcomes with and without medial ligament-tendon complex reconstruction

Preferred format : a podium presentation OR a poster presentation

Authors:

Julian Parma (1), Ana Cecilia Parise (1), Julieta Brue (2), Virginia Cafruni (1), Pablo Sotelano (1), Daniel Villena (1), Leonardo Conti (1), Nelly Marina Carrasco (1), Maria Gala Santini Araujo (1)

1. Foot and Ankle - Orthopedics, Hospital Italiano de Buenos Aires, Buenos Aires, Argentina
2. Foot and Ankle - Orthopedics, Hospital Italiano de Buenos Aires, Ciudad Autonoma de Buenos Aires, Argentina

Keywords: PCFD, Progressive collapsing foot deformity. Medial ligament-tendon complex.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction:Progressive collapsing foot deformity (PCFD) 1AB, characterized by hindfoot valgus, forefoot abduction, and medial longitudinal arch collapse, significantly impairs patient mobility and quality of life. Surgical interventions commonly include medial displacement calcaneal osteotomy (MDCO) and lateral column lengthening (LCL), with medial ligament-tendon complex (MLTC) reconstruction. Some authors have proposed treating this pathology without MLTC reconstruction. This study compares clinical and radiological outcomes between two groups treated with MDCO and LCL with and without MLTC reconstruction. Methods: Retrospective. 36 patients with PCFD 1AB who underwent MDCO and LCL, with or without MLTC reconstruction, between 2012 and 2022. Patients were divided into two groups: Group 1 (n=13) received only MDCO and LCL, Group 2 (n=23) received MDCO, LCL, and MLTC reconstruction. Radiological parameters and AOFAS scores were assessed preoperatively and postoperatively at multiple intervals. Results:Both groups showed significant improvement in radiological parameters postoperatively. Group 2 demonstrated greater improvement in calcaneal pitch, medial column height, and talus-first metatarsal angles than Group 1. Conversely, Group 1 had a significant improvement in external column length. As measured by the AOFAS scale, functional outcomes improved significantly in both groups, with no significant difference in clinical outcomes between the groups. Complications included persistent pain, osteosynthesis material intolerance, wound dehiscence, and pseudarthrosis. Conclusion:Combining bony corrections with MLTC reconstruction yields superior radiological outcomes compared to bony corrections alone. However, functional improvements were comparable between both surgical approaches. Further long-term multicenter studies are needed to refine surgical strategies for PCFD 1AB.

#42974 : A novel treatment of end stage adult hallux rigidus with distal oblique osteotomy and autologous matrix induced chondrogenesis: A case report

Preferred format : an ePoster Displayed

Authors:

Wenxian Png (1), Cher Eric (2), Ow Zachariah (1), Singh Inderjeet (2)

1. Orthopaedic surgery, Sengkang general hospital, Singapore, Singapore
2. Orthopaedic surgery, Sengkang general hospital, Singapore , Singapore

Keywords: Hallux rigidus, chondrogenesis, distal oblique osteotomy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

End stage or grade 3 hallux rigidus is a debilitating condition in patients presenting with pain and stiffness in their great toe. Traditionally, fusion of the first metatarsalphalangeal joint (MTPJ) is performed. We present a novel technique of joint preservation even with end stage arthritis using a distal oblique osteotomy with autologous matrix chondrogenesis. The patient was a 60 year old male presenting with pain and stiffness over his great toe. Radiographic analysis reveals a end stage hallux rigidus with dorsal osteophyte and a severe loss of joint space. The patient was keen to maintain function and range of his great toe as he was an avid mountain climber. He subsequently underwent an open cheilectomy, distal oblique osteotomy to decompress the first MTPJ. The joint was prepared and all damaged cartilage removed. Nanofracture was performed and a chondrogide scaffold with bone marrow aspirate concentrate was used to patch the joint surface. Post-operatively the patient was allowed weight bearing on a forefoot offloading shoe. He was followed up at 6mths and 12mths with measurement of VAS pain scores and AOFAS hallux score showing an improvement compared to preoperatively. Radiographic and clinical union of the osteotomy was attained at 6 months with the first MTPJ showing a preservation of some joint space. The patient was able to resume his pre morbid activities quite symptom free. This case reports demonstrates a successful joint preservation with a distal oblique osteotomy and chondral matrix implantation technique for end stage hallux rigidus negating the for fusion.

#42975 : Glycated albumin is a more effective glycemic marker than glycated hemoglobin (HbA1c) for predicting adverse outcomes after amputation in diabetic foot patients.

Preferred format : a podium presentation OR a poster presentation

Authors:

YEOKGU HWANG (1)

1. Orthopedic surgery, EWHA WOMANS UNIVERSITY SEOUL HOSPITAL, Seoul, Republic of Korea

Keywords: Diabetic foot, Glycated albumin,Amputation

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Aims The optimal marker for evaluating glycemic control before diabetic foot surgery is still unclear. This study aimed to evaluate the effectiveness of glycated albumin versus glycated hemoglobin (HbA1c) in predicting early complications after amputation and to identify the threshold level at which the risk of complications significantly increases. Patients and Methods Patients were assessed for glycated albumin and HbA1c levels within 30 days before surgery. Complications, including uncontrolled infection, wound issues, re-amputation and re-operation were monitored for 4 weeks post-surgery. The ROC curve was employed to establish the cut-off values for glycated albumin and HbA1c linked to complications. Additionally, two HbA1c thresholds, 6.5% and 7.5%, were compared with glycated albumin to evaluate their effectiveness in predicting complications. Results In total, 79 patients participated in the study. A glycated albumin level of 22.8% was identified as the optimal cut-off for predicting complications. Patients with glycated albumin levels above 22.8% were 2.86 times more likely to develop uncontrolled infections compared to those with lower levels ($p = 0.001$). The rates of re-amputation and re-operation were 2.4 and 3.6 times higher, respectively, in patients with glycated albumin above the threshold ($p = 0.006$ and $p = 0.037$). These associations remained statistically significant in multiple regression analysis. In contrast, an HbA1c level above 7.5% was significant correlation with complications. Conclusion Glycated albumin is a reliable and highly effective predictor of complications following amputation in diabetic foot patients, and for those with levels above 22.8%, strict glycemic control before surgery is crucial.

#42976 : Case of Treatment of chronic opened wound due to osteomyelitis on heel with simultaneous orthopedic surgery and reconstructive surgery

Preferred format : a podium presentation OR a poster presentation

Authors:

YEOKGU HWANG (1), SEUNGEUN HONG (2)

1. Orthopedic surgery, EWHA WOMANS UNIVERSITY SEOUL HOSPITAL, Seoul, Republic of Korea
2. Department of Plastic and Reconstructive surgery, Ewha Womans University Seoul Hospital, Seoul, Republic of Korea

Keywords: Osteomyelitis, reconstructive, surgery

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Purpoose Chronic osteomyelitis is a long-standing and persistent inflammation of the bone. It often indicates a chronic and deep-seated infection. Surgical treatment typically requires a multidisciplinary approach involving orthopedic surgeons, infectious disease specialists, and wound care experts. Methods A 51-year-old male patient presented with open wound exhibited both discharge and malodor. The infected and melted Achilles tendon was externally exposed, and tenderness and heating sense were observed in the calcaneus. On a simple radiographic examination, evidence of bone destruction around achilles tendon attaches to the calcaneus was observed. The MRI results revealed osteolysis with the presence of an intraosseous abscess and the formation of a sinus tract at the calcaneal tuberosity. Results Orthopedic surgeon performed a reconstruction of the calcaneus, which included bone debridement and the application of bone cement along with antibiotics. Subsequently, the infected portion of the Achilles tendon was excised, and lengthening of the remaining Achilles tendon, along with reconstruction using the flexor hallucis longus tendon, was performed. For the opened wound, a plastic surgeon perform reconstruction surgery using a 5 x 16 cm anterolateral thigh musculocutaneous free flap from the same side. Conclusion In our case, the treatment of chronic osteomyelitis with accompanying sinus track in the heel involves not only orthopedic surgical procedures but also simultaneous soft tissue reconstruction surgeries for the restoration of exposed bones, tendons, and other structures. Considering the excellent outcomes observed, the option of actively incorporating soft tissue reconstruction surgery should be strongly considered in the management of such cases.

#42978 : Is perioperative use of a combination of pregabalin and naproxen superior to naproxen only in reducing pain in ankle fractures? A prospective, randomized, multicenter study

Preferred format : a podium presentation

Authors:

Dong Woo Shim (1), Wonwoo Lee (2), Yeokwon Yoon (2), Kwang Hwan Park (2), Seung Hwan Han (2)

1. , , Seoul, Republic of Korea
2. , Severance Hospital, Seoul, Republic of Korea

Keywords: ankle fracture, pain, pregabalin, naproxen, perioperative use

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Purpose: To compare the analgesic efficacy, adverse effects, and long-term functional outcomes of perioperative naproxen alone versus naproxen with pregabalin for treating pain in ankle fractures. Methods: This study included 70 patients who underwent operative fixation of rotatory ankle fractures. Group A received naproxen 500mg only, and Group B received naproxen 500 mg with pregabalin 75 mg 2-hour before surgery and 12 hourly for 14 days thereafter. The minimal clinically important difference of the visual analog scale (VAS) for pain was set at 1.8 out of 10. VAS for pain, opioid consumption, and any adverse effects were recorded for 3 days postoperatively. VAS for pain was checked at 2- and 6-weeks and 3- and 6-months, and functional outcomes were measured at 3- and 6-months postoperatively. Results: Sixty-three patients (33 and 30 in groups A and B, respectively) completed the 6-month follow-up. Demographic data were similar between groups. VAS for pain did not significantly differ between the groups at any timepoint up to 6 months ($P \geq 0.520$), with 95% confidence intervals consistently within 1.8. No significant differences were observed between groups in opioid consumption and functional outcomes ($P \geq 0.211$). In group B, dizziness at 48-hour and somnolence at 72-hour were significantly predominant ($P \leq 0.05$). Conclusion: Our study demonstrated comparable pain reduction between two groups following operative fixation of rotatory ankle fractures. However, side effects, including dizziness and somnolence, were predominant in Group B between 48–72 hour.

#42979 : ARTHROSCOPIC MICROFRACTURE AND ASSOCIATED TECHNIQUES IN THE TREATMENT OF OSTEOCHONDRAL LESIONS OF THE TALUS: A SYSTEMATIC REVIEW AND METANALYSIS.

Preferred format : a podium presentation OR a poster presentation

Authors:

Susanna Basciani (1), Simone Santini (2), Gianluca Marineo (3), Marco Donantoni (1), Dario Martinelli (1), Marinozzi Andrea (1)

1. , Policlinico Fondazione Campus Biomedico, Rome, Italy
2. , Policlinico Fondazione Campus Biomedico, Roma, Italy
3. , Policlinico Fondazione Campus Biomedico, Rome, Italy

Keywords: Ankle, Osteochondral lesion, Talus, Ankle arthroscopy, PRP, Hyaluronic Acid, Bone Marrow cells

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Osteochondral lesions of the talus are common in patients suffering even minor trauma; timely diagnosis and treatment can prevent the development of early osteoarthritis. The objectives of this systematic review and meta-analysis were to evaluate the effects of additional procedures on arthroscopic ankle microperforations for osteochondral lesions. Methods A systematic literature search was conducted using PubMed-Medline, Cochrane Central, and Google Scholar to select clinical studies analyzing the efficacy of platelet-rich plasma (PRP), hyaluronic acid (HA), and bone marrow concentrate (BMC) procedures. Ten articles following PRISMA guidelines with a total of 464 patients were included in this review. Quality assessment using MINORS was performed, and all studies demonstrated high quality. Results The results of the systematic review showed benefits in all patients undergoing infiltrative therapy with PRP, hyaluronic acid, and BMC. The best results in terms of AOFAS score and VAS scale were found in patients undergoing PRP injection. The meta-analysis showed improvements in pain relief and return to daily activities in patients undergoing arthroscopic microperforations and PRP, although not reporting statistically significant results ($p = 0.42$). Conclusion All treatment strategies reported better scores compared to the control groups. Among the various treatments analyzed, the addition of PRP appears to be the most valuable probably for the larger population receiving this treatment, showing excellent outcomes in pain reduction, clinical outcomes, and return to daily activities.

#42981 : CURRENT CONCEPTS IN ANKLE MICROINSTABILITY AND ANKLE FUNCTIONAL INSTABILITY

Preferred format : a podium presentation OR a poster presentation

Authors:

Susanna Basciani (1), Simone Santini (2), Matteo Guelfi (3), Biagio Zampogna (1), Gianluca Marineo (4), Dario Martinelli (1), Marco Donantoni (1), Marinozzi Andrea (1)

1. , Policlinico Fondazione Campus Biomedico, Rome, Italy
2. , Policlinico Fondazione Campus Biomedico, Roma, Italy
3. , Clinica Montallegro, Genova, Italy
4. , Policlinico Fondazione Campus Biomedico, Rome, Italy

Keywords: Ankle, instability, arthroscopy, Osteochondral lesions

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Ankle microinstability (AM) is often an underdiagnosed condition resulting from injury to the superior bundle of the anterior talofibular ligament (ATFL) without evident laxity on physical examination. Various modifiable and nonmodifiable risk factors influence ankle stability, such as sports activity, BMI, strength deficits, age, axial deformities, previous trauma, and congenital joint laxity. The proprioceptive alteration, in addition to ligament damage, plays a significant role in functional ankle instability. Research has shown that individuals with a history of ankle injury experience deficits in proprioception, leading to an increased risk of new ankle sprains. Diagnosis and treatment Diagnosing AM can be challenging, as clinical examination may not reveal significant laxity. Stress radiography and arthrometry are valuable tools for assessing ankle laxity. Magnetic resonance imaging (MRI) helps evaluate associated injuries and cartilage damage, although it may not always detect small superior fascicle ATFL lesions. Arthroscopy remains the gold standard for diagnosing and treating microinstability and associated injuries. Conservative treatment is the initial approach. Surgical treatment is considered when conservative measures fail. Different surgical procedures, are available to address the type and severity of ATFL injury. The choice of procedure depends on the specific patient and injury characteristics. Conclusion In conclusion, AM is a challenging condition that can lead to various ankle problems. Diagnosis and treatment require a comprehensive approach, considering the type and severity of the injury, associated pathologies, and individual patient factors. Further long-term studies are needed to refine treatment strategies for different ATFL lesions.

#42982 : Particulated autologous cartilage transplantation (PACT) for the treatment of osteochondral lesion of the talus: can the lesion cartilage be recycled?

Preferred format : a podium presentation

Authors:

Dong Woo Shim (1), Wonwoo Lee (2), Yeokwon Yoon (2), Kwang Hwan Park (2), Seung Hwan Han (2), Jin Woo Lee (2), Bom Soo Kim (3)

1. , , Seoul, Republic of Korea
2. , Severance Hospital, Seoul, Republic of Korea
3. , Inha University hospital, Incheon, Republic of Korea

Keywords: osteochondral lesion of talus, particulated autologous cartilage transplantation, regeneration, short-term outcome

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Aims: Osteochondral lesions of the talus (OLT) are a common cause of disability and chronic ankle pain. Many operative treatment strategies have been introduced, however, they have their own disadvantages. Recently lesion repair using autologous cartilage chip has emerged therefore we investigated the efficacy of particulated autologous cartilage transplantation (PACT) in OLT. Methods: We retrospectively analyzed 32 consecutive symptomatic patients with OLT who underwent PACT with minimum 1-year follow-up. Standard preoperative radiography and magnetic resonance imaging (MRI) were performed for all patients. Follow-up second-look arthroscopy or MRI was performed with patient consent approximately 1 year postoperatively. Magnetic resonance Observation of Cartilage Repair Tissue (MOCART) score and International Cartilage Repair Society (ICRS) grades were used to evaluate the quality of the regenerated cartilage. Clinical outcomes were assessed using the pain Visual Analog Scale (VAS), Foot Function Index (FFI), and Foot Ankle Outcome Scale (FAOS). Results: All patients had ICRS grade IV cartilage lesions, except for one (ICRS grade III). The paired MOCART scores significantly improved from 42.5 ± 1.53 to 63.5 ± 22.6 ($P = 0.025$) in 10 patients. Seven patients agreed to undergo second-look arthroscopy; 5 patients had grade I (normal) ICRS scores and 2 patients had grade II (nearly normal) ICRS scores. VAS, FFI, and all subscales of FAOS were significantly improved postoperatively ($P \leq 0.003$). Conclusion: PACT significantly improved the clinical, radiological, and morphological outcomes of OLT. We consider this to be a safe and effective surgical method based on the short-term clinical results of this study.

#42985 : The Impact of Tibiofibular overlap on Postoperative Plantar Pressure in Trimalleolar Fractures

Preferred format : a podium presentation

Authors:

Hayati Hürol Türkoğlu (1), Mehmet Ali Tokgöz (1), İnci Ayas (2)

1. Orthopedics and Traumatology, Gazi University, Ankara, Turkey
2. , Gazi University, Ankara, Turkey

Keywords: Trimalleolar fractures, baropodometry, syndesmosis injury, tibiofibular overlap, plantar pressure, postoperative outcomes

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Trimalleolar fractures are complex injuries requiring precise surgical intervention to restore ankle stability and function. This study aims to analyze the relationship between tibiofibular overlap and baropodometric measurements post-surgery in patients with trimalleolar fractures and concomitant syndesmotic injury. Materials and Methods:This retrospective study included 28 patients (mean age 41.82 ± 13.32 years) who underwent surgery for trimalleolar fractures between 2018 and 2022. Postoperative evaluations were conducted with a mean follow-up period of 37.04 ± 10.33 months and included baropodometric measurements and radiographic measurements of tibiofibular overlap. Correlation analyses were performed to determine the relationships between these parameters. Results: Significant data were found between tibiofibular overlap and various baropodometric measurements on the operated foot. Notably, there were significant positive correlations with medial hindfoot force-time ıntegral, maxforce, peakpressure, and the maximum force and peak pressure of the 2nd and 3rd metatarsal heads ($p<0.05$) Conclusion: This study emphasizes the critical role of achieving optimal tibiofibular overlap in surgical interventions for trimalleolar fractures. Increased tibiofibular overlap is associated with improved baropodometric outcomes, particularly in the medial hindfoot and metatarsal regions, indicating that patients achieve a more normalized gait as the overlap increases. These findings highlight the importance of precise radiographic assessment and syndesmosis repair in the management of trimalleolar fractures. Keywords: Trimalleolar fractures, baropodometry, syndesmosis injury, tibiofibular overlap, plantar pressure, postoperative outcomes.

#42988 : Failing to achieve the metatarsal parabola of Maestro formula after second metatarsal Weil osteotomies. Does it increase the risk of re-intervention?

Preferred format : a podium presentation OR a poster presentation

Authors:

Jimenez-Villarejo Francisco (1), Llombart-Blanco Rafael (1), Saiz Modol Conrado (2), Valverde Gestoso Carmen (1), Alfonso Matías (1)

1. Orthopedic Surgery, Clinica Universidad de Navarra, Pamplona, Spain
2. , Clinica Universidad de Navarra, Pamplona, Spain

Keywords: Maestro-formula, metatarsalgia, Weil osteotomy, Scarf osteotomy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Maestro's formula is the gold standard in preoperative planning for Weil and scarf osteotomies. When the postoperative metatarsal length does not match Maestro´s parabola, an osteotomy is often performed on the asymptomatic metatarsals to meet the criteria of this formula. Objectives: To compare the re-intervention rate and transfer metatarsalgia in those patients who do not agree with the Maestro's criteria after Weil osteotomy of the second metatarsal. Materials and Methods: Patients who underwent isolated second metatarsal Weil osteotomy or associated with a first metatarsal scarf osteotomy were included. We evaluated the length difference between the first to third metatarsal heads in preoperative and postoperative X-rays, if an associated gastrocnemius fasciotomy was made, pre/postoperative metatarsal formula, and re-intervention rates. Results: 166 patients were included. 15 patients (9%) required a second intervention. Among those, only 3 patients didn't meet Maestro's formula. Index plus-minus morphotype had the highest reintervention rate (18%), due to transfer metatarsalgia, pseudoarthrosis or floating toe. No difference in reintervention rate was found between groups when gastrocnemius fasciotomy was associated. Conclusion: Our study concluded that not meeting the Maestro´s formula is not associated with a higher reintervention rate. Therefore, performing Weil osteotomies on asymptomatic metatarsals is unnecessary to prevent transfer metatarsalgia.

#42990 : Experience of Allograft Use in Foot and Ankle Surgery at a single center

Preferred format : a podium presentation OR a poster presentation

Authors:

Llombart-Blanco Rafael (1), Settels Lucia Elisa (2), Saiz Modol Conrado (3), Alfonso Matías (1), Villas Tomé Carlos (1)

1. Orthopedic Surgery, Clinica Universidad de Navarra, Pamplona, Spain
2. School of Medicine, University of Navarra, Pamplona, Spain
3. , Clinica Universidad de Navarra, Pamplona, Spain

Keywords: Allograft, foot and ankle surgery

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction and Objectives In many orthopedic procedures, a substitute for damaged tissues is needed. The use of allografts offers advantages to avoid donor site morbidity and address graft quantity when autografts fail to restore the structural defect. The main objective of this project is to analyze the use of allografts in foot and ankle surgery at a single center. Materials and Methods A retrospective study of foot and ankle surgeries involving allografts was conducted for the period from 2000 to 2023. The included allograft types were bone allografts (structural allografts, cancellous bone, osteochondral) and tendon allografts. Variables studied included sociodemographic factors, pathology, postoperative complications, and secondary interventions. Results Out of 507 reviewed cases, 34 patients met the inclusion criteria, being 91% male and 9% female. 25 patients received bone allografts, and 9 received tendon allografts. The most commonly used treatment was osteochondral and cancellous allografts. All allografts were fresh-frozen. Traumatic injuries accounted for 50% of the cases, followed by necrosis (17%) and tumors (12%). 47% of patients had uncomplicated recovery, while 53% developed complications. Reintervention was required in 11 patients (32%). Conclusion Allografts have been predominantly used in foot and ankle surgery following traumatic injuries. Cancellous and osteochondral allografts have been the most utilized. Although the complication rate is high, reintervention has been necessary in only one-third of the cases.

#42991 : Use of fresh-frozen allograft in osteochondral lesions of the talus

Preferred format : a podium presentation OR a poster presentation

Authors:

Saiz Modol Conrado (1), Llombart-Blanco Rafael (2), Settels Lucia Elisa (3), Valverde Gestoso Carmen (2), Alfonso Matías (2), Villas Tomé Carlos (2)

1. , Clinica Universidad de Navarra, Pamplona, Spain
2. Orthopedic Surgery, Clinica Universidad de Navarra, Pamplona, Spain
3. School of Medicine, University of Navarra, Pamplona, Spain

Keywords: Fresh-frozen, allograft, osteochondral, talus, cyst

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction and Objectives: Osteochondral talus lesions often need surgical intervention based on lesion size and articular cartilage integrity. We aim to assess the medium to long-term clinical-radiological evolution of the lesions treated by filling with allograft -in cystic lesions with intact cartilage- and with fresh frozen osteochondral allograft when there is chondral involvement. Materials and Methods: We conducted a retrospective study on patients with surgically treated osteochondral talus lesions. Arthritis severity was measured using Van Dijk's classification initially and at follow-up's end. We also assessed VAS, AOFAS, joint mobility, reintervention rates, and graft consolidation via CT or MRI. Results: Ten patients were included: four with bone allografts and six with frozen osteochondral allograft transplantation. Follow-up averaged 4 and 7 years. No significant complications or progression were noted. Cystic lesion fillings showed no arthritis progression, with a final VAS of 1.25 and AOFAS of 87. Osteochondral allograft patients had a 17% arthritis progression rate, moving from Van Dijk's grade II to III, with a final VAS of 2.1 and AOFAS of 77. Joint mobility was full in both groups. Graft consolidation was 100% in cystic lesion group. Only 17% showed partial consolidation and another 17% had no consolidation in the osteochondral allograft group. Half of the osteochondral allograft patients required reintervention. Conclusion: Fresh-frozen allografts are beneficial for filling cystic lesions and osteochondral transplants in talus injuries over the medium to long term, though the latter show slightly inferior clinical and radiological outcomes.

#42992 : Central sensitization of pain in patients with for foot/ankle pathology. Are there differences with those whith low back pain?

Preferred format : a podium presentation OR a poster presentation

Authors:

Llombart-Blanco Rafael (1), Andrada Alonso Manuel (2), Saiz Modol Conrado (3), Mateo Guarch Nerea (1), Domenech Fernandez Julio (1), Alfonso Matías (1)

1. Orthopedic Surgery, Clinica Universidad de Navarra, Pamplona, Spain
2. School of Medicine, University of Navarra, Pamplona, Spain
3. , Clinica Universidad de Navarra, Pamplona, Spain

Keywords: Central sensitization of pain, foot and ankle, low back pain, CSP

Your abstract (DO NOT add the title, list of authors or keywords in this field)

INTRODUCTION: Central pain sensitization (CPS) is defined as an “Increased sensitivity of nociceptive neurons in the central nervous system to normal or subthreshold afferent stimuli”. The aim is to compare the prevalence of CPS between patients consulting for foot and ankle pathology and those consulting for low back pain. MATERIAL AND METHODS: A cross-sectional study was carried out comparing a cohort of patients who consulted for the first time for foot and ankle pathology with another one that consulted for low back pain. Demographic variables, evolution of pain, main diagnosis and pain and disability questionnaires were collected. The CSI questionnaire was used to determine the presence of CPS between groups. The statistical study was performed with STATA. RESULTS: 195 patients that consulted for foot/ankle pathology and 252 patients with low back pain were included. 16.4%(95% CI) of patients with foot/ankle consult had CPS versus 22.2%(95% CI) with low back pain. Difference in the prevalence of CPS was not statistically significant between both groups, however, the difference in the score of part A of the CSI questionnaire was significant. The foot/ankle pathology with the highest prevalence of CPS was plantar fasciitis (21.9%) and hallux valgus (18.8%). Association was found between the presence of CPS and disability and pain. Women had a higher prevalence of CPS. CONCLUSIONS: Subjects who consulted for foot and ankle pathology associated lower scores on the CSI questionnaire and lower prevalence of CPS than low back pain group. Plantar fasciitis and hallux valgus had higher prevalence of CPS.

#42993 : Complex ankle arthritis with deformity treated with total ankle replacement

Preferred format : a podium presentation OR a poster presentation

Authors:

Dhivakaran Gengatharan (1), Eric Cher Wei Liang (1), Walter Wong Soon Yaw (1), Inderjeet Singh Rikhraj (1)

1. Orthopedic Surgery, Sengkang General Hospital, Singapore, Singapore

Keywords: ankle arthritis, total ankle replacement, osteotomy, joint line tenderness

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Ankle arthritis is a debilitating condition causing severe foot pain, which restricts mobility and functionality. We report a complex case of Takakura-Tanaka stage 4 ankle arthritis treated with medial malleolus sliding osteotomy, fibular osteotomy, and total ankle replacement. Patient summary: We present the case of a 74-year-old woman with chronic bilateral ankle deformity, pain, and difficult ambulating. Examination revealed severe varus deformity in both hindfeet and significant restriction in range of motion. Radiographs showed complete disruption of the tibiotalar joint, dysplastic medial malleolus and fibula, and bone loss in talus. Surgical technique: Lateral approach to the ankle was utilized to perform a fibular osteotomy. This was followed by an anterior approach, during which a sliding medial malleolus osteotomy was performed to restore the ankle mortise and talocrural angle. The distal tibia and talus were then prepared for total ankle replacement, ensuring the mechanical axis of the ankle joint was restored. The attenuated deltoid ligament was fixed with suture anchors. The osteotomy sites of both the tibia and fibula were fixed with a locking plate. The patient was placed in a backslab with the ankle in a neutral position. Results: Post-operative radiographs showed excellent restoration of the mechanical axis of the ankle. She exhibited no tenderness at the joint line and no wound-related complications with improvement in range of motion of the ankle at one month. Conclusion: Ankle arthritis with complex deformity presents significant challenges. We aim to highlight the challenges involved in considering total ankle replacement for these patients.

#42995 : Titanium Platform Cage as a device to fill bone voids and defects after TAA or revision of pseudarthrosis after ankle arthrodesis

Preferred format : a podium presentation OR a poster presentation

Authors:

Uwe Klapper (1)

1. Orthopedics and Trauma, St. Rochus Hospital, Castrop-Rauxel, Germany

Keywords: bone void, titanium cage, Revsision surgery, ankle arthroplasty, ankle arthrodesis, salvage procedure

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The number of revision surgery after TAA and ankle arthrodesis is rising. The salvage procedure for these cases is the tibiotalar arthrodesis with augmentation. There is currently no primarily stable implant on the market to fill the bone voids and defects that occur after explantation of TAA or revision of pseudarthrosis after ankle arthrodesis. We present a new device to adress this specific problem showing six cases that underwent surgery of that kind. The implant ist a hygrostatic threedimensional crosslinked titanium cage that can be combined with intramedular nailing or extraarticular plating osteosynthesis. The principle of this technique has been succesfully used in spine surgery for years.

#42996 : K-Wire osteosynthesis for syndesmostic lesions in trimalleolar fractures – a mid-term patient reported and radiographic follow-up

Preferred format : a podium presentation

Authors:

Sérgio Soares (1), Sérgio Soares (1), Mohand Agaoua (1), Angela Seidel (1)

1. Orthopaedics dpt, HFR Fribourg, Fribourg, Switzerland

Keywords: Trauma, Trimalleolar Fractures, k-wire, mid-term

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Ten percent of malleolar fractures are associated with injury of the ankle syndesmosis. Syndesmotic compromise is even higher in fractures requiring surgery. A compromise of the syndesmotic ligaments can lead to widening of the ankle mortise, inducing ankle instability and increased risk of early osteoarthritis. Moreover, the best treatment option for lesions of the tibiofibular syndesmosis remains subject to debate. The most used surgical treatment option is a rigid osteosynthesis by cortical screws brought in horizontally to the tibiofibular joint. Alternative treatment options are flexible such as the suture-button-technique and k-wire fixation. This latter technique was rarely investigated. Until today there is little literature on the long-term follow-up / outcome. We performed a retrospective analysis of 20 consecutive patients who underwent surgical treatment in our centre for a bi- or trimalleolar fracture with K-wire syndesmosis fixation. They were submitted to an AP and profile weightbearing x-ray and answered a questionnaire on their functional abilities (EFAS, MCS and PCS scores). The average follow-up was 3.42 years. 55% had a dislocated fracture. The mean EFAS score was 12.45. Hardware removal was performed in 95% of patients. Nevertheless, there was a 10% complication rate. None of the patients was a candidate for an ankle arthrodesis or ankle replacement. Progression of ankle osteoarthritis was not observed in any patient. K-wire fixation seems to offer a reliable syndesmosis fixation with good mid-term clinical results and patient satisfaction. It comes along with similar biomechanical results as the fixation with cortical screws whilst presenting lower costs.

#42997 : Calcaneus fragment island as a risk factor for minimally invasive surgery in calcaneus fractures

Preferred format : a podium presentation

Authors:

Dong Woo Shim (1), Wonwoo Lee (2), Yeokwon Yoon (2), Kwang Hwan Park (2), Seung Hwan Han (2), Jin Woo Lee (2), Seung Yong Sung (3)

1. , , Seoul, Republic of Korea
2. , Severance Hospital, Seoul, Republic of Korea
3. , International St.Mary's Hospital, Incheon, Republic of Korea

Keywords: Calcaneus fracture, minimally invasive surgery, risk factor, failure

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Recent studies showed comparative clinical and radiological outcomes between minimally invasive surgery (MIS) and extensile L-shape approach. We aimed to investigate certain types of calcaneal fractures that are liable to failure after MIS in calcaneus fractures. Methods: We retrospectively investigated patients who were surgically treated for calcaneus fractures. Patients undergone MIS were enrolled for comparative analyses. Presence of medial and/or lateral calcaneal fragment island was the criterion to divide each group (1/none, 2/either, 3/both). Radiological parameters were Bohler’s angle, Gissane’s angle, and calcaneal height. Patients were assessed at initial and postoperatively 0, 3, and 12 months. Clinical outcomes using American Orthopaedic Foot and Ankle (AOFAS) score were evaluated at final follow-up. Results: Total 66 patients were investigated. Eleven patients had no fragment island (Group 1), 24 patients had either medial or lateral fragment island (Group 2), and 31 patients had both fragment islands (Group 3). Repeated measure ANOVA revealed that there were no significant changes among groups in three radiologic parameters ($P = 0.661$, $P = 0.867$, and $P = 0.477$, respectively). However further analyses showed that Bohler’s angle and calcaneal height decreased significantly as time passes in Group 3 comparing to Group 2 ($P = 0.023$, $P = 0.011$, respectively). Group 3 had significantly lower AOFAS score than other groups ($P = 0.035$). Conclusion: Patients who have both medial and lateral fragment islands are liable to failure and have inferior clinical outcomes in MIS. Presence of both fragment islands would be more suitable for extensile L-shape approach.

#42998 : Trimalleolar fractures: a 10-year radiological and functional follow-up

Preferred format : a podium presentation OR a poster presentation

Authors:

Sérgio Soares (1), Amal Chidda (1), Angela Seidel (1)

1. Orthopaedics dpt, HFR Fribourg, Fribourg, Switzerland

Keywords: Trauma, Trimalleolar Fractures, long-term follow-up

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Ankle fractures are the third most common fracture in adults and account for 10% of all fractures. In short and mid-term follow-up, these patients suffer a high impact on their quality of life. However, the long-term follow-up is sparse in the literature and dedicated on the development of ankle osteoarthritis (OA) as the only important outcome. The goal of this retrospective study was to provide information about the patient repported outcome. All patients who underwent surgical treatment for a TM fracture, in our hospital, between 2007-2014 were identified and asked to complete a questionnaire including the EFAS and the SF-12 score. The progression of OA was assessed on ankle radiographs. 74 patients were included (drop rate of 82.7%). 66% were women. 25% were smokers and 11.3% diabetic. Smoking was associated with a worst outcome. The most common mechanism of injury (78.4%) was supination-external rotation type IV.. 55% of patients suffered a discolated TM fracture. EFAS score was lower in patients who suffered a dislocated TM fracture. The overall complication rate was 12.3%. 63% of patients were submitted to a follow-up surgery (91.5% hardware removal, 4.2% total ankle replacement and 2.1% ankle arthrodesis). 80.4% presented grade I and II OA and 19.6% presented grade III and IV OA. This latter group had a worst functional outcome. Sustaining an ankle fracture is a life changing event. However, patients can retrieve a good functional outcome. Smoking, discolated fracture and the presence of grade III and IV OA was associated with a worst outcome.

#42999 : Spectrum of bone and soft tissue tumours of foot and ankle from the West of Scotland MSK tumour registry - 13 year experience

Preferred format : a podium presentation

Authors:

Allen Albert (1), Pujol Nicolas Andrea (2), Senthilkumar Chinnasamy (3), Ashish Mahendra (4)

1. Foot and Ankle surgery, Glasgow Royal Infirmary, Glasgow, United Kingdom
2. Foot and ankle surgery, Glasgow Royal Infirmary, Glasgow, United Kingdom
3. , Glasgow Royal Infirmary, Glasgow, United Kingdom
4. Orthopaedic Oncology, Glasgow Royal Infirmary, Glasgow, United Kingdom

Keywords: Bone tumour, soft tissue tumour, foot and ankle.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Neoplasm in the foot and ankle is rare. It comprises 5% of all musculoskeletal tumours. Although most of these tumours are benign, the diagnosis of malignant tumours is often delayed due to the scarce presentation and low incidence. We report on our experience from a large regional database of all referrals to the West of Scotland MSK tumour service with suspected neoplasm in the foot and ankle. Methods: All referrals received between January 2010 and September 2023 were included. Clinical record and images were reviewed. Patient demographics, location of the tumour, treatment given, and outcomes were analysed. Only cases with a confirmed histopathological diagnosis were included. Results: There was a total 262 patients with a confirmed histopathological diagnosis of a neoplasm. There were 134 males and 128 females, 86.6% of the lesions turned out to be benign (229/262) and 13.4% malignant (34/262). Most of the malignant neoplasms were soft tissue tumours (74.29%) with synovial sarcoma being the most common and more commonly occurring around the ankle and the hind foot. The most common malignant bone tumour was chondrosarcoma. 66.7% patients with malignant bone tumours required an amputation compared to 30.7% of malignant soft tissue tumours. The 5-year mortality was higher in malignant bone tumours (66.7 vs 26.9%). Conclusion: Malignant neoplasms in foot and ankle are rare but carry significant morbidity and mortality. Soft tissue sarcomas more commonly occur around the ankle and the hind foot. Awareness and prompt referral of suspicious lesions to an appropriate specialist unit is essential.

#43000 : Addressing Severe Ankle Deformity in Charcot Arthropathy: Tibiocalcaneal Arthrodesis with Hindfoot Nail Technique

Preferred format : a podium presentation OR a poster presentation

Authors:

Norliyana Mazli (1), Mohd Yazid Bajuri (2), Nik Alif Azriq Nik Abdullah (2)

1. Department of Orthopaedics and Traumatology, Universiti Kebangsaan Malaysia Medical Centre, Cheras, Malaysia
2. Department of Orthopaedics and Traumatology, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Keywords: charcot arthropathy, tibiocalcaneal arthrodesis, ankle deformity, diabetic foot, hindfoot arthrodesis nail

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Charcot arthropathy presents as a debilitating condition marked by progressive joint deterioration, primarily afflicting the foot and ankle, resulting in the formation of distorted and unstable ankles. Typically, advanced deformities necessitate the use of external fixators and gradual correction to mitigate potential neurovascular complications. Here, we document the case of a 68-year-old woman with diabetes mellitus, hypertension, and end-stage renal failure, who exhibited painless progressive deformity of her right ankle over two years. Her mobility was severely impaired, relying on a wheelchair for movement. Clinical assessment revealed an 80-degree valgus deformity of the right ankle, accompanied by bony protrusions on the medial side, with dry skin but no ulceration noted. Radiographic examination depicted severe valgus deformity, complete talus destruction, distal fibula fracture, and loss of the lateral distal tibial plafond. She underwent tibiocalcaneal fusion using a hindfoot arthrodesis nail and iliac bone grafting during the consolidation and remodeling phase. Four months post-operation, radiographs indicated evidence of fusion, permitting partial weight-bearing with a walking frame. After one year, the patient regained ambulatory function without assistance, with radiographs confirming complete fusion. Notably, no complications such as skin or soft tissue infections, or neurovascular injuries were encountered. This case underscores the successful correction of severe ankle deformities and the restoration of a stable and functional foot in Charcot arthropathy patients through tibiocalcaneal arthrodesis employing a hindfoot nail.

#43001 : Risk Factors Associated with Major Amputation in Diabetic Foot Patients: A Nationwide Study

Preferred format : a podium presentation

Authors:

Dong Woo Shim (1), Wonwoo Lee (2), Yeokwon Yoon (2), Kwang Hwan Park (2), Seung Hwan Han (2), Jin Woo Lee (2), Seung Yong Sung (3)

1. , , Seoul, Republic of Korea
2. , Severance Hospital, Seoul, Republic of Korea
3. , International St.Mary's Hospital, Incheon, Republic of Korea

Keywords: diabetic foot, major amputation, risk factor, nationwide study

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Major amputation due to diabetic foot impacts quality of life and mortality. This study aimed to identify risk factors for major versus minor amputation in diabetic foot patients. Methods Using data from the Korean National Health Insurance Service (NHIS) from 2002 to 2020, we analyzed patients with diabetic foot who underwent amputations, categorized into minor and major groups. We compared gender, age, income level, vascular reconstruction, antibiotic use, diabetes medication, comorbidities, mortality rates, and time until death. Logistic regression assessed the risk factors. Results Out of 40,809 amputation cases, both minor and major cases increased over time. The major amputation group had more males, older patients, lower income, and frequent vascular reconstruction. They also had higher antibiotic use and more comorbidities such as hypertension, cerebrovascular disease, end-stage renal disease (ESRD), congestive heart failure, ischemic heart disease (IHD), and dementia. This group experienced higher mortality and shorter time until death. Significant risk factors for major amputation included high antibiotic use, age over 50, ESRD, dementia, IHD, and vascular reconstruction (all $P < 0.001$). Conclusion Major amputation in diabetic foot patients is linked to higher mortality and shorter lifespan. Key risk factors are multidrug-resistant infections, age over 50, ESRD, dementia, and IHD.

#43002 : Managing Non-traumatic Bilateral Peroneal Tendon Subluxation and Pes Planovalgus: Extra-osseous Talotarsal Stabilization Intervention.

Preferred format : an ePoster Displayed

Authors:

Norliyana Mazli (1), Mohd Yazid Bajuri (2), Nik Alif Azriq Nik Abdullah (2)

1. Department of Orthopaedics and Traumatology, Universiti Kebangsaan Malaysia Medical Centre, Cheras, Malaysia
2. Department of Orthopaedics and Traumatology, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Keywords: peroneal tendon subluxation, pes planovalgus, extra-osseous talotarsal stabilization, non-traumatic, tendon instability

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Peroneal tendon subluxation, a relatively rare condition often stemming from trauma, is frequently misdiagnosed as an ankle sprain. Here, we present a case involving a 29-year-old male experiencing bilateral ankle pain for one year, accompanied by noticeable prominence of tendon-like structures around the ankles. Examination revealed bilateral flexible pes planovalgus with tenderness along the lateral aspects of both ankles. Peroneal tendon subluxation was observed during ankle dorsiflexion. Magnetic resonance imaging indicated chronic sprain of the right calcaneofibular ligament, tenosynovitis of the peroneus longus and brevis, and a tear in the left anterior talofibular ligament (ATFL). The patient underwent left ankle extra-osseous talotarsal stabilization (EOTTS) using a HyProCure® screw, along with superior peroneal retinaculum and ATFL repair. Ten months later, he underwent right ankle HyProCure® screw insertion, superior peroneal retinaculum repair, and deepening of the peroneal tendon groove. Weight-bearing radiographs demonstrated improvement in the lateral talar-first metatarsal angle (Maery's angle), decreasing from eight degrees to five degrees for the right ankle and from seven degrees to three degrees for the left ankle. Six months post-surgery, the visual analogue score (VAS) decreased from 8 to 2, and the AOFAS hindfoot score improved from 40% to 81%. Repetitive stress from pes planovalgus likely contributed to the peroneal tendon subluxation. EOTTS along with superior peroneal retinaculum effectively corrected the pes planovalgus deformity without necessitating a bony procedure and prevented recurrent peroneal tendon subluxation.

#43003 : Restoring Functionality in Chronic EHL Rupture: Tenodesis and EHL-EHB Transfer Approach

Preferred format : an ePoster Displayed

Authors:

Craigven Sim (1), Eric Cher (2)

1. , , Singapore, Singapore
2. , Sengkang General Hospital, Singapore, Singapore

Keywords: chronic EHL rupture, tendon, tenodesis

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Chronic extensor hallucis longus (EHL) tendon rupture of often leads to tendon end shortening. Primary repair may lead to abnormal tendon tension or failure to oppose the tendon ends. We present a case of chronic EHL rupture managed with a tenodesis and EHL to extensor hallucis brevis (EHB) transfer. Case study A 30 year old female sustained traumatic EHL rupture over the 1st metatarsal from a knife injury and was treated surgically via end-to-end repair. She presented with persistent toe drop and MRI performed 6 weeks after showed a tendon gap of 3.2cm, suggestive of re-rupture of EHL, with proximal retraction up to the midfoot level. She was counselled for EHL reconstruction due to persistent pain and limited hallux dorsiflexion. Surgery Longitudinal incision was made along the axis of EHL. Proximal and distal stumps were identified and debrided to healthy tendon. Proximal EHL stump was attached to the medial cuneiform using an interference screw, to preserve ankle dorsiflexion. EHB was transected distally, and sutured to the distal EHL stump, while placing the hallux in dorsiflexion. The repair was protected with K-wire for 6 weeks. Patient was allowed weightbearing as tolerated. Ranging and strengthening exercises were initiated at 6 weeks, after the K-wire was removed. Results Active hallux dorsiflexion was regained at 6 months follow-up. Repeat MRI demonstrated stable tenodesis and EHL-EHB connection. Patient remained pain free and was satisfied with the outcomes. Conclusion This surgical technique is a viable option for treatment of EHL rupture with significant tendon gap.

#43004 : Prospective observational analysis of intraoperative radiation exposure in minimaly invasive foot surgery

Preferred format : a podium presentation

Authors:

Dries De Roos (1, 2), Wahid Rezaie (3)

1. Orthopedic department, OLV Hospital Aalst, Aalst, Belgium
2. Orthopedic department, University Hospital Ghent, Ghent, Belgium
3. Foot and Ankle surgeon, Orthopedic department, OLV Hospital Aalst, Aalst, Belgium

Keywords: Hallux Valgus, 1st MTP Joint, Minimally Invasive, fluoroscopy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Minimally Invasive Surgery (MIS) of foot disorders is gaining popularity due to its comparable outcomes to the open surgery. However, concerns have arisen regarding the potentially higher use of fluoroscopy. This study aims to analyze intraoperative radiation exposure in various foot MIS procedures and compare this exposure to the literature reports on open and MIS procedures and permitted occupational radioprotection thresholds. Methods A single-center, single-surgeon prospective cohort study was conducted on patients undergoing MIS procedures for foot conditions between December 2023 to September 2024. Radiation dosage data was recorded using a mini C-arm (Orthoscan TAU1515) , including total fluoroscopy time (s), radiation dose (mGy), and dose-area product (DAP) ($Gy{\cdot}cm^2$). Results From 278 foot and ankle procedures conducted (during the first 6 months of study), 83 MIS procedures were included. These consisted of 29 hallux valgus (HV) correction (31.9%), HV with lesser toe procedures (50.5%), isolated lesser toe procedures (8%), and calcaneus osteotomies (8%). The mean time of radiation exposure in MIS procedures was 39.94 ± 20.3 seconds (range: 3.96-114.2 seconds). The mean radiation dose was 0.46 ± 0.27 mGy (range: 0.075-1.45 mGy). The mean DAP was 0.033 ± 0.019 $Gy{\cdot}cm^2$ (range: 0.005-0.10 $Gy{\cdot}cm^2$). Conclusion Preliminary results indicate that patient radiation exposure during MIS procedures for foot conditions using a mini C-arm is well below the permitted radioprotection thresholds. Our findings suggest that radiation doses are significantly lower compared to traditional fluoroscopy reported in the literature for open surgeries. Further data collection is necessary to draw definitive conclusions.

#43005 : Optimal First Metatarsal Shortening for Grades I-III Hallux Rigidus: Impact on Functional Outcomes and Transfer Metatarsalgia

Preferred format : a podium presentation

Authors:

Albert Fontanellas Fes (1), Carlo Gamba (1), Gemma González Lucena (1), Jan Martinez Lozano (1), Alberto Gines Cespedosa (1)

1. COT, Hospital del Mar, Barcelona, Spain

Keywords: Hallux Rigidus, Transfer Metataralgia, Distal Oblique Osteotomy, Functional Outcomes, Metatarsal Shortening

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Different distal osteotomies have been described for treatment of hallux rigidus (HR) with the objective of plantarflexion and decompression of the first metatarsal joint. However, it is not described how much we should shorten first ray to restore biomechanics. The objective is to analyze how many millimeters we need to shorten first ray, evaluating functional outcomes. Methods Retrospective study analyzing patients with HR grades I to III who underwent distal oblique osteotomy. Main variable was shortening of the first metatarsal (mm). It was measured preoperatively and one year after surgery in weight-bearing anteroposterior foot radiography. Before surgery and one year postoperatively, the Manchester Oxford Foot Questionnaire (MOXFQ) and Visual Analog Scale (VAS) were administered. Complications were analyzed. Minimum follow-up was 12 months. Results 37 patients, 29 women and 8 men, age of 59.57 years (SD 10.02). 6 classified as grade I, 22 grade II and 9 grade III. 40.5% had metatarsal index minus before surgery. Mean shortening of the first metatarsal was 4.24mm (SD 3.17). The MOXFQ decreased from 56.25 (SD 19.7) to 28.3 (SD 20.1). The VAS decreased from 55.68 (20.7) to 27.29 (SD 23.8). 7 patients (19%) developed transfer metatarsalgia (5 had a preoperative index minus), 5 had good outcomes with insoles and 2 required surgery. Conclusion 4mm shortening of the first metatarsal is associated with good outcomes in HR and can be considered as a safe reference. If metatarsal index minus is present counseling of patients should be done about transfer metatarsalgia and prophylactic Weil osteotomy.

#43006 : ARE SUBUNGUAL EXOSTOSES PART OF THE NORMAL ANATOMY OF THE DISTAL PHALANX OR ARE THEY ACQUIRED WITH AGE?

Preferred format : a podium presentation OR a poster presentation

Authors:

Carmen Valverde Gestoso (1), Matías Alfonso Olmos-García (1), Rafael Llombart Blanco (1), Conrado Saiz Modol (1), Nerea Mateo Guarch (1), Francisco Jiménez-Villarejo Díaz (1), Laura Olías Ortiz (1)

1. COT, Clínica Universidad de Navarra, Pamplona, Spain

Keywords: SUBUNGUAL EXOSTOSES, DISTAL PHALANX

Your abstract (DO NOT add the title, list of authors or keywords in this field)

INTRODUCTION: Subungual exostosis is an isolated bony prominence occurring mainly on the distal phalanx of the big toe and presenting with various clinical and radiological findings. Montiel et al. studied exostoses of the base of this phalanx. However, there are no studies on the significance of subungual exostoses of the first toe. MATERIAL AND METHODS: We included patients who had undergone loading radiographs in AP and lateral projection, with no surgical history or fractures in the foot under study and a metatarsophalangeal angle inferior to 20º. Statistical analysis was performed using Stata 12.0 software. RESULT: A total of 859 radiographs were analyzed, with a prevalence of subungual exostoses of 44,7%. We observed an exponential increase in the presence of subungual exostoses with age, with a prevalence of 1% in the under-10 age group and 67% in the over-70 age group ($p<0,05$). People with dorsal exostoses are on average 20.6 years older than those without dorsal exostoses. In addition, more subungual exostoses were observed in women (14.3% more dorsal exostoses than men), in people who had exostoses on the AP X-rays, greek feet and Index Plus Minus formula($p<0,05$). CONCLUSIONS: We found an increase of presence of subungual exostoses with age, influenced by the use of footwear (narrower in women) and may be the origin of pain under the nail. The feet with the fewest subungual exostoses are Egyptian feet with Index Plus formula in men.

#43007 : “THE CONCORDE SIGN” AS AN EASY SIGN OF ROTATION OF THE FIRST TOE

Preferred format : a podium presentation OR a poster presentation

Authors:

Carmen Valverde Gestoso (1), Matías Alfonso Olmos-García (1), Rafael Llombart Blanco (1), Conrado Saiz Modol (1), Francisco Jiménez-Villarejo Díaz (1), Nerea Mateo Guarch (1), Isabel Martínez Burgos (1)

1. COT, Clínica Universidad de Navarra, Pamplona, Spain

Keywords: Concorde, Rotation, hallux

Your abstract (DO NOT add the title, list of authors or keywords in this field)

INTRODUCTION: In advanced hallux valgus a rotation of the first toe is associated. A positive round sign of the metatarsal head has been described to identify rotation. We observed that in numerous lateral radiographs where the distal phalanx (DP) of the hallux appeared rotated, its silhouette resembled to the Concorde supersonic airplane. The aim of this study is to describe the “Concorde sign” and test if its presence served as an indicator of rotation that could drive a modification of the surgical approach. MATERIAL: We included patients with weigthbearing radiographs. In the lateral view three experienced foot surgeons determined the presence or absence of the “Concorde sign” and rotation of the DP. Statistical analysis was performed using Stata 12.0 software. RESULTS: The presence or absence of the “Concorde sign” was evaluated in 240 radiographs and all patients with “Concorde sign” belong to the DP rotated group. There was a statically significant higher prevalence of the “Concorde sign” when a 20º-40º MTPA was measured ($p<0.05$). Intraobserver Kappa index values were 0.93, 0.89 and 0.83 for investigators 1, 2 and 3 respectively, while the interobserver value was 0.79. CONCLUSIONS: “The Concorde sign” is a radiographic sign of first ray rotation on radiographs and could serve as a guide for rotational osteotomy procedures. Therefore, surgeons can confirm an optimal correction of the rotation with two indicators: a negative round sign of the first metatarsal head (Yamaguchi) in an AP view and the disappearance of the "Concorde sign" in the lateral view.

#43008 : WHAT PLAIN RADIOGRAPHIC DATA RELATE TO THE ROTATION OF THE FIRST RADIUS IN HALLUX VALGUS?

Preferred format : a podium presentation OR a poster presentation

Authors:

Carmen Valverde Gestoso (1), Matías Alfonso Olmos-García (1), Rafael Llombart Blanco (1), Conrado Saiz Modol (1), Francisco Jiménez-Villarejo Díaz (1), Nerea Mateo Guarch (1), Marta Cabrera López (1)

1. COT, Clínica Universidad de Navarra, Pamplona, Spain

Keywords: Rotation, hallux valgus, weighbearing X-ray

Your abstract (DO NOT add the title, list of authors or keywords in this field)

INTRODUCTION: Rotation in hallux valgus presents therapeutic implications, influencing the choice of surgical technique. However, there is a lack of evidence regarding the precise threshold at which the first ray appears rotated on weighbearing X-ray. The aim of this study is to assess the influence of intermetatarsal (IMA), interphalangeal (IPA), and metatarsophalangeal (MTPA) angles on the pronation and rotation of the first toe, and consequently of the distal phalanx (DP). MATERIAL: We included patients with weightbearing radiographs in AP and lateral views, with no surgical history or fractures. In the lateral radiograph we determined the correct assessment of the distal phalanx. According to this, we divided the patients into two groups according to the presence of rotated or unrotated DP. Measurements of the IMA, IPA and MTPA angles were performed on the AP radiograph. Statistical analysis was performed using Stata 12.0 software. RESULT: A total of 273 radiographs were analyzed, of which 94 showed phalangeal rotation. We observed a significant difference of 14.9º in the MTPA between the non-rotated DP group and the rotated DP group ($p=0.001$). Furthermore, an increase in the MTPA correlated with a higher likelihood of exponentially rotated phalanges. A cut-off value of 20º for the MTPA was identified to determine the presence of DP rotation ($p<0.05$). CONCLUSIONS: We can establish an MTPA of 20° as the cut-off point to visualize rotated DP of the first toe on the lateral radiograph. Above 20° MTPA, a surgical technique that allows derotation of the hallux should be considered.

#43010 : Osteochondral lesions of the talus treated with amic technique: long term results

Preferred format : a podium presentation OR a poster presentation

Authors:

Elena Delmastro (1), Manfred Thomas (2)

1. , , Milan, Italy
2. , EFAS , Augsburg, Germany

Keywords: Osteochondral lesions, Talus, AMIC, survey

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Osteochondral lesions of the talus (OLT) are common findings following both acute ankle trauma and chronic ankle instability. In the most recent systematic reviews, the AMIC technique showed good results, providing significant improvement in patient outcome scores. Aim of this study is a clinical and radiologic 10 years follow-up of a series of patients treated with AMIC technique for OLTs. Materials and Methods: The study evaluated 19 patients who underwent surgery with AMIC technique between 2011 and 2015 for 20 osteochondral lesions of the talus. A clinical 10 years follow up included PROMS such as EFAS score, Foot Function Index (FFI) Manchester Oxford Foot Questionnaire (MOxFQ). The MOCART 2.0 score was used for the radiologic 10 years follow-up. Results: The PROMs showed the following results: EFAS: 19.750 (SD 4.644), MOxFQ: 9.550 (SD 12.992), FFI: 16.150 (SD 20.879), MOCART 2.0: 44.750 (SD 12.055). The results were compared with the data present in the literature and showed overlapping values. The Pearson correlation between the PROMs and the results of the MOCART 2.0 score was evaluated and none of the PROMS showed a significant correspondence with the MOCART 2.0 results. Conclusions: AMIC method has proven to be an effective treatment for OLTs at 10 years of follow-up. However, the PROMs values do not correspond to the MOCART 2.0 score.

#43011 : Long-term clinical results of flexor hallucis longus transfer in insertional achilles tendinopathy

Preferred format : a podium presentation OR a poster presentation

Authors:

Mehmet Ali Tokgöz (1), Güneş Ateş (1), Saffet Buğra Korkut (1), Doruk Somuncu (1), Hamza Özer (1)

1. department of orthopedics and traumatology, Gazi University Hospital, Ankara, Turkey

Keywords: flexor hallucis longus transfer, insertional achilles tendinopathy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

This study aimed to compare the surgical treatment of patients with insertional achilles tendinopathy with patients who received only debridement and patients who underwent debridement and flexor hallucis longus(FHL) tendon transfer. The patients were divided into two groups: debridement group and group that underwent debridement and FHL tendon transfer. The victorian institute of sports assessment - achilles questionnaire (VISA-A) , American Orthopaedic Foot and Ankle Society Ankle-Hindfoot(AOFAS-AH), Foot and Ankle Ability Measure(FAAM), Foot and Ankle Disability Index(FADİ), visual analog scale(VAS) scores were used to determine clinical and functional results. Results evaluated after 1-year follow-up. 13 patients included in debridement group and 12 patients included in debridement and FHL transfer group. VAS score in the debridement group decreased from 6.5±1.4 to 1.4±1.3($p<0.001$), AOFAS-AH score increased from 58.2±11.8 to 81±11.8($p<0.001$), VISA-A score increased from 27.3±15.4 to 43.9±21.4($p<0.001$), FAAM score increased from 39.8±11.2 to 65.1±13.7 It was observed that the FADI score increased from 46.6±17.2 to 74.1±13.6 ($p<0.001$). VAS score of the debridement and FHL transfer group decreased from 6.3±1 to 1.3±1($p<0.001$), AOFAS-AH score increased from 66.1±11.4 to 90.1±6.4($p<0.001$), VISA-A score increased from 38.2±12.3 to 63±17.9($p<0.001$), FAAM score increased from 56.4±11 to 73.9±8.5($p<0.001$), FADI test increased from 62.2±17.6 to 89.5±11.8($p<0.001$). No statistically significant difference was found between the groups($p>0.05$). No wound site problems were observed in any patient. Although there did not appear to be a significant statistical difference between two groups, a significant clinical and functional improvement was observed in all patients who received surgical treatment at the 1-year follow-up after surgery.

#43012 : Influence of Talar Inclination and Hindfoot Rotational Position on Measurement Variability in Progressive Collapsing Foot Deformity

Preferred format : a podium presentation

Authors:

Antoine Acker (1, 2), Chien-Shun Wang (3), Tommaso Florin Valecchi (4), Albert Anastasio (5), Erik Huanuco Casas (2, 6), Grayson Talaski (7), Emily Luo (2), Samuel Adams (5), Cesar de Cesar Netto (2)

1. , Foot and Ankle Surgery Centre, Centre Assal., Genève, Switzerland
2. Departement of Orthopedic Surgery, , Durham, USA
3. , Department of Orthopedics and Traumatology, Taipei Veterans General Hospital, Taipei, Taiwan
4. ASST Gaetano Pini, , Milano, Italy
5. Departement of Orthopedic Surgery, , Durham, USA
6. , Delgado Clinic, Lima, Peru
7. , Department of Orthopedics and Rehabilitation, Carver College of Medicine, University of Iowa, Iowa, USA

Keywords: Talus, WBCT, PCFD, flat foot

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Weight-Bearing CT (WBCT) measurements report valgus shape of the talus in the coronal plane of Progressive Collapsing Foot Deformity (PCFD) compared to controls. However, due to the talus complex shape, rotation and inclination may lead to differences in measurements. Method: Retrospective case-control study included 14 PCFD patients and 19 controls. Measurements of posterior facet angulation relative to the tibio-talar joint (inftal/subtal) to assess talar valgus were taken pre- and post-surgical correction in PCFD patients and controls. Then measurement's plane was changed to simulate 15 degrees of internal and external rotation of the talus and to correct the talar inclination angle (TIA). A p-value <0.05 was considered statistically significant. Results: Significant differences were found between pre- and post-operative PCFD patients for the inf tal sub tal angle ($p = 0.0079$), but not after correction of the TIA ($p = 0.403$). Compared to controls, a significant difference was measured ($p = 0.0000626$), which remained after correction of the TIA ($p = 0.0016$). However, simulation of internal ($p = 0.0002$) and external ($p = 0.0322$) rotation were statistically different from the neutral position, with respective means of 22.8, 6.7, and 12.3 degrees. Conclusion: Significant differences were found between control and PCFD patients, and within the same cohort after changes in the inclination or rotation of the talus. Changes occurring in PCFD (inclination and internal rotation of the talus) significantly increased the measured valgus, questioning the validity of the differences in shape. 3D assessment or a coordinated systems could resolve this important question.

#43013 : Eye-tracking: Comparison of gaze pattern behavior between orthopedists and pediatricians during identification of pediatric fractures

Preferred format : a podium presentation OR a poster presentation

Authors:

Amal Chidda (1), Samy Rima (2), Moritz Tannast (3), Ines Raabe (3), Joseph Schwab (3), Angela Seidel (4)

1. Foot and Ankle Department, HFR, Fribourg Cantonal Hospital, Villars-sur-Glâne, Switzerland
2. , University of Fribourg, Fribourg, Switzerland
3. , HFR, Fribourg Cantonal Hospital, Fribourg, Switzerland
4. Foot and Ankle Department, HFR, Fribourg Cantonal Hospital, Fribourg, Switzerland

Keywords: eye tracking, pediatric fractures

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objectives : As analyzing pediatric radiographs are always a challenge due to the growth plate and ossification centers we wanted to compare the gaze pattern behaviors of orthopedic surgeons and pediatricians when interpreting pediatric foot and ankle radiographs and their diagnostic accuracy. Additionally, we compared this to the diagnostic accuracy of Artificial Intelligence (AI). Methods : Participants had to analyze 23 pediatric foot and ankle radiographs. We selected the radiographs from patients who consulted the emergency room. There was 10 normal x-rays and 13 x-rays with fracture. Their gaze pattern behaviors were assessed through an eye-tracker Eyelink 1000 Plus and the data collected in EvdentIDE (Okazolab). We analyzed the following eye-tracking data: amplitude of saccades, fixation duration of saccades, and count of saccades per second. We evaluated the diagnostic accuracy. Our artificial intelligence program was Gleamer. Results : We had 25 participants (17 orthopedic residents and 8 pediatric physicians). The orthopedic surgeon had a mean amplitude of saccades of 3.88 and a mean duration of saccades of 32.92ms. The pediatricians had a mean amplitude of saccades of 3.14 and a mean duration of saccades of 28.62ms. The difference between the two groups were significant ($p<0.0001$). The orthopedic surgeon had a number of 3.07 fixations per second while the pediatricians had a number of 2.38 fixations per second. The mean diagnostic accuracy of orthopedic surgeon was 74.4%, of pediatricians 72.92%. and of AI 87%. Conclusion:There is a difference in the way of analyzing radiographs between orthopedic surgeon and pediatric physician.

#43014 : Does fixation of the PMF lead to better long term clinical and radiological outcome in trimalleolar fractures?

Preferred format : a podium presentation OR a poster presentation

Authors:

Amal Chidda (1), Sergio Soares (2), Moritz Tannast (3), Joseph Schwab (3), Angela Seidel (2)

1. Foot and Ankle Department, HFR, Fribourg Cantonal Hospital, Villars-sur-Glâne, Switzerland
2. Foot and Ankle Department, HFR, Fribourg Cantonal Hospital, Fribourg, Switzerland
3. , HFR, Fribourg Cantonal Hospital, Fribourg, Switzerland

Keywords: PMF, ankle fractures, trimalleolar fractures

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objectives: Our first objective was to compare the long term clinical and radiological outcome of patients sustaining a trimalleolar fracture with a posterior malleolar fragment (PMF) between the patients who had a fixation of the PMF and those who didn’t. Our secondary aims were to compare the complication rate and to identify independent risk factors associated with worse outcomes. Methods: We included 69 consecutive patients who were operated between 2008 and 2013. They completed the SF-12 and the EFAS score 10 years after surgery. The radiological osteoarthritis rate was assessed. Their demographics were taken from the chart. The postoperative complications were evaluated according to the Sink classification. The size of the PMF was measured in the preoperative x-ray and CT. Results:21 (30.4%) patients had a fixation of the PMF and 48 (69.6%) hadn’t. Mean follow-up was 11.3 years and mean age 51.4y.o. 9 patients (13.04%) were diabetic and 20 patients (29.4%) smokers. There was no difference between the two group in the long term clinical PROMS nor in degree of osteoarthritis ($p=0.055$). Patients in the fixated PMF group had a higher complications rate ($p<0.0001$) and a higher PMF size. Diabetes was a predictor of negative outcome for the PCS ($p=0.008$) and malreduction of the syndesmosis was a predictor of negative outcome for the EFAS score ($p=0.03$) and osteoarthritis ($p<0.0001$). Conclusion: Long term clinical and radiological outcome are similar in fixated and non-fixated groups despite the higher size of fixed PMF. Fixation of the PMF presents more complications.

#43015 : A comparison of Patients Reported Outcome Measures of Memory Staples vs. Compression Plate in First Metatarsophalangeal Joint Arthrodesis.

Preferred format : a podium presentation

Authors:

Haroon Zaffar (1), Zuha Sohail (2), Turab Syed (1), Efstathios Drampalos (1)

1. , NHS Forth Valley, Glasgow, United Kingdom
2. , NHS Forth Valley, Glasgow, United Kingdom

Keywords: Fusion; hallux valgus; hallux rigidus; metatarsophalangeal joint; staples

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Aim: Arthrodesis of the first metatarsophalangeal joint (MTPJ) is the gold standard for severe hallux rigidus. There are very few studies analysing the use of memory staples. The aim of the study was to review/compare the clinical outcomes and patient satisfaction of memory compression staples and compression plate fixation device for first MTPJ arthrodesis. Method: All patients who underwent 1st MTPJ fusion in a 3 year period using either memory staples or a compression plate were included. Prospectively collected pre and post-operative Manchester–Oxford Foot Questionnaires (MOXFQ), Visual Analogue Score (VAS) and medical records were used. Results: 58 patients (staple group N=14, plate group N=44) included. 54 (93.1%) patients achieved union. There were 4 (6.9%) non union (1 infected), 1 malunion (1.7%) and 2 cases of metalwork prominence (3.4%) treated with revision surgery. The mean VAS score improved from 7.3 pre-operatively to 2.3 post-operatively. Post op MOXFQ score improved by an average of 35.6 points in the staple group and by 23 points in the plate groups (t-score:2.5, p=0.008 in favour of staples) Conclusion: The findings indicate that the use of staples in 1st MTPJ arthrodesis resulted in statistically significant improvement in MOXFQ scores compared to plates possibly related with a lower complication rate. Further research is needed to confirm and justify findings.

#43016 : Double tendon transfer for foot drop: technique modification.

Preferred format : a podium presentation OR a poster presentation

Authors:

Mahmoud Salama (1)

1. Orthopedic department, Aswan university, Aswan, Egypt

Keywords: Foot drop, tendon transfer.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: foot drop is a common deformity which classically used to be corrected with tibialis posterior tendon transfer with bony fixation by pull out sutures (with risks of pressure sores) or bio-absorpable screws (adding cost with failure risk), this classic technique usually results in short donor tendon obligating a maximum tension and loss of excursion leading to the classic expectation of only tenodesis effect. other disadvantages of the classic tendon transfer are the varus supination tendency either due to circumferential medial subcutaneous pathway or with bony tunnel misplacement and neglecting toes extension reconstruction. Aim of the study: analysis of the results reliability and the complication rate of a technique modification of double tendon transfer for foot drop using tibialis posterior to tibialis anterior and extensor hallucius longus plus flexor hallucius longus to extensor digitorum longus and peroneus tertius throught transosseus route with pulvertaft weave. Methods: 5 cases of drop foot managed with this modified technique within 2020, the mean age was 19 years, the mean Follow up was 20 months. Results: mean Stanmore score was 78, mean MRCS dorsiflexion ankle and toes was 4, mean dorsiflexion ROM was 5 degrees, none of the 5 cases needed orthosis and none of them had supination or varus malalignment. Conclusion: the aforementioned technical modification may offer a reliable dynamic tendon transfer results not only a tenodesis effect with low complication rate in comparison with the classic bony fixation avoiding the varus supination position and addressing the usually neglected toes extension.

#43017 : Effect of waiting list time in Patient Reported Outcome Measures for foot and ankle surgery.

Preferred format : a podium presentation OR a poster presentation

Authors:

NIL LECHA NADAL (1), Carlos Sanchez (2), Jan Sanchez Lozano (3), Albert Fontanellas (3), Carlo Gamba (3), Gemma Gonzalez-Lucena (3), Alberto Gines Cespedosa (3)

1. Department of Orthopedic Surgery, Fundacion Asilo Hospital General de Granollers, Barcelona, Spain
2. Department of Orthopedic Surgery, Parc de Salut Mar, Barcelona and Hospital Clinic, Barcelona, Spain, Bogota, Colombia
3. Department of Orthopedic Surgery, Parc de Salut Mar, Barcelona, Spain, Barcelona, Spain

Keywords: Patient Reported Outcome Measures; VAS; EQ-5D; MOXFQ; Waiting list; Foot; Ankle.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Manchester Oxford Foot Questionnaire (MOXFQ), EuroQol-5D and the Pain Visual Analog Scale (VAS) are useful Patient Reported Outcome Measures (PROMs) for assessing patient's health status related to foot and ankle pathology. Surgical waiting lists represent a drawback in the preoperative interpretations of these PROM's results. Methodology Cross-sectional study of consecutive patients of a Foot and Ankle elective surgery waiting list from a University Hospital. Patients filled out the 3 PROMs at the moment they were included in the waiting list and one week previous to the surgery. In order to assess changes in PROMs after the waiting list, a comparative analysis was performed using a Student T-test. A correlation between waiting list time and changes in PROMs was evaluated using a Spearman's test. Results A total of 68 patients were included, mean age of 57.5 (SD 11.9) years. The mean waiting time was 8.4 (SD5.8) months. The pre-waiting list VAS was 62.1 (SD 23.0) and post 61.9 (SD 22.4), without statistically significant differences (p = 0.17). The pre-waiting list MOXFQ index was 60.3 (SD 21.8) and post 58.2 (SD 21.37), without statistically significant differences (p = 0.58). The pre-waiting list EQ-5D Index was 0.61 (SD 0.23) and post 0.59 (SD 0.26), no differences were found as well (p = 0.68). Similarly, no correlation was identified between changes in PROMs and waiting list time (rho -0.16, -0.03 and -0.13). Conclusion Surgical waiting list time does not appear to influence PROMs in patients scheduled for foot and ankle surgery.

#43018 : Arthroscopic treatment for posterolateral Talar process fracture (Shepherd's Fracture): A Case Report

Preferred format : an ePoster Displayed

Authors:

Hachem Mahjoub (1), Ali Ben Hamida (1), Ferid Harrar (1), Hamza Kefi (1), Achraf Abdelkefi (2), Redha Belal (1)

1. Chirurgie Orthopédique, Centre Hospitalier d'Arles, Arles, France
2. Service de chirurgie orthopédique CH Arles, CH arles , Arles, France

Keywords: Talus, Fracture, Arthroscopy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

We report the case of a 36-year-old patient who presented with a posterolateral talar process fracture treated by arthroscopic resection. 36 years old man, consulted our hospital following a sporting accident, causing a right ankle trauma. The mechanism was a forced inversion. Examination found a swollen ankle, painful on palpation with the presence of a bruise on the posterolateral side of the ankle and signs of irritation of the FHL. No associated vasculo-nervous complications. The lateral radiograph revealed an avulsion of the posterior lateral process of the talus. The ankle scan confirmed the diagnosis with a fragment measuring 8mm with significant displacement. A posterior arthroscopy of the ankle was carried aiming to fix the fragment, if possible. After evacuation of the hematoma, the Flexor Hallucis Longus tendon was exposed, the avulsed fragment was finally excised and the fracture site sharpened using the Shaver knife with final testing of the stability of the LFH. the patient started rehabilitation with weight baring at 3rd post-operative week and returned to work at 6 weekspost-operatively. No symptoms suggestive of posterior impingement were found and no sign of irritation of the LFH at the last follow-up (18 months) with no signs of instability or tenosynovitis of the LFH on MRI. the patient resumed his sporting activities from the 4th month postoperatively. We conclude that posterior arthroscopy for postero lateral talar fracture with impingment signs can prevent further complications even after resecting the fragment with no instability or tensynovitis of the FHL

#43019 : ANATOMICAL DESCRIPTION OF THE SPRING LIGAMENT ARTICULAR FACET

Preferred format : a podium presentation

Authors:

Amjad Sawah (1), Sarang Kastur (2), Alastair Bond (3), Lauren Fisher (3), Andrew Fisher (3), Matthew Philpott (2), Lyndon Mason (4), Andrew Molloy (4)

1. Department for Endoprosthetic & Trauma Surgery, Katholisches Klinikum Koblenz - Montabaur, Koblenz, Germany
2. , Liverpool University Hospital NHS Foundation Trust, Liverpool, UK, Liverpool, United Kingdom
3. , Human Anatomy and Resource Centre, University of Liverpool, UK , Liverpool, United Kingdom
4. , Liverpool University Hospital NHS Foundation Trust, Liverpool, UK , Liverpool, United Kingdom

Keywords: Spring ligament. Spring ligament fibrocartilaginous complex. Spring ligament articular facet. Progressive collapsing foot disorder

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: The Spring Ligament Fibrocartilaginous Complex (SLFC), which is essential for stabilizing the medial longitudinal arch, features a little-explored fibrocartilaginous facet within its superomedial aspect, articulating with the talar head. This research aimed to provide a detailed anatomical description of this facet, designated as the Spring Ligament Articular Facet (SLAF). Material and Methods: Nine normally aligned cadaveric lower limbs were dissected, approaching the SLFC from a superior direction. Following talus disarticulation, high-resolution images of the ligament complex were captured and analysed. ImageJ software was used to determine the areas and dimensions of the Superomedial Calcaneonavicular (SMCN) Spring and SLAF. Results: The fibrocartilage facet exhibited a trapezoid shape in all specimens. Mean area for SMCN Spring was 280.39 mm^2, and for SLAF, it was 200 mm^2. Proximal-to-distal length for SLAF averaged 11.78 mm at its longest, and 5.34 mm at its shortest. Attachment of SLAF to calcaneum and navicular showed robust fibrous structures, with average measurements of 3.75 mm and 1.75 mm at medial and lateral calcaneal margins, and 2.75 mm and 2.98 mm at medial and lateral navicular margins, respectively. Conclusion: This study clearly delineated the individual structural components of the SLFC articulating with the talar head and detailed its dimensions, emphasizing the need for more specific anatomical terminology that respects the intricate anatomy of the SLFC.

#43020 : Effectiveness Of Endoscopic Assisted Repair In Achilles Tendon Ruptures

Preferred format : a podium presentation OR a poster presentation

Authors:

Paolo Ceccarini (1), Marco Donantoni (2), Giulia Cenci (1), Susanna Basciani (3), Andrea Marinozzi (4), Rinonapoli Giuseppe (5), Auro Caraffa (5)

1. Dr., University of Perugia, Perugia, Italy
2. Dr., Fondazione Policlinico Universitario Campus Bio-Medico Roma, Roma, Italy
3. , Fondazione Policlinico Universitario Campus Bio-Medico Roma, Roma, Italy
4. Prof., Fondazione Policlinico Universitario Campus Bio-Medico Roma, Roma, Italy
5. Prof., University of Perugia, Perugia, Italy

Keywords: Achilles Tendon Rupture, Endoscopy, Percutaneous Repair

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Achilles tendon rupture is a common injury, tipically occurring during sport activities, primarily affecting men aged between 30 and 40 years. Currently, both conservative and surgical management are considered effective options, and there is no consensus regarding the optimal surgical treatment for acute Achilles tendon ruptures. Our aim was to demonstrate that a percutaneous technique associated to a endoscopic look might lead to better results. Prospective observational study including 94 patients surgically treated for Achilles tendon rupture in our Hospital between December 2017 and January 2020: Group A (30) endoscopy-assisted mini-invasive technique; Group B (30) Ma-Griffith mini-invasive technique; Group C (34) traditional open surgery (Krakow suture). Mean surgery time 42,5 minutes for group A, 33,3 for B and 42,5 for C ($p>0,05$). Same postoperative protocol for all groups, mean follow up 32 months (range 24-60), ATRS and AH-AOFAS, return to sport, to driving and to normal activities were recorded. No statistically significant differences among the groups for all these outcomes. Our study demonstrates results ranging from good to excellent regarding all the three different surgical treatment of Achilles tendon injuries. No significant differences between the techniques were observed. The assistance of endoscopy during Achilles tendon repair seems to be a valid diagnostic and therapeutic tool in the hands of expert surgeons and can be helpful to make suture passage, specially through the proximal lateral portal, safe for the risk of sural nerve injury and useful to verify the gap reduction, and reinforcement of the repaired site when necessary.

#43021 : Combined Surgical Treatment of Plantar Fasciitis: Our Experience

Preferred format : a podium presentation OR a poster presentation

Authors:

Paolo Ceccarini (1), Marco Donantoni (2), Giulia Cenci (1), Susanna Basciani (3), Andrea Marinozzi (4), Rinonapoli Giuseppe (5), Auro Caraffa (5)

1. Dr., University of Perugia, Perugia, Italy
2. Dr., Fondazione Policlinico Universitario Campus Bio-Medico Roma, Roma, Italy
3. , Fondazione Policlinico Universitario Campus Bio-Medico Roma, Roma, Italy
4. Prof., Fondazione Policlinico Universitario Campus Bio-Medico Roma, Roma, Italy
5. Prof., University of Perugia, Perugia, Italy

Keywords: Plantar Fasciitis, Gastrocnemius Release, Plantar Fasciotomy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Plantar fasciitis is a chronic inflammatory disease that causes medial plantar heel pain, significantly impacting daily activities. This condition is very common in clinical practice and conservative therapies leads to complete recovery within 12 months for most patients. However, in some cases, surgical intervention becomes necessary. We prospectively followed 15 consecutive patients treated between January 2022 and June 2023 in Perugia with a combined surgical approach of partial fasciotomy and gastrocnemius release (proximal or Strayer). Active, non-athletic patients who did not respond to conservative therapy after at least 10 months. Average age 46.8, 8 males and 7 females. Pre- and post-operative AOFAS and return to normal activities were recorded, with an average follow-up of 9 months. AOFAS scores improved from 45.2 to 85.6 ($p<0.05$). Return to normal activities in 86.7% (13/15). 2 cases of gastrocnemius hematoma and 1 of delayed plantar wound healing, all resolved. Historically, the surgical treatment for chronic plantar fasciitis resistant to conservative therapy was open and later endoscopic partial fasciotomy. One hypothesis for surgical recurrences or failures is the lack of attention to the Achilles-plantar complex. The combined approach of partial fasciotomy and gastrocnemius release used in our case series aims to address this issue. In patients resistant to conservative therapies, our experience suggests that the combined approach of partial fasciotomy and gastrocnemius release yields excellent results. However, it is necessary to expand our case series and further investigate the biomechanical role of the gastrocnemius in the long-term postoperative period.

#43022 : Posterior Malleolus Fixation In Trimalleolar Fractures: Percutaneous Anteroposterior Screw versus Open Posterolateral Plate

Preferred format : a podium presentation OR a poster presentation

Authors:

Marco Donantoni (1), Paolo Ceccarini (2), Giulia Cenci (2), Susanna Basciani (3), Andrea Marinozzi (4), Rinonapoli Giuseppe (5), Auro Caraffa (5)

1. Dr., Fondazione Policlinico Universitario Campus Bio-Medico Roma, Roma, Italy
2. Dr., University of Perugia, Perugia, Italy
3. , Fondazione Policlinico Universitario Campus Bio-Medico Roma, Roma, Italy
4. Prof., Fondazione Policlinico Universitario Campus Bio-Medico Roma, Roma, Italy
5. Prof., University of Perugia, Perugia, Italy

Keywords: Ankle Fractures, Posterior Malleolus, Posterolateral Approach

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Historically fixation of the posterior fragment was for a posterior fragment larger than 25% of the involved intra-articular surface, but recent literature suggests that better outcomes can be achieved by also fixating smaller posterior fragments. Several studies showed a correlation between postoperative step-off and osteoarthritis and worse functional outcomes. In recent years posterolateral ORIF with plate gain in popularity compared with traditional percutaneous anteroposterior screw fixation. The aim of our study was to compare radiological and functional outcomes between these two approaches. Multicenter retrospective study including 54 consecutive patients with trimalleolar fractures treated with osteosynthesis of the third malleolus between January 2020 and May 2022 at Perugia and Cesena Hospitals. Percutaneous anteroposterior screws in 34 patients and posterolateral ORIF with plate in 20 patients. Functional bone healing in all patients, no delayed union or nonunion. Mean follow-up 21 months. AOFAS score and difference in ROM as clinical outcomes, residual articular step-off as main radiological outcome. No significant differences between the two approaches in AOFAS scores and ROM postoperatively. Articular postoperative step-off >2mm in 21 patients (38.9%): 4 plates and 17 screws ($p<0.05$). In our experience posterolateral ORIF with plate for posterior malleolus fracture leads to better postoperative radiographic results compared to percutaneous anteroposterior screw fixation. This seems to be independent from fracture's size but correlated with the achievement of anatomical reduction of tibial plafond, fibular notch and stability of the syndesmosisis. Percutaneous screw fixation continues to be a valid option especially for big fragments or patients with controindications for ORIF.

#43025 : Outcomes of total talus replacement using 3D-printed titanium prosthesis, a case series

Preferred format : a podium presentation

Authors:

Bom Soo Kim (1), Myung-Geun Song (2)

1. Orthopaedic Surgery, Inha University Hospital, Incheon, Republic of Korea
2. Orthopaedic Surgery, Catholic Kwandong University International Saint Mary's Hospital, Incheon, Republic of Korea

Keywords: Talus, Avascular necrosis, Total talus replacement

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Total talus replacement (TTR) has become a notable treatment option for patients with talar avascular necrosis (AVN). However, the effectiveness of pure titanium prostheses remains less explored. This study aims to evaluate the clinical outcomes of TTR using a pure titanium prosthesis. Methods From May 2021 to May 2024, 25 patients with talus AVN underwent TTR at Inha University Hospital using customized 3D-printed pure titanium prostheses (Cubelabs, Seoul). 14 patients with a follow-up period exceeding six months were included for analysis. Evaluations of clinical and radiological outcomes were conducted preoperatively and at 3, 6, 12, 24, and 36 months post-operation. Outcomes assessed included VAS, Foot Function Index (FFI), Foot and Ankle Outcome Score (FAOS), EQ-5D, and patient satisfaction. Data were analyzed using Wilcoxon signed rank tests. Results The average follow-up duration was 10.3 months (range, 6–36 months). Preoperative VAS pain scores averaging 8.27±0.81 decreased to 1.42±1.95 (range, 0-7) at final follow-up. FAOS significantly improved from 20.1±11.3 to 67.01 ± 20.9($P < 0.05$), and FFI scores decreased from 83.8±10.1 to 21.51±17.58 ($P<0.05$). EQ-5D increased from 0.48±0.22 to 0.78±0.15. Range of motion improved from 37.1±20.7 degrees to 93.9±21.7degrees. 11 patients(76%) were very satisfied, 3 were satisfied(24%). No significant complications were reported. Conclusion: Short-term outcomes for TTR using pure titanium prostheses are promising, with significant improvements in pain and function without major complications. Extended follow-up is required to assess long-term outcomes and durability.

#43027 : Supramalleolar tibia osteotomies as ankle preservation surgery: our experience in a case series

Preferred format : a podium presentation

Authors:

Jan Martinez-Lozano (1), Albert Fontanellas Fes (1), Carlo Gamba (2), Gemma González-Lucena (2), Alberto Ginés-Cespedosa (2, 3)

1. Cirurgia Ortopèdica i Traumatologia, Hospital del Mar, Barcelona, Spain
2. Unitat de Peu i Turmell, Cirurgia Ortopèdica i Traumatologia, Hospital del Mar, Barcelona, Spain
3. Traumatología Lenox, Clínica Corachan, Barcelona, Spain

Keywords: Ankle preservation surgery, supramalleolar tibia osteotomies, SMOT

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Ankle joint-preserving surgery, specifically supramalleolar osteotomies (SMOT), is an effective therapeutic option for treating ankle osteoarthritis in young patients. There is a lack of evidence in the literature regarding its indications and, especially, mid to long-term outcomes. The objective of this study is to evaluate the functional and radiological results one year postoperatively and postoperative survival in a series of patients treated with SMOT. A retrospective study was conducted, including 18 patients (18 ankles) who underwent SMOT between 2018 and 2021. Radiological variables, such as the correction of the anterior tibial surface angle (TAS) one year postoperatively, were evaluated. To assess functional outcomes, we used the Manchester Oxford Foot Questionnaire (MOXFQ) and the visual analog scale (VAS) for pain, preoperatively and at the one-year follow-up. We also evaluated the survival of the osteotomy at the end of the follow-up. The mean follow-up time was 47 months (SD:9). In varus ankles, the preoperative TAS of 83° (SD: 2.6°) was corrected to 92° (SD:2.5°), achieving overcorrection in 37.5% of cases. In the valgus ankle group, the preoperative TAS of 93° (SD:3.4°) was corrected to a postoperative TAS of 85.3° (SD:6.1°), achieving overcorrection in 70% of cases. The survival rate of SMOT was 88% at 4 years of follow-up. Functionally, the mean VAS decreased from 58.2 (SD:16.9) to 35.67 (29.0) ($p=0.05$), and the MOXFQ showed statistically significant improvement in all domains ($p<0.05$). SMOT lead to good functional and radiological results one year after surgery, with high mid-term survival.

#43044 : The occurrence of Osteochondral Lesions of the Talus alongside Anterior Talofibular Ligament injuries, and the value of using clinical presentation to guide imaging decisions.

Preferred format : a podium presentation

Authors:

Dhivakaran Gengatharan (1), Walter Wong Soon Yaw (1), Inderjeet Singh Rikhraj (1), Eric Cher Wei Liang (1)

1. Orthopedic Surgery, Sengkang General Hospital, Singapore, Singapore

Keywords: Anterior talofibular ligament; ankle sprain; osteochondral lesion of talus; magnetic resonance imaging.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Low ankle sprains are a prevalent issue, often involving the anterior talofibular ligament (ATFL). While there is increasing attention on ligamentous injuries in ankle sprains, cartilaginous injuries are frequently overlooked. This article aims to (1) evaluate the significance of magnetic resonance imaging (MRI) in ATFL injuries to detect concurrent osteochondral lesions of talus (OLT) as well as associated ligamentous injuries; (2) determine the importance of clinical presentation and its correlations with risk of concomitant OLT in low ankle sprains. Material and Methods: We performed a retrospective analysis of 129 patients who underwent ATFL reconstruction. The patient data were reviewed to assess the incidence of OLT and other injuries concurrent with ATFL injury. Additionally, we examined the pre-operative clinical symptoms to identify any signs that could indicate the presence of OLT, prompting clinicians to consider a preoperative MRI scan for these subsets of patients. Results: A total of 31.8% (n=41) of patients with ATFL injuries of varying degrees were found to have concurrent OLT.. Further subset analysis of this group revealed that 78% (n=32) of these patients exhibited joint line tenderness, compared to 34.1% (n=30) of patients in the group without concurrent OLT. Of note, symptoms of instability appear to be comparable between both groups (75.6% with OLT vs 83% without OLT). Conclusion: This study concludes that patients with symptoms of joint line tenderness and chronic instability (>3months) should have a pre-operative MRI study as they are more likely to have concomitant OLT injury.

#43046 : Tibialis anterior tendon transfer using bone anchor for dynamic supination in congenital talipes equinovarus. Our experience

Preferred format : an ePoster Displayed

Authors:

Laura Corominas (1), lydia De Sena (1), Anna Ey (1)

1. pediatric Orthopedic, Hospital Sant Joan de Deu, Barcelona, Spain

Keywords: clubfoot relapse, tibialis anterior tendon transfer,ponseti method

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Tibialis anterior tendon transfer (is a recognised procedure for the treatment of recurrent congenital talipes equinovarus. The most common technique in use requires three skin incisions and breaching of the plantar tissues, risking pressure areas and damage to neurovascular structures. There have been no studies showing the clinical results of the use of a bone anchor to secure the tendon without drilling through the lateral cuneiform This study presents the largest series of outcomes for such a procedure. Retrospective case series. Hundred fifty three feet were identified in 87 children with a male-to-female ratio of 1:1.26 the average age at surgery of 5.6 years, and an average follow-up of 4.4 years. There were no cases of pullout of the anchor. 4 cases (3%) 3 required surgical revisión due to persistent dynamica supination due to lack of anchor tensión. And one due to discomfort from the suture.One hundred forty eight cases (97%) had no recurrence of dynamic supination on follow-up. At 3 months after surgery, eversion-to-inversion strength, plantar loading, and function and satisfaction were evidentConsistently reliable, reproducible and safe fixation of the tibialis anterior tendon in TATT can be achieved using a bone anchor for the treatment of dynamic supination in children with clubfeet following correction using the Ponseti method and is a quick and straightforward alternative method to traditional techniques.

#43048 : Endoscopic DORR Procedure for Recalcitrant Plantar Fasciitis: Early Clinical and Radiological Outcomes

Preferred format : a podium presentation OR a poster presentation

Authors:

Walter-Soon-Yaw Wong (1), Dhivakaran Gengatharan (1), Wen Xian Png (1), Eric Wei Liang Cher (1)

1. , Sengkang General Hospital, Singapore, Singapore

Keywords: Plantar Fasciitis, Endoscopic, Minimally Invasive, Recalcitrant, Surgery, Novel, Technique

Your abstract (DO NOT add the title, list of authors or keywords in this field)

The DORR procedure is a novel, fully endoscopic technique for treating plantar fasciitis. It combines supra-fascial plantar Debridement, calcaneal spur Ostectomy, Radiofrequency microtenotomy, and partial medial plantar fascia Release via a biportal suprafascial approach, with an optional gastrocnemius release. This procedure aims to tackle the highly complex, multifaceted nature of plantar fasciitis by incorporating the most performed and proven techniques under endoscopic guidance whilst leveraging on its minimally invasive surgery to improve short term outcomes. This study evaluated the early outcomes of this procedure in patients with recalcitrant plantar fasciitis. Fifteen patients with plantar fasciitis refractory to conservative treatment for over 6 months, and with MRI confirmation of fasciitis and calcaneal bony edema, underwent the DORR procedure. Functional outcomes were assessed using VAS, AOFAS, and EFAS scores pre-operatively and at 6 months post-operatively. Post-operative MRI evaluated radiological improvement. All patients will be followed up for a minimum of 6 months. At this time of review, significant improvements were observed in all three functional outcome scores compared to pre-surgery measurements. VAS scores improved from 7.5 to 1.75, AOFAS scores increased from 32 to 89, and EFAS scores increased from 6 to 14.3. Post-operative MRIs performed at 6 months showed near-complete resolution of bony edema at the calcaneal-fascia interface in all patients. No patients reported persistent plantar fasciitis pain and no significant complications were noted. The DORR procedure appears to be a safe and effective treatment for recalcitrant plantar fasciitis, demonstrating significant early improvements in functional outcomes and radiographic healing.

#43049 : Title: Predicting Residual Syndesmotic Instability in SER Stage IV Trimalleolar Ankle Fractures: The Influence of Medial Malleolar Fracture Morphology

Preferred format : an ePoster Displayed

Authors:

Sung Hun Won (1), Chun Dong-il (2), Ahn Chi young (1)

1. Orthopaedic Surgery, Soonchunhyang University Hospital Seoul, Seoul, Republic of Korea
2. , Soonchunhyang University Hospital Seoul, Seoul, Republic of Korea

Keywords: Trimalleolar ankle fracture, Syndesmotic instability, Deltoid ligament

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Injuries to the deltoid ligament around the ankle mortise can exacerbate syndesmotic instability. This study aims to determine whether residual syndesmotic instability following bony fixation of SER type IV trimalleolar ankle fractures can be predicted preoperatively through the analysis of medial malleolar fracture morphologies. Methods This study included 60 consecutive patients with SER type IV trimalleolar ankle fractures who underwent bony fixations. Patients were retrospectively divided into two groups based on the presence of trans-syndesmotic screws on postoperative radiographs. Binary logistic regression analysis was performed to identify factors significantly contributing to residual syndesmotic instability after bony fixation. Results The stable and unstable groups comprised 31 and 29 patients, respectively. Significant differences were found between the two groups in plain radiograph measurements (medial malleolar fracture fragment width, $p = 0.0028$; medial malleolar fracture fragment height, $p < 0.001$) and CT measurements (medial malleolar fracture morphology, $p < 0.001$). The binary logistic regression model, utilizing a stepwise selection method, identified medial malleolar fracture morphology as a significant factor for residual syndesmotic instability post-fixation. However, MRI measurements did not significantly differ between the groups. Conclusion This study demonstrates that medial malleolar morphology, which may not ensure complete deltoid ligament restoration through bony fixation, contributes to residual syndesmotic instability regardless of deltoid ligament tears observed on preoperative MRI. Therefore, it is recommended that surgeons consider additional syndesmotic stabilization following bony fixation of all three malleolar fractures, particularly in cases of intercollicular medial malleolar fractures.

#43053 : Manchester Oxford Foot Questionnaire in Foot and Ankle Spanish patients: Transcultural adaption and validation.

Preferred format : an ePoster Displayed

Authors:

Jan Martinez-Lozano (1), Pablo Ruiz-Riquelme (2, 3), Gemma González-Lucena (4), Carlo Gamba (4), Alberto Bailez (5), Albert Fontanellas Fes (1), Alberto Ginés-Cespedosa (4, 6)

1. Cirurgia Ortopèdica i Traumatologia, Hospital del Mar, Barcelona, Spain
2. Foot and Ankle Surgery Unit, Department of Orthopedics and Traumatology, Clínica Las Condes, Santiago, Chile, Santiago, Chile
3. Foot and Ankle Surgery Unit, Department of Orthopedic and Traumatology, Hospital Clínico La Florida, Santiago, Chile, Santiago, Chile
4. Unitat de Peu i Turmell, Cirurgia Ortopèdica i Traumatologia, Hospital del Mar, Barcelona, Spain
5. Cirurgia Ortopèdica i Traumatologia, Clínica Corachan, Barcelona, Spain
6. Traumatología Lenox, Clínica Corachan, Barcelona, Spain

Keywords: MOXFQ, PROMs, validation, cross-cultural adaption

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Health perceptions of patients require an objective tool for clinicians to evaluate subjective improvements. Thus, patient-related outcome measurements (PROMs) have gained importance. Although the Manchester Oxford Foot Questionnaire (MOXFQ) has proven effective in measuring subjective changes in foot and ankle surgery, there was no version suitable for our patients in Spain. The objective of our study is to perform a cross-cultural adaptation of the MOXFQ into Spanish and to quantify its psychometric properties. A transcultural adaptation of the MOXFQ was carried out using the "forward-backward" method. The reproducibility of this version was verified by calculating the Intraclass Correlation Coefficient (ICC) through a test-retest process with 42 patients. 102 consecutive patients undergoing elective foot and ankle surgery between Feb-2021 and Mar-2022 were recruited prospectively and completed the MOXFQ, EURO-QoL 5D and a pain visual analog scale (VAS), both preoperatively and 1-year postoperatively. Also, its psychometric properties were evaluated: internal consistency (Cronbach's Alpha); ceiling and floor effects; pre-post sensitivity (Effect size, ES); construct validation (Spearman's Rho correlation); and clinically relevant change (MCIC) for all domains. The reproducibility of the translation-adaptation was excellent with an ICC of 0.94 for the index domain. The questionnaire demonstrated strong internal consistency with high Cronbach's Alpha values (Cronbach’s Alpha>0.80) and sensitivity (ES from 0.79 to 1.27). The MCIC values were 15.9 points for MOXFQ-index, similar across all domains. The cross-cultural adaptation of the MOXFQ has demonstrated good psychometric properties in Spanish-speaking patients undergoing elective foot and ankle surgery.

#43054 : Rethinking surgical incisions for trimalleolar ankle fracture - a novel surgical technique

Preferred format : a podium presentation OR a poster presentation

Authors:

Seng Wong (1), Jiajun Feng (2), Eric Cher (1)

1. Orthopaedic Surgery, Singhealth, Singapore, Singapore
2. , Singhealth, Singapore, Singapore

Keywords: Ankle fracture, trimalleolar fracture, wound complications, surgical incisions

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction/ Purpose High energy tri-malleolar ankle fracture remains a challenge due to its propensity for wound complications. Commonly used postero-lateral and direct medial approach has its own drawbacks. The postero-lateral approach offers adequate visualisation of the deeper posterior malleolus but limited access to the fibula proximally and makes direct lateral plating difficult. Whereas the direct medial approach may lead to closure and wound complications as incisions are often directly over the fixation. This study proposes a new curvilinear incision for both the postero-lateral and medial approaches to overcome the challenges of exposure and wound healing. Methods On the medial malleolus, a curvilinear incision around the medial malleolus with a broad base posterior flap over angiosomes derived from posterior tibial artery(PTA) is designed. This allows full exposure and eventual flap coverage over the medial malleolus, without having the incisions centered over the implants. On the lateral malleolus, a curvilinear postero-lateral incision over fibular was designed based on the anterior perforating and calcaneal branches of peroneal artery(PA). This incision creates an anterior flap over the fibula distally. Outcomes measured in this series includes time to healing, wound related complications and need for surgical intervention. Results In our early series of five consecutive patients with closed tri-malleolar ankle fractures treated with a dual surgical incision, all of them required three malleolar fixations with plates and screws. Recovery for this group were uneventful, with no wound related complications that requires surgical interventions. All patients in this series exhibit excellent reduction and fixation radiographically.

#43055 : Orthoplastic Techniques for Diabetic Ulcer Limb Salvage Surgery - The Major Trauma Approach

Preferred format : a podium presentation

Authors:

Iris Kwok (1), Arvind Mohan (1), Kshemendra Senarath-Yapa (1), Naveethan Sivanadarajah (1)

1. , Imperial College Healthcare NHS Trust, London, United Kingdom

Keywords: diabetes, diabetic foot, diabetic ulcer, orthoplastics, multidisciplinary team, limb salvage

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction The last decade has seen an exponential expansion in diabetic foot research and the development of diabetic foot services in the UK. Most MDT services are led by diabetologists, vascular surgeons, orthopaedic surgeons and podiatrists. Whilst established plastic surgery techniques have long been used in the major trauma setting, the same techniques historically described in diabetic patients has yet to become a mainstream option in diabetic ulcer limb salvage care. Methods We retrospectively reviewed our tertiary centre experience of a series of 12 joint orthoplastic diabetic neuropathic ulcer cases between 2020-24 all of whom a below knee amputation was deemed a potentially suitable treatment option. Results We achieved limb salvage in 92% of patients (11/12), with a mean age of 63 years old. Mean follow up time was 19 months. A bespoke orthoplastic major trauma approach to diabetic foot care was employed, using free flaps, microvascular techniques, local flaps, one-time aggressive bony resection with direct closure, skin and synthetic grafts. In particular, one patient who had been treated for a chronic ankle ulcer for over 5 years attended over 173 outpatient appointments. After a joint orthoplastics procedure, his ulcer healed completely within 4 months. Conclusion A clear soft tissue coverage plan is integral to successful limb salvage. Our bespoke orthoplastic major trauma approach has been shown to be a clinically and cost-effective alternative to existing pathways and highlights the importance of the previously overlooked role of plastic surgeons in the surgical planning and management of chronic diabetic foot ulcers.

#43060 : Localization of calcaneal Schanz pin without fluoroscopy - is it safe?

Preferred format : a podium presentation OR a poster presentation

Authors:

Fatih Barça (1), Ekin Barış Demir (1), Mustafa Fatih Sarı (1), Mutlu Akdoğan (1), Halis Atıl Atilla (1), Yalım Ateş (1)

1. Orthopedics and Traumatology, Ankara Etlik City Hospital, Ankara, Turkey

Keywords: external fixator, ankle fracture, safe zone, calcaneal Schanz pin

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objectives: Intraoperative control with fluoroscopy is frequently used for calcaneal Schanz pin placement. In our clinical practice, we observed that we did not encounter any neurovascular problems in the ankle fractures in which we applied external fixation when we placed Schanz pins approximately one finger proximal and anterior to the posteroinferiormost edge of calcaneus without the help of fluoroscopy. Our aim was to evaluate the rate of the Schanz pins applied with this simple technique that were within the previously defined safe zone and to evaluate the distance from the radiographic landmarks. Methods: X-ray images of 45 patients (21 males, 24 females, mean age 44.1±16.9 years) who underwent external fixation for ankle fracture in our clinic were retrospectively analyzed. After alignment of the ankle with manual traction, Schanz pin was inserted at an angle perpendicular to the tibial crest and parallel to the ground, one finger distance proximal and anterior to the point where the calcaneus could be palpated. Post-fixator neurovascular examinations were noted and the distance of the Schanz pin entry mark to landmarks (posteroinferior calcaneus and medial malleolus) and whether this point was located within the safe zone were evaluated on the radiographs taken after definitive surgery. Results: Entry mark was 38.78±7.87 mm from medial malleolus and 25.47±6.69 mm from posteroinferior aspect of the calcaneus. All but five patients were within the safe zone (88.9%). No neurovascular manifestations were observed. Conclusion: Calcaneal Schanz pin placement without fluoroscopy is safe and consistent with its simple application.

#43061 : Comparison of two osteotomies in terms of radiologic and morphologic improvement in moderate and severe hallux valgus

Preferred format : a podium presentation OR a poster presentation

Authors:

Fatih Barça (1), Ekin Barış Demir (1), Bekir Doğan (1), Mutlu Akdoğan (1), Halis Atıl Atilla (1), Yalım Ateş (1)

1. Orthopedics and Traumatology, Ankara Etlik City Hospital, Ankara, Turkey

Keywords: hallux valgus, forefoot width, Manchester grading scale, osteotomy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

INTRODUCTION There is no consensus for choice of osteotomy in moderate and severe hallux valgus. We aimed to investigate difference in correction of forefoot width and morphologic improvement in patients with moderate and severe hallux valgus operated with distal chevron and Scarf osteotomies. METHODS 62 patients who underwent distal chevron and Scarf osteotomy for moderate and severe hallux valgus (52 females, 10 males, age 41.4±16.7 years) were included in our study. Correction of hallux valgus angle (HVA), intermetatarsal angle (IMA), bone and soft tissue shadow distance between 1st-5th metatarsal heads were evaluated in preoperative and post-operative third-month radiographs. Manchester grading system based on photographs of foot was used to evaluate morphological improvement after surgery. Patients were divided into two groups according to surgical method and the parameters were compared. RESULTS 26 patients underwent distal chevron osteotomy and 36 patients underwent Scarf osteotomy. The improvement in IMA (1.2°±2° - 4.7°±3.4° , p<0.001) and HVA (9.4°±5.1° - 13.°6±7.1° , p=0.014) were significantly greater in Scarf group. 1st-5th metatarsal head distance correction (1.14±6.97 mm - 3.46±5.74 mm, p=0.157) and distance between mediolateral soft tissue shadows (2.11±8.28 mm - 2.55±5.98 mm, p=0, 805) were not significantly different. 20 patients (76.9%) in the distal chevron group and 26 (72.2%) in the Scarf group had improvement according to Manchester scale (p=0.676). CONCLUSION Scarf osteotomy provided significant improvement in IMA and HVA compared to distal chevron osteotomy, but there was no statistically significant difference in terms of correcting morphologic appearance of foot and radiologic parameters of forefoot.

#43064 : Complex case of tibial pseudarthrosis and large bone defect with good results

Preferred format : a podium presentation OR a poster presentation

Authors:

Joana Azevedo (1), Paulo Cunha (1), Tiago Barbosa (1), João Pereira (1), Guilherme França (1), Pedro Varanda (1), Marta Maio (1)

1. Orthopedics and Traumatology, Hospital de Braga, Braga, Portugal

Keywords: Pseudarthrosis; Pilon fracture; Circular external fixator; Bone defect;

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Treatment of large bone defects is challenging and numerous options are available. The conventional techniques of grafting and stabilization may not be sufficient for some larger and complex cases. The external fixation has shown to be very effective, particularly the circular fixation techniques offer the capacity of simultaneously correcting the defect and promoting bone growth without using bone grafts, while allowing weight-bearing. We present a 41 years-old woman, with multiple sclerosis and a history of right tibial pilon and distal peroneus fractures, submitted to plating osteossínthesis of the tibia, without correction of peroneus fracture due to poor skin condition. 8 months after, due to pseudarthrosis of the tibia, she was submitted to plate extraction, osteoclasis, realignment osteotomies, cruentation and osteossínthesis. 2 years after, due to persistent pseudarthrosis and material failure, she underwent material extraction, segmental bone exeresis, cement filling and monoplanar external fixator. The intraoperative cultures grew a Staphylococcus aureus methicillin susceptible. After fulfilling a 7 week antibiotherapy plan, due to a bone defect of approximately 7 centímeters, she was submitted to cement extraction, proximal tibial bone transport and fixation with hexapod external circular fixation. After two years the external circular fixation was finally removed. The bone defect was corrected and a total of 6 centímeters of new bone was achieved. One month later, a computed tomography diagnosed an aligned fracture of the new bone segment and conservative treatment was opted. At the moment, she has no complaints of pain with full weight-bearing and a good radiological outcome was reached.

#43065 : Fracture of the fifth metatarsal in the pediatric patient - what to do? A Literature review

Preferred format : a podium presentation OR a poster presentation

Authors:

Patrícia Vaz da Cunha (1), Fernando Macedo (2), Miguel Rocha (3), Rui Matos Cerqueira (3), João Lucas (3), João Soeima (3), Inês Monteiro Henriques (3), José Luís Simães (3), Maribel Gomes (3), António Moreira (3)

1. , , Guimaraes, Portugal
2. HSOG, HSOG, guimarães, Portugal
3. HSOG, , Guimarães, Portugal

Keywords: pediatric, fifth metatarsal fracture

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Fifth metatarsal fractures are the most common metatarsal fracture in children, accounting for 6% of pediatric fractures. Sparse studies on pediatric fractures lead to treatment based on adult data, causing uncertainty and sometimes unnecessary follow-up.This study reviews the literature regarding fifth metatarsal fractures in children.Herrera-Soto etal.reviewed 103cases, with an average healing time of 4to12 weeks. Jones fractures took longer and had higher complication rates, particularly refracture. Surgical treatment was used only for Jones fractures (2 out of 15 patients) and refractures; others received conservative treatment with short-leg walking casts or non-weight-bearing casts. A classification was proposed:apophyseal (type I), intra-articular (type II), Jones (type III), diaphyseal (type IV), and neck (type V). Mahan etal.evaluated 238 pediatric patients, with 15 undergoing surgery due to symptomatic nonunion,delayed-union,or refracture. Surgery was more likely for fractures 20to40mm from the proximal metatarsal, which had a higher risk of delayed union or nonunion. Meschino etal.reviewed 114 cases (average age 11.2 years). No correlation was found between fracture location,type,immobilization duration and complications. Lee etal.found a significant association between fracture location and immobilization period, and return to sport. Proximal fractures healed faster and required shorter immobilization than distal fractures. They introduced a new classification system:apophyseal, metaphyseal, and diaphyseal fractures, effective in predicting healing times. Therefore,conservative treatment is generally recommended for fifth metatarsal fractures in children due to the low complication rate. Proximal fractures, especially apophyseal, have a good prognosis and shorter immobilization periods. Fractures located 20to40mm from the base have a higher risk for complications and may require surgery.

#43067 : Subtalar arthrodesis in patients with prior tibiotalar arthrodesis for posttraumatic osteoarthritis

Preferred format : a podium presentation

Authors:

Laetitia Theunissen (1), Paul-André Deleu (2), Ivan Birch (3), Nils Reymond (4), Bernhard Devos Bevernage (2), Pierre Maldague (2), Vincent Gombault (2), Corentin Malherbe (2), Thibaut Leemrijse (2)

1. , Foot and Ankle Institute, Bruxelles, Belgium
2. , Foot and Ankle Institute, Brussels, Belgium
3. , Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, United Kingdom
4. , Centre Assal, Genève, Switzerland

Keywords: subtalar arthrodesis, tibiotalar arthrodesis, fusion

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: The tibiotalar arthrodesis for end-stage ankle osteoarthritis is a surgical procedure that leads to a modification of the kinematics of the adjacent joints and may result in the development of secondary osteoarthritic degeneration of the subtalar joint. It has previously been observed that subtalar arthrodesis in this context shows a lower fusion rate than isolated subtalar arthrodesis. This retrospective study reports the results of subtalar joint arthrodesis with previous ipsilateral tibiotalar arthrodesis and suggests some factors that may compromise the fusion of the joint. Methods: Between September 2010 and October 2021, 15 arthrodeses of the subtalar joint with screw fixation were performed in 14 patients, with a fusion of the ipsilateral tibiotalar joint. Fourteen of 15 cases used an open sinus tarsi approach, 13 were augmented with iliac crest bone graft, and 11 had supplemental demineralized bone matrix (DBM). The outcome variables were fusion rate, time to fusion, and revision rate. Fusion was assessed by radiographs and computed tomography scan. Results: Twelve of the 15 subtalar arthrodeses (80%) fused at the first attempt with an average fusion time of 4.7 months. Conclusion: In this limited retrospective case series, compared to the fusion rate of isolated subtalar arthrodesis reported in the literature, the rate of subtalar fusion in the presence of an ipsilateral tibiotalar arthrodesis was found to be lower.

#43071 : Successful Achilles tendon reattachment using SpeedBridge in Haglund’s triad patients – a retrospective observational study

Preferred format : a podium presentation OR a poster presentation

Authors:

Roberto Bevoni (1), Elena Artioli (2), Giammarco Gardini (1), Silvio Caravelli (1), Massimiliano Mosca (1)

1. , Istituto Ortopedico Rizzoli, Bentivoglio, Italy
2. , Istituto Ortopedico Rizzoli, Bologna, Italy

Keywords: Achilles tendon, Tendinopathy, Heel pain, Haglund, SpeedBridge

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction The surgical approach for Haglund's triad remains debated. This study presents pioneering data on Achilles tendon reattachment using the SpeedBridge technique following partial detachment, retrocalcaneal bursa excision, and Haglund prominence resection in patients with Haglund's triad. Methods A retrospective observational study was conducted on patients who underwent a surgical treatment for Haglund's triad. The procedure involved a posterior central Achilles tendon splitting approach, partial tendon detachment, tendon debridement, retrocalcaneal bursa excision, Haglund prominence resection, and Achilles tendon reattachment using the SpeedBridge anchor system. Patients' demographic data, along with pre-operative and post-operative assessments at 6 and 12 months using the VAS (Visual Analog Scale), AOFAS (American Orthopaedic Foot & Ankle Society) score, and SF-36, were collected. Results Nine patients with a mean age of 53.8 years underwent surgery. Results indicated a significant improvement ($p<0.0001$) in VAS, AOFAS, and SF-36 at the 12-month follow-up. The mean VAS pain score improved from 7.4 ± 0.5 preoperatively to 4.5 ± 1.4 at 6 months and 1.9 ± 1.2 at 12 months postoperatively. Concurrently, the mean AOFAS increased from 60.8 ± 9.7 preoperatively to 71.6 ± 13.4 at 6 months and 97.8 ± 5.3 at 12 months. Similarly, the mean SF-36 enhanced from 35.8 ± 3.8 preoperatively to 66.7 ± 8.9 at 6 months and 87.2 ± 8.5 at 12 months. Conclusions The use of SpeedBridge for Achilles tendon reattachment, alongside the aforementioned procedures, demonstrated promising outcomes that need to be confirmed in future randomized studies with larger sample sizes.

#43074 : Is there still a place for calcaneo stop procedure in the treatment of pes planus valgus in childhood?

Preferred format : a podium presentation

Authors:

PEDRO MANUEL CORREIA MAGRO (1)

1. ORTOPAEDIC DEPARTMENT, HOSPITAL CASCAIS, ALGES, Portugal

Keywords: pediatric flexible flatfoot, endosinotarsal devices , exoarticular screw

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Since in the year 1972 Recaredo Alvarez proposed the calcaneo stop technique by the use of a simple cancelous screw for subtalar extra articular arthroereisis , a number of endosinustarsal devices have been purposed for the correction of pediatric flexible flatfoot.Nevertheless scarce literature is available comparing the outcomes between these two techniques . The post operative evaluation of more then 250 feet operated by us with both techniques in the last twenty years using the calcaneal pitch and Meary's angle(as primary outcomes) as well as the AOFAS score (as secondary outcome) , showed no statistical significant difference between those two groups . So we defend that the use of a exosinotarsal screw is still an optimal procedure for the correction of flexible symptomatic flatfoot in childhood as it is cheap , simple and can be performed rapidly .

#43075 : Improved cartilage healing following matrix induced chondrogenesis in the treatment of hallux rigidus

Preferred format : a podium presentation OR a poster presentation

Authors:

Daran Huang (1), Rikhraj Inderjeet Singh (1), Wenxian Png (1), Eric Wei Liang Cher (1)

1. , Department of Orthopaedic Surgery, Sengkang General Hospital, Singapore, Singapore

Keywords: Hallux rigidus, First metatarsophalangeal joint, Osteoarthritis, Matrix induced chondrogenesis, Autologous, Chondroplasty, Cheilectomy, Distal oblique osteotomy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Hallux rigidus (HR) is a degenerative joint disease that causes significant pain and loss of function to the first metatarsophalangeal (MTPJ) joint. We present our case series of moderate to severe HR managed with a combination of procedures including cheilectomy, dorsal oblique osteotomy (DOO) and matrix induced chondrogenesis (MIC) in the form of scaffold implantation with bone marrow aspirate concentrate (BMAC). MRI T2RV mapping of the cartilage was used to evaluate the viability and integration of the implanted acellular graft following the joint preserving surgery. The single stage procedure was performed via a longitudinal dorsal approach over the first MTPJ, followed by cheilectomy and DOO. The cartilage defect over the metatarsal head was prepared and an adequately sized acellular graft soaked with BMAC was used to fill the void. Postoperatively, a forefoot offloading shoe was used for 4 weeks, followed by progressive range of motion. At 1 year, the MRI T2RV sequence of the MTPJ cartilage showed good internal homogeneity within the implanted scaffold, suggestive of reasonable cartilage viability. The intrasubstance T2RV range was observed to be healthy. The images also displayed adequate articular surface congruency, without internal layer formations. The edges of the implanted graft were flush to the surrounding native cartilage, indicating reasonable integration with the native cartilage. In addition, there was good adherence of the graft to the bony surgical bed with no detachment. The addition of MIC was able to significantly improve cartilage healing in the treatment of HR.

#43076 : Improved clinical outcomes following matrix induced chondrogenesis in the treatment of hallux rigidus

Preferred format : a podium presentation OR a poster presentation

Authors:

Daran Huang (1), Rikhraj Inderjeet Singh (1), Wenxian Png (1), Eric Wei Liang Cher (1)

1. , Department of Orthopaedic Surgery, Sengkang General Hospital, Singapore, Singapore

Keywords: Hallux rigidus, First metatarsophalangeal joint, Osteoarthritis, Matrix induced chondrogenesis, Autologous, Chondroplasty, Cheilectomy, Distal oblique osteotomy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Hallux rigidus (HR) is a degenerative joint disorder that debilitates the first metatarsophalangeal joint (MTPJ). Surgical treatment includes cheilectomy, bony osteotomies and in some cases, arthrodesis. The addition of a matrix induced chondrogenesis (MIC) technique is hypothesised to significantly improve cartilage healing. In this study, we present our early outcomes of 12 HR cases treated with a combined procedure including cheilectomy, distal oblique osteotomy (DOO) and scaffold implantations with BMAC. This is a retrospective case series of patients with grade 2 to 3 HR treated with cheilectomy, DOO, microfracture and BMAC infused scaffold implantation (either Chondro-Gide or Hyalofast). Clinical outcomes evaluated include Numeric Pain Rating (NPR), EFAS score, SF-36 and postoperative satisfaction. The pre and post operative scores were compared using a paired sample t-test. The level of significance was taken as $p<0.05$. 11 patients (12 cases) completed their 1-year clinical review. There was statistically significant improvement in all outcome scores. The mean EFAS (Foot and/or Ankle) and EFAS (Sports) scores improved from 9.3 to 20.0 ($p<0.001$) and 3.8 to 9.4 ($p=0.002$) respectively. The mean SF-PF and SF-MH scores improved from 47.9 to 67.9 ($p<0.001$) and 54.0 to 66.0 ($p=0.003$) respectively. The mean NPR at rest and during activity improved from 4.8 to 0.2 ($p<0.001$) and 7.6 to 2.5 ($p<0.001$) respectively. The mean postoperative satisfaction was 8.0 out of 10. The use of a combined procedure with MIC is a promising strategy to treat moderate to severe HR.

#43081 : The tendinous thickness of proximal stump of Myotendinous Achilles rupture

Preferred format : a podium presentation OR a poster presentation

Authors:

kazunori maruyama (1)

1. , Rokuto Orthopedic Clinic, naha, Japan

Keywords: myotendinous achilles rupture, percutaneous repair

Your abstract (DO NOT add the title, list of authors or keywords in this field)

□Back Ground□ Surgical treatment for myotendinous Achilles rupture is only indicated in cases with a large gap. Recently percutaneous surgery is often performed. However, the thinning of the tendon component of proximal stump can makes percutaneous suture application difficult. In this study, we measured the thickness and width of the Achilles tendon proximal to the myotendinous junction using MRI images. □Material & Method □ 14 patients (4 females, 10 males) who diagnosed as myotendinous Achilles rupture with MRI from December 2020 to April 2023 were included (MT group). 8 healthy patients were also included as controls (C group). The thickness and AP/PL width of the tendon were measured by MRI T2 axial images every 8 mm from16 to 40 mm proximal to the rupture site. In control group, the same investigation were undertaken proximal to the myotendinous junction. □Result□ The tendon stump of MT group were significantly thicker than those in C group, however AP width were significantly smaller in MT group than those in C group. □Discussion□ Despite the Achilles tendon becoming flatter proximal to the myotendinous junction, AP width of the tendon becomes thicker. Therefore, it is possible to suture the proximal stump of the Achilles tendon using perctaneous Achilles device as Arthrex's Pars system (enough tendon thickness to be passed through with all threads is about 6.0mm). □Conclusion□ Although the Achilles tendon becomes thinner and wider proximal to myotendinous junction, Myotendinous Achilles rupture can be repaired with a percutaneous device.

#43082 : Should we consider the intercalated fragment in posterior malleolus fractures? Retrospective study of the last ten years

Preferred format : a podium presentation

Authors:

Juan Moreno Blanco (1), Araceli Mena Roson (1), Maria Soledad Pérez Antoñanazas (1), Pablo Sierra Madrid (1), Alberto Plasencia Hurtado de Mendoza (1), Óscar Serrano Alonso (1)

1. Traumatology and Orthopedics, Hospital Universitario Príncipe de Asturias, Madrid, Spain

Keywords: Posterior malleolus fracture, Ankle fracture, Intercalated fragment

Your abstract (DO NOT add the title, list of authors or keywords in this field)

An intercalated fragment (IF) is frequently present in posterior malleolus (PM) fractures, which complicates their treatment. We present a retrospective study of 73 patients diagnosed with ankle fracture with PM between January 2012 and January 2022. The minimum follow-up was 1 year. We analyzed two groups, one with the presence of IF: its location, size and disposition (free, pure depression or depression fracture); and another without IF. We evaluated epidemiological variables, Bartoníček classification; size, surgical management and postoperative complications. To assess the results we used the AOFAS score. We recorded data from 73 patients. We found IF in 65% of the cases (n=48). Patients with IF were younger (p<0,004). Regarding location, most were posterolateral (zone 7, 40%) and posterocentral (zone 8, 31%). 40% of the IF were multifragmentary (n=19). Most IF (60%) were found in Bartoníček type II fractures, although type III fractures were the ones with the highest relative frequency (4 out of 5). Regarding the disposition, most were free (50%) and less frequently were fracture-depression (31%) or pure depressions (19%). We treated most cases of pure depressed fractures and depressions (75%) along with MP joint synthesis, with an open approach in most of the cases. Free fragments were mostly removed (92%). Analyzing IF by subgroups, AOFAS score was significantly worst (p<0,04) in cases of fracture-depression, with a mean of 71.8, compared to 84 for free fragments, and 86 for pure depressions. IF may complicate reduction of the main fragment and usually require direct exposure to restore joint congruence.

#43083 : Ankle instability due to non-union of the external malleolus

Preferred format : an ePoster Displayed

Authors:

Juan Moreno Blanco (1), Pablo Sierra Madrid (1), Araceli Mena Roson (1), Maria Soledad Pérez Antoñanazas (1), Alberto Plasencia Hurtado de Mendoza (1), Óscar Serrano Alonso (1)

1. Traumatology and Orthopedics, Hospital Universitario Príncipe de Asturias, Madrid, Spain

Keywords: External malleolus, Non-union, Ankle, Instability

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Infrasyndesmal ankle fractures are generally stable injuries that usually consolidate with conservative treatment with plaster. Avulsion fractures, even if they do not consolidate, are not usually clinically symptomatic, however, larger Weber A fractures can generate symptomatic instability in the patient. A 38-year-old male athlete came to the clinic with instability of the right ankle. He had an infrasyndesmal fracture of the right ankle 5 months ago that had not consolidated. On examination, he presented marked instability with walking, referring diffuse pain on the external side of the ankle and insecurity. During normal walking, he did not present symptoms, but during running he began to feel instability and pain. On examination, the non-union area was clearly palpable and painful. The hindfoot had a normal axis. X-rays showed an atrophic non-union of the external malleolus. We offered surgical management due to the instability during sports. Using a lateral approach, the area of pseudoarthrosis was located, refreshed and crest graft was provided. Then a compression hook plate was applied. The patient was left uncharged and immobilized with a suropedic splint for 6 weeks. After this, partial weight-bearing was authorized progressively. The patient evolved favorably and was asymptomatic 6 months after surgery with the fracture consolidated Generally, these fractures consolidate; those that do not, it is postulated that it may be due to anatomical variations in the blood supply of the external malleolus. Surgical management of symptomatic cases, open reduction and internal fixation together with bone graft, usually resolves the symptoms in most cases.

#43085 : “Customize to achieve Perfection?” – Total Ankle Arthroplasty with Customized Cutting Guides – Case Series

Preferred format : a podium presentation OR a poster presentation

Authors:

Margarida Gomes (1), José Araújo (2), Carla carreço (2), Rosana Pinheiro (2), Diogo Barros (2), Bárbara Ferreira (2), Ana Lavado (2), António Andrade (2)

1. orthopedics, ULSNE, Bragança, Portugal
2. orthopedics, ULSNE, Macedo de Cavaleiros, Portugal

Keywords: tibiotarsal osteoarthritis; arthroplasty; custom guides

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Tibiotarsal osteoarthritis is a highly disabling pathology, affecting 3.4% of the general population. When refractary to conservative treatment, the surgical approach varies between arthrodesis and arthroplasty, with arthrodesis being historically the preferred therapy. The emergence of modern implants has changed this paradigm. In recent studies, although arthroplasty continues to be associated with higher rates of complications, it has revealed excellent results in terms of mobility, functionality and implant survival. We present six cases of patients with tibiotarsal arthrosis who underwent total ankle arthroplasty with “QUANTUM Total Ankle prosthesis with OrthoPlanify - Patient Specific Instrumentation” in which preoperative images were used to produce 3D bone models and specific cutting guides. These are four females and two males, aged between 60 and 70 years, with an average AOFAS Ankle-Hindfoot Score of 33 / 100. All of them underwent total ankle arthroplasty with this system, between 2023 and 2024, in the same institution and by the same surgical team. During the follow-up period, there was a significant improvement in pain complaints, mobility and function, with an average gain in AOFAS Ankle-Hindfoot Score 40, with no complications recorded. Although it is not yet established as first line, new generations of ankle arthroplasty are changing the treatment of this patology. Total Ankle Arthroplasty with personalized cutting guides is designed to facilitate the procedure, decrease surgical time, improve mobility and increase stability based on patient's specific anatomy. More studies and follow-up time are needed to establish and confirm the advantages of this technique.

#43087 : Tibio Talar Calcaneal Arthrodesis as a Final Treatment of Failed Total Ankle Arthroplasty

Preferred format : a podium presentation

Authors:

Paschalis Papanikolaou (1), Nerantzoula Goutsiou (1), Grigorios Anagnostou (1), Menelaos Papadakis (1), Ioannis Vasiadis (1), Alexandros Eleftheropoulos (1)

1. Orthopaedic Department, Naoussa General Hospital, Naousa, Greece

Keywords: aseptic loosening, total ankle arthroplasty, tibiotalar calcaneal arthrodesis, allograft, retrograde intramedullary nail

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Purpose: To present the surgical technique of tibio talar calcaneal (TTC) arthrodesis applied to failed total ankle arthroplasty (TAA) cases, highlighting variations in femoral head allografts. Material and Methods: This study involves four patients who underwent TTC fusion after failed TAA. The surgical technique consists of placing the patient laterally with a thigh tourniquet, performing a lateral ankle approach with fibular osteotomy, removing implants, debriding the wound, and achieving fusion with a retrograde intramedullary nail under fluoroscopic guidance. Differences among cases were in using femoral head allografts to address bone defects. In the first case, the femoral head allograft was placed en bloc. In the second case, the femoral head was split into two parts to fit the defect. In the third case, the femoral head was ground into cancellous chips to fill the void. The fourth case involved a more significant bone defect from total talus replacement, filled with ground femoral head chips. The postoperative protocol included immobilisation in a circular cast, non-weight-bearing for six weeks, followed by gradual weight-bearing until the 12th postoperative week. Results: The American Orthopaedic Foot and Ankle Society (AOFAS) scores increased in all cases, with no wound complications noted. Only one case, the one with the ground femoral head, had a delayed union. Conclusions: TTC arthrodesis is a salvage procedure for failed TAA. Femoral head allografts can be adapted based on specific case requirements. This technique requires expertise in foot surgery and thorough preoperative planning for successful outcomes.

#43092 : With the MICA procedure, is the hallux valgus severity classification obsolete?

Preferred format : a podium presentation OR a poster presentation

Authors:

Michael Michlin (1)

1. Orthopedics, Meir hospital, Kfar Saba, Israel

Keywords: Hallux valgus, MICA, severity classification

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Surgical treatment for hallux valgus (HV) has traditionally been based on the severity of the deformity. Severe HV was typically treated with proximal osteotomies, while mild to moderate cases were managed with distal osteotomies. However, recent studies have shown that even severe HV can be effectively treated with the minimal Invasive distal osteotomy procedure. The purpose of this study was to reevaluate the necessity of classifying HV deformity by severity. Methods We conducted a retrospective study of patients who have been operated with Minimally Invasive Chevron and Akin (MICA) technique for HV between January 1, 2017, and February 1, 2023, with a minimum follow-up period of one year. We collected radiographic measurements and Patient-Reported Outcome Measures (PROMs) with EFAS questionnaire and overall satisfaction questions. We included only patients with isolated hallux valgus deformity with no other foot pathology. Results Of 105 cases 5.7% were defined as mild HV, 62.9% as moderate HV and 31.4% as severe HV. The mean pre- and postoperative IMA1 were 13.67±2.94 and 3.1±2.34. The mean pre- and postoperative HVA were 31.41±8.56 and 8.21±5.02. The mean postoperative EFAS score was 18.25±6.56, and 82.28% of patients declared to be satisfied with the operation. PROMs were not associated with the preoperative HV severity (P>.1). Conclusion When treating isolated HV deformity, the MICA procedure is an effective modality for treating all severities. Thus eliminates the need of deciding between distal, proximal, or combined osteotomies. We believe that these findings render the traditional severity classification of HV outdated.

#43094 : Assessing the utilization of weightbearing computed tomography for foot and ankle deformities

Preferred format : a podium presentation

Authors:

Emily Luo (1), Sally Kuehn (1), Zirbes Christian (1), Julia Ralph (1), Karl Schweitzer (2), Andrew Hanselman (2), James Nunley (2), Adams Samuel (2), Easley Mark (2), Cesar De Cesar Netto (2)

1. , Duke University School of Medicine, Durham, USA
2. , Department of Orthopaedic Surgery, Duke University School of Medicine, Durham, USA

Keywords: WBCT, resource utilization

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Weightbearing computed tomography (WBCT) has risen in popularity in the field of foot and ankle research as a reliable imaging modality with low dose of radiation. While studies have demonstrated the powerful capabilities of WBCT in modeling three-dimensional pathology, there remains a paucity in the literature in understanding the best uses for WBCT clinically. This study reports the WBCT utilization patterns for a single institution in the care of foot and ankle patients. Methods: The electronic medical records of consecutive patients with various foot and ankle deformities that underwent WBCT examination as part of the standard of care at Duke University between February 2022 and July 2023 were reviewed retrospectively. Factors that were assessed included body mass index (BMI), age, sex, laterality, reason for WBCT order, WBCT impression/diagnosis, and plan for treatment. Results: 1,219 patients were included. 45.2% patients were male and 54.8% female. 51.5% of the scans were for right sided symptoms, 42.3% for the left side, and 6.2% for bilateral symptoms. Mean BMI of participants was 25.12. The most common WBCT diagnosis was ankle osteoarthritis (26%), followed by foot and ankle pain (9%), midfoot arthritis (7%), and acquired flatfoot deformity (6%). 65.1% of scans were pre-operative and 34% were post-operative. Conclusion: WBCT offers utility for a wide array of foot and ankle pathologies and can be leveraged for both pre-operative planning and for trending patients post-operatively. Future studies are needed to assess the economic implications of WBCT and effects on patient outcomes compared to other imaging techniques.

#43095 : SELECTIVE FIXATION METHODS IN LISFRANC FRACTURE AND DISLOCATIONS

Preferred format : a podium presentation OR a poster presentation

Authors:

Nebi Köksal Yazgan (1), Emre Baca (1), Muhammed Can Arı (1)

1. Department of Orthopedics and Traumatology, Bakırköy Dr. Sadi Konuk Training and Research Hospital, Istanbul, Turkey

Keywords: Lisfranc injury,tarsometatarsal joint,selective fixation

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objective:The aim of surgical treatment in Lisfranc fracture-dislocations is to ensure optimal anatomical reduction and stability of the tarsometatarsal joint.In tarsometatarsal fracture dislocations, fixation is provided after the unstable joint is reduced.There is no study in the literature on selective fixation of the tarsometatarsal joint.The aim of this study was to investigate selective fixation methods in the surgical treatment of Lisfranc fracture dislocations and to investigate the functional results. Materials and Methods:A total of 49 patients with Lisfranc fracture-dislocation in all age groups with an indication for surgical treatment and at least 1 year after surgery were included in the study. Patients were evaluated in terms of demographic information, fracture type, additional injury, type of operation, implant used, screw orientation, operation time, postoperative complications and gait pattern and functional results with AOFAS, MQSFO and VAS scores. Results:The mean AOFAS score of the participants was 82.19±11.99;the mean MQSFO score of the participants was 17.02±13.24;and the mean VAS score of the participants was 3.31±1.65.It was found that the development of posttraumatic arthritis was lower in cases treated with CRIF than in cases treated with ORIF.The VAS score of patients with implant fracture was statistically significantly higher than those without implant fracture($p=0,030$; $p<0,05$).The results were evaluated at 95% confidence interval and significance was evaluated at $p<0.05$ level. Conclusion:We think that the main determinant of treatment in Lisfranc fracture dislocations is 'selective fixation',which is detected by perioperative examination and applied only to the unstable joint, unlike the classical fixation methods described in the literature.

#43096 : Normative Contact Mechanics of the Ankle Joint: Quantitative Assessment Utilizing Bilateral Weightbearing CT Journal of Biomechanics

Preferred format : a podium presentation

Authors:

Matthias Peiffer (1), Samir Ghandour (2), Atta Taseh (3), Nour Nassour (2), Arne Burssens (4), Gregory Waryasz (5), Lorena Bejarano-Pineda (5), Soheil Ashkani-Esfahani (2), Emmanuel Audenaert (6), Christopher DiGiovanni (5)

1. Orthopaedics & traumatology, University Hospital Ghent, Ghent, Belgium
2. , Foot and Ankle Research and Innovation Lab (FARIL), Boston, USA
3. , Foot and Ankle Research and Innovation Lab (FARIL), boston, USA
4. , University Hospital Ghent, Ghent, Belgium
5. Foot and Ankle Service, Massachusetts General Hospital, Boston, USA
6. , University of Ghent, Ghent, Belgium

Keywords: Contact Mechanics , Ankle Joint, Weightbearing CT, Automatization

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Alterations in ankle’s articular contact mechanics serve as one of the fundamental causes of significant pathology. Nevertheless, computationally intensive algorithms and lack of bilateral weightbearing imaging have rendered it difficult to investigate the normative articular contact stress and side-to-side differences. Purpose: The aims of our study were two-fold: 1) to determine and quantify the presence of side-to-side contact differences in healthy ankles and 2) to establish normative ranges for articular ankle contact parameters. Methods: In this retrospective comparative study, 50 subjects with healthy ankles on bilateral weight-bearing CT were confirmed eligible. Segmentation into 3D bony models was performed semi-automatically, and individualized cartilage layers were modelled based on a previously validated methodology. Contact mechanics were evaluated by using the mean and maximum contact stress of the tibiotalar articulation. Absolute and percentage reference range values were determined for the side-to-side difference. Results: Amongst a cohort of individuals devoid of ankle pathology, mean side-to-side variation in these measurements was < 12 %, while respective differences of > 17 % talar peak stress and > 31 % talar mean stress indicate abnormality. No significant differences were found between laterality in any of the evaluated contact parameters. Discussion: Understanding these values may promote a more accurate assessment of ankle joint biomechanics when distinguishing acceptable versus pathological contact mechanics in clinical practice.

#43099 : Application of External Torque Enhances the Detection of Subtle Syndesmotic Ankle Instability in a Weightbearing CT

Preferred format : a podium presentation

Authors:

Matthias Peiffer (1), Thibaut Dhont (1), Francis Cuigniez (2), Thomas Tampere (1), Soheil Ashkani-Esfahani (3), Pieter D'hooghe (4), Emmanuel Audenaert (5), Arne Burssens (6)

1. Orthopaedics & traumatology, University Hospital Ghent, Ghent, Belgium
2. , Radiologie F. Cuigniez, Ghent, Belgium
3. , Foot and Ankle Research and Innovation Lab (FARIL), Boston, USA
4. , Aspetar Orthopaedic and Sports Medicine Hospital, Doha, Qatar
5. , University of Ghent, Ghent, Belgium
6. , University Hospital Ghent, Ghent, Belgium

Keywords: Syndesmotic Injury, Weightbearing-CT, Stress Examination, Automatization

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Syndesmotic ankle injuries may lead to syndesmotic instability or posttraumatic ankle osteoarthirtis on the long term. To date, it remains debated whether syndesmotic ankle injuries should be imaged under weightbearing conditions and/or during application of external rotation. Therefore, we aimed to implement both weightbearing and external rotation in the assessment of syndesmotic ankle injuries using WBCT imaging combined with 3D measurement techniques. Methods: In this retrospective study, patients with an acute syndesmotic ankle injury were analyzed using a WBCT (N= 21; Age= 31.64±14.07 years old) during weightbearing and combined weightbearing-external rotation. For the external rotation protocol, the patient was asked to internally rotate the shin while ensuring that the foot remained firmly plantigrade. Tibiofibular displacement and Talar Rotation were quantified by automated 3D measurements using a custom-made script. Results: The difference in neutral-stressed Alpha angle and Anterior tibiofibular distance showed a significant difference between patients with a syndesmotic ankle lesion and contralateral control (P = 0.046 and P = 0.039, respectively). The difference in neutral-stressed posterior tibiofibular distance and talar rotation angle did not show a significant difference between patients with a syndesmotic ankle lesion and healthy ankles. Conclusion: Application of combined weightbearing-external rotation reveals an increased ATFD in patients with syndesmotic ligament injuries. This study provides the first insights based on 3D measurements to support the potential relevance of applying external rotation during WBCT imaging. In clinical practice, this could enhance the current diagnostic accuracy of subtle syndesmotic instability in a non-invasive manner.

#43100 : All endoscopic Brostrom-Gould repair, technique and 5-year preliminary results

Preferred format : a podium presentation OR a poster presentation

Authors:

Choon Chiet Andrew Hong (1), Christel CHARPAIL (2), Stéphane Guillo (3)

1. Department of Orthopaedic Surgery, National University Hospital, Singapore, Singapore
2. Sports clinic Bordeaux, SOS Pied Cheville, Mérignac, France
3. Sports clinic Bordeaux, SOS Pied Cheville, Bordeaux, France

Keywords: endoscopic Brostrom-Gould; medium to long term results; ATFL; CFL; IER

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: In lateral ligament ankle repair, the Brostrom-Gould procedure is still a gold standard. While studies showed the benefits of arthroscopy, they usually associate arthroscopic and percutaneous techniques to access the inferior bundle of the anterior talofibular ligament (ATFL), the calcaneofibular ligament (CFL) and the inferior extensor retinaculum (IER). The goal of this technique is to be true to the open one and to report our 5-year preliminary results. Materials and methods: Three portals are used: anterolateral and anteromedial for the anterior arthroscopy, lateral for the endoscopy. To access the extra-articular features, a working space is created with a probe through the anterolateral portal. Two soft anchors are passed through capsule, ligament and EIR. A prospective database for 43 active patients (mean age 29.4), with a 5-year minimum follow-up, that underwent the procedure, was reviewed. Results: All patients had ATFL grade 1 or 2 SFA classification. The AOFAS scores showed significant improvement from 69.6 ± 13.9 to 93.7± 10.7 and the Karlsson score improved from 59.7 ± 14.5 to 91.5 ± 14.5 at the final follow-up. Two thirds (74.4%) maintained or had improvement in the AAS at 5.41 ± 2.8 from 5.38 ± 2.8 with an average satisfaction rate of 9.1 ± 1.3. The instability recurrence was 7%. No surgical complications or reoperations occurred. Discussion and conclusion: This is the first study on all endoscopic technique with long terms results. The outcomes are excellent and maintain over time in athletes, as in open techniques, but with less complications and failure.

#43102 : Comparison of Complications and Cost of locking vs non-locking plates in lateral malleolus fractures in patients aged 60 and above

Preferred format : a podium presentation OR a poster presentation

Authors:

Nabeela Farooq (1), Hamed Mazoochy (2), Lakshmi Voruganti (3), Suresh Chandrashekar (2), Yaser Ghani (2)

1. , , London, United Kingdom
2. , Homerton University Hopsital, London, United Kingdom
3. , Homerton University Hospital, London, United Kingdom

Keywords: lateral malleolar, locking plate, non-locking plate, ankle fracture, locking compression plate, one-third tubular plate

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction Lateral malleolar fractures are the most common type of ankle fractures. Locking plates are increasingly used for surgical fixation of these displaced fractures, particularly in older patients. Biomechanical studies suggest these plates increase stability of the ankle joint. This study aims to analyse the complication rate, and cost difference between locking vs one-third tubular plates. Materials and methods Patients aged 60 and above who underwent surgical fixation for lateral malleolar fractures at our District General Hospital from 2019-2024 were included in this study. Data including operative fixation, plate used, complication rates, revision surgery and metalwork removal were collected from hospital records. Results A total of 42 patients were included for analysis. 57% of patients underwent fixation with locking plates and 48% with one-third tubular plates (n=18). Overall complication rate was 29% (n=12). There was no statistically significant difference in complication rate between locking and non-locking plates (p=1) or operating surgeon (foot and ankle vs other) (p=0.6987). Of the 3 diabetic patients, 2 experienced complications. Complications were categorised as early (largely due to wound issues) or late onset (mostly due to plate irritation). A total of 6 patients required further surgery. There was an estimated extra cost of £4974 for the use of locking plates during the study timeline. Conclusion There was no significant difference in overall complication rate between locking and non-locking plates used for lateral malleolar fracture fixation despite significantly higher costs of locking constructs. Further comparative studies are required to analyse the trends and demonstrate cost effectiveness.

#43103 : Timalleolar ankle fractures surgery: soft tissue complications observational review.

Preferred format : an ePoster Displayed

Authors:

PABLO MILLAN-ANTELO (1), MARIA-SOLEDAD PEREZ-ANTOÑANZAS (1), CELIA MARIN-PEREZ (1), JUAN-CARLOS TENEZACA-MARCATOMA (1), PABLO SIERRA-MADRID (1)

1. Ortopedic Surgery, University Hospital Príncipe de Asturias, ALCALA DE HENARES (MADRID), Spain

Keywords: Trimalleolar fractures surgery soft tissue complications

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objective: Assessment of soft tissue postoperative complications in trimalleolar fractures, related to surgery timing, urgent or sequential open reduction and internal fixation (ORIF) and patient risk factors Material and methods: 186 patients with ankle fracture, treated between April 2021 and November 2023, 93 involving posterior malleolus. Retrospective observational study analyzing patient gender, age, fracture type Bartoníček-Rammelt classification) open fixation method, surgery timing surgery (urgent ORIF versus two step External Fixation (EF) followed by ORIF according to soft tissue condition). RESULTS: 66% women, 85% 40 years or older, 17% smokers. Most cases type II (34%) and III (27%) fractures. Sequential two step surgery 17%, urgent ORIF 77%. Evaluation by Chi-square test showed urgent interventions more soft tissue complications rate that sequential ($p<0.001$). There was no significant difference between age groups ($p>0.05$). Incidence of soft tissue complication 17%, and mayor complication 3 cases (reoperation, implant removal and one plastic surgery). Most of 16 complications (12) followed urgent procedures, 7 with direct approach to posterior malleolus, and 4 cases after scheduled two step procedures including posterior malleolus ORIF. CONCLUSION: Despite the limitations of this study, our results suggest that deferring open reduction and osteosynthesis for trimalleolar fractures, considering the condition of surrounding soft tissues, would be the best treatment option. In older patients over 60yo with associated pathology, and low functional demand consider non operative treatment for posterior malleolus, rather than proper fragment reduction, to avoid potential severe soft tissue complications.

#43104 : Review of arthroscopic surgical options for talar dome osteochondral lesions repair

Preferred format : a podium presentation OR a poster presentation

Authors:

Borna Strahonja (1), Hrvoje Klobučar (1), Denis Tršek (1)

1. , Special hospital for orthopaedic surgery Akromion, Zagreb, Croatia

Keywords: talar dome, osteochondral lesion, arthroscopic repair, autologuous matrix-induced chondrogenesis, minced cartilage

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Osteochondral lesions of talar dome are very common finding in various posttraumatic and atraumatic ankle conditions. It is extremely important to timely recognize and treat hyaline cartilage to prevent secondary osteoarthritis, alleviate pain, and improve patient function. The main clinical characteristics are deep ankle pain and swelling, and besides clinical examination, the diagnostic gold standard is MRI, which provides information on the size, depth, and stability of the lesion, the presence of subchondral cysts and bone marrow edema, and associated injuries such as ligament lesions, impingement, or malalignment. Arthroscopic techniques allow easy access and high-quality repair of all stages osteochondral lesions, with a lower risk of postoperative complications. Microfractures are a simple, inexpensive, and effective technique, suitable for defects up to 1 cm^2 and depths up to 3 mm, with the lack of final formation of fibrocartilaginous tissue. Autologous matrix-induced chondrogenesis (AMIC) is a technique intended for open surgery but can be performed arthroscopically with proper preparation. Suitable for larger defects, and compatible with bone grafting, with disadvantages of higher costs and technical complexity. The minced cartilage implantation technique has an indication spectrum similar to autologous chondrocyte implantation, allows the repair of larger, and combined with bone grafting, deeper defects. It is technically somewhat demanding but is single stage, completely biological, can be combined with ligament repairs and corrective osteotomies, has relatively low cost, and the potential to form hyaline cartilage. Given the high importance of preserving hyaline cartilage, it is essential to apply a wider range of repair techniques.

#43106 : Limb salvage in infected diabetic foot ulcer with wound debridement and intraosseous antibiotic application

Preferred format : a podium presentation

Authors:

Rohit Ravindran Nair (1), Brijesh Ayyaswamy (1), Pradeepsyam Prasad (1), Anoop Anand (1), Nithin Babu (1), Adersh Gopinathannair (1)

1. Trauma and Orthopaedics, Blackpool Teaching Hospitals NHS Foundation Trust, Blackpool, United Kingdom

Keywords: diabetic foot, intraosseous antibiotic, amputation

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction 20 percentage of moderate to severe diabetic foot infections results in major lower limb amputations. Aim To analyze whether adding intraosseous local antibiotics reduces the rate of major lower limb amputations in diabetic foot osteomyelitis. Methodology 42 patients admitted with diabetic foot osteomyelitis were treated with debridement and local intraosseous antibiotic application. There were four infected hindfoot Charcot, six infected midfoot Charcot, five heel ulcer, five midfoot ulcer and 22 forefoot osteomyelitis cases. All these patients had diabetic foot multidisciplinary team (MDT) assessment. Results There were 32 males and 10 females. The mean age was 61.2 years (42-87 years). 10 staged Charcot foot reconstructions, five partial calcanectomy, five transmetatarsal amputations and 22 forefoot debridement/amputations were performed. Eight forefoot and two heel wound patients needed resurgery. Two of them were below knee amputations, three were transmetatarsal amputations and the rest were further bone shortenings. Four patients in this group needed vascular procedures. The wound took 2-8 months to heel fully with a mean time of 5 months. Two patients were found to be deceased on long term follow-up. Major amputation was prevented in 95% of moderate to severe diabetic foot infections. Our reoperation rate after primary surgery was only 19%. Conclusion Our study shows that local intraosseous antibiotic application can reduce major amputation rates in moderately to severely infected diabetic foot and give a functional limb to the patient.

#43108 : Runners have higher soleal tightness as compared to non-runners: a prospective case-control study

Preferred format : a podium presentation

Authors:

Ankit Dadra (1), Siddhartha Sharma (2), Prasoon Kumar (2), Sandeep Patel (2), Karan Jindal (3)

1. ORTHOPAEDICS, PGIMER CHANDIGARH, Chandigarh, India
2. ORTHOPAEDICS, PGIMER CHANDIGARH, Chandigarh , India
3. ORTHOPAEDICS, AIMS, Mohali, Chandigarh , India

Keywords: Silfverskiold test, gastrocnemius tightness, runners, Soleal Tightness.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Runners are at a higher risk of injury due to tightness in specific muscle groups, including the hamstrings, hip rotators, and calf muscles. Previous research has extensively explored the tightness of the gastrocnemius muscle in runners, which increases their susceptibility to injuries. However, limited studies have assessed soleal tightness in runners, warranting further investigation with larger sample sizes to understand its impact on running biomechanics and injury prevention. Methods: Sixty-three healthy adults (33 runners and 30 non-runners) were included in the study and gastrocnemius tightness was measured by ankle-foot dorsiflexion index (Silverskiold test). The relation between running mileage and intrinsic gastrocnemius tightness was obtained using linear regression analysis for each study group. Results: Mean ankle-foot dorsiflexion index (ADI) among runners and non-runners were found to be 10.66+6.04 and 13.25±7.57 respectively (P=0.03). Age, gender or side (left or right gastrocnemius) did not influence ADI. Muscle tightness was found to be inversely related to running distance. Conclusion: This study observed that runners have a higher Soleal Tightness as compared to non-runners. However, future studies with a larger sample size and targeted at professional athletes are required to substantiate the effect of Soleal tightness on running biomechanics.

#43110 : Isolated talonavicular fusion in Müller-Weiss disease - addressing midfoot collapse

Preferred format : an ePoster Displayed

Authors:

João Nelas (1), Cláudio Garcia (2), Guilherme Madeira (3), João Seixas (1), André Gomes (1)

1. , Centro Hospitalar Universitário de Santo António, Porto, Portugal
2. , Hospital do Divino Espírito Santo de Ponta Delgada, Ponta Delgada, Portugal
3. , Hospital Distrital de Santarém, Santarém, Portugal

Keywords: Muller-Weiss disease, Navicular bone, Osteonecrosis, Deformity, Arthrodesis

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Abstract Müller-Weiss disease (MWD) is a rare, idiopathic condition involving osteonecrosis of the navicular bone, leading to midfoot pain and structural deformity. This case report discusses a 49-year-old woman with persistent midfoot pain and difficulty with weight-bearing activities. Magnetic Resonance Imaging (MRI) confirmed advanced Müller-Weiss disease, revealing navicular bone degeneration and associated joint changes. Conservative treatments had failed to provide relief, prompting a decision for surgical intervention. The patient underwent a talonavicular arthrodesis, utilizing two staples for fusion. The procedure included debridement of necrotic tissue and alignment of the talonavicular joint to restore stability and function. Postoperative evaluation demonstrated significant pain relief, improved midfoot alignment, and satisfactory joint fusion at the six-month follow-up. This case illustrates the effective use of talonavicular fusion with staple fixation in treating Müller-Weiss disease, emphasizing the role of MRI in diagnosing the extent of osteonecrosis and guiding surgical strategy for optimal patient outcomes.

#43111 : Atraumatic rupture of the tibialis anterior tendon - a rare and challenging diagnosis

Preferred format : an ePoster Displayed

Authors:

João Nelas (1), Filipa Adan (1), Diogo Catelas (1), Filipa Cordeiro (1), Guilherme Madeira (2), João Rosa (1)

1. , Centro Hospitalar Universitário de Santo António, Porto, Portugal
2. , Hospital Distrital de Santarém, Santarém, Portugal

Keywords: Tibialis anterior, atraumatic rupture, tendon injury, anchor repair

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Atraumatic ruptures of the tibialis anterior tendon are uncommon. Key risk factors include inflammatory arthropathies, gout, diabetes, and prolonged corticosteroid therapy. Diagnosis relies on clinical assessment, incorporating patient history and physical examination. Surgical intervention for acute ruptures typically yields superior functional outcomes and fewer complications. This report details a case involving a 57-year-old female who presented to the emergency department with sudden dorsum foot pain and weakened dorsiflexion. Ultrasound confirmed a complete rupture of the tibialis anterior tendon near its distal insertion. The tendon was reattached to the navicular bone using anchors, preceded by longitudinal sutures due to proximal retraction. At a 2-year follow-up, the patient demonstrated no symptoms, full range of motion, and had resumed all daily activities. Despite the lack of a definitive treatment protocol for atraumatic ruptures of the tibialis anterior tendon, surgical management is often favored. In this case, the proximity of the rupture to the distal insertion facilitated reattachment with an anchor. To address the excessive tension and shortening of the tendon, longitudinal sutures were applied to extend it. If direct tendon repair or bone reattachment had been impossible, an autologous graft could have been considered. This case underscores the importance of recognizing this rare condition through meticulous examination and suggests that surgical treatment can lead to excellent functional recovery and a return to pre-injury activity levels.

#43114 : Talar neck malunions – evaluation of kinematics, pedobarographic changes and patient reported outcome measures

Preferred format : a podium presentation

Authors:

SIDDHARTHA SHARMA (1, 2), Sandeep Patel (3), Mandeep Dhillon (4)

1. Orthopedics, Postgraduate Institute of Medical Education and Research, Chandigarh, Chandigarh, India
2. Foot and Ankle Research and Innovation Laboratory, Department of Orthopedics , Massachusetts General Hospital, Harvard Medical School, Boston, USA
3. , Postgraduate Institute of Medical Education and Research, Chandigarh, Chandigarh, India
4. , Fortis Hospital, Mohali, India, Chandigarh, India

Keywords: talus neck fractures; malunion; neglected trauma; pedobarography; plantar pressure analysis; biomechanics; functional outcomes

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction The impact of talar neck malunions (TNM) on foot biomechanics and functional outcomes is not well established. Hence, we conducted this study to evaluate the kinematic and pedobarographic changes and functional outcomes associated with TNMs. Methods: Adult patients with TNM without ankle arthrosis were enrolled. Weight-bearing radiographs, as well as CT scans of both feet, were obtained. Dynamic pedobarography was performed. Functional outcomes were evaluated using the Manchester Oxford Foot Questionnaire (MOxFQ), Visual Analog Score, and the EQ5D questionnaire. Results: A total of 10 patients, 6 males, and 4 females, with a mean age of 32.4 years were enrolled. On the TNM side, significant increases were observed in step length and step time, while significant decreases were noted in the single limb support time and single limb support center of pressure line. Midfoot forces were significantly increased, whereas the forefoot and hindfoot forces were significantly decreased on the TNM side. A strong positive correlation was found between midfoot force and the talar torsion angle, and a moderate negative correlation was observed between hindfoot and midfoot forces and the inclination angle. A strong positive correlation was also noted between high midfoot pressures and VAS Scores, MOxFQ scores, and the EQ5D walking and usual activities domains. Conclusion: This study demonstrates that TNMs are associated with significant alterations in foot biomechanics. Additionally, an increase in talar neck torsion after TNM is linked with higher midfoot pressures, which can lead to higher levels of pain and poorer function.

#43115 : What Do We Know About the Pathoanatomy of Talar Neck Malunions? Results From a 3D Morphometric Analysis

Preferred format : a podium presentation

Authors:

SIDDHARTHA SHARMA (1, 2), Sandeep Patel (3), Mandeep Dhillon (4)

1. Orthopedics, Postgraduate Institute of Medical Education and Research, Chandigarh, Chandigarh, India
2. Foot and Ankle Research and Innovation Laboratory, Department of Orthopedics , Massachusetts General Hospital, Harvard Medical School, Boston, USA
3. , Postgraduate Institute of Medical Education and Research, Chandigarh, Chandigarh, India
4. , Fortis Hospital, Mohali, India, Chandigarh, India

Keywords: talus neck fractures; malunion; neglected trauma; 3D modeling; pathoanatomy; virtual modeling

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Talar neck malunions (TNM) significantly alter the foot biomechanics and predispose patients to arthrosis and poor functional outcomes. Therefore, this study aimed to investigate the three-dimensional changes in morphometric parameters of the talar neck after malunion and to determine how these changes affect the architecture of the foot. Methods: Adult patients with a TNM without ankle arthrosis were prospectively included. 3D models of both tali were generated. The malunion side was mirrored and superimposed on the normal side. Deviation of the talar neck in the axial plane (declination angle [DA]), sagittal plane (inclination angle [IA]), coronal plane (torsion angle [TA]) as well as the medial and lateral neck lengths (MNL and LNL) were measured on the 3D talus models. Results: 10 patients were included. Axial plane changes included varus deviation of the talar neck in 8 cases and valgus deviation in 2. Sagittal plane changes included dorsiflexion of the talar neck in 4, neutral alignment in 3 cases, and plantarflexion in 3 cases. The TA was increased in all cases. TA and MNL had a moderate positive correlation with AP Meary’s angle and, and a moderate negative correlation with Lateral Meary’s Angle. Conclusion: Talar neck malunions are complex three-dimensional deformities resulting in the common varus and dorsiflexion variants, as well as less common valgus and plantarflexion variants. Despite the variation in malunion types, all cases are characterized by an increased TA. Furthermore, the combination of increased TA and DA and decreased MNL leads to forefoot adduction and hindfoot varus.

#43116 : Clinical and radiological outcomes of ankle joint preserving surgical reconstruction for talar neck non-unions

Preferred format : a podium presentation

Authors:

SIDDHARTHA SHARMA (1, 2), Sandeep Patel (3), Mandeep Dhillon (4)

1. Orthopedics, Postgraduate Institute of Medical Education and Research, Chandigarh, Chandigarh, India
2. Foot and Ankle Research and Innovation Laboratory, Department of Orthopedics , Massachusetts General Hospital, Harvard Medical School, Boston, USA
3. , Postgraduate Institute of Medical Education and Research, Chandigarh, Chandigarh, India
4. , Fortis Hospital, Mohali, India, Chandigarh, India

Keywords: talus neck fractures; nonunion; neglected trauma; reconstruction; ankle joint preservation; functional outcomes

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Talar neck non-unions result in significant hindfoot deformity and morbidity and are infrequently reported in the literature. We performed this study to report the clinical and radiological outcomes of a cohort of talar neck non-unions managed by ankle joint preserving reconstruction. Methods: This was a prospective study that included 8 patients (7 male and 1 female) with talar neck non-unions. All patients underwent ORIF+BG through dual approaches. Additional medial malleolar osteotomy was done in 2 cases, and calcaneofibular split approach to the subtalar joint in 3. Adjunct subtalar fusion was done in 5 cases. Clinical and radiological evaluation was performed pre-and post-operatively. Functional outcomes were assessed by the Manchester Oxford Foot Questionnaire (MOxFQ). Results: The mean age of patients 32.3 ± 13.1 years. The mean surgical delay was 4.1 ± 1.7 months. Union was achieved in 7 cases at a mean of 3.4 ± 1.3 months. One case had progressive collapse, which was managed by patellar arthrodesis. All 3 cases where subtalar fusion was not performed primarily demonstrated subtalar arthrosis, but none required a secondary subtalar fusion. The MOxFQ score from 61.1 ± 10.1 to 41 ± 14.1 postoperatively (P = 0.005). The mean follow-up was 14.6 ± 6.8 months. Conclusion: ORIF+BG of the talar neck, with or without subtalar fusion has the potential to achieve solid union, correct the hindfoot deformity, and improve functional outcomes. However, larger studies with longer follow-up are needed to evaluate the long-term efficacy of this procedure.

#43117 : Fibular shortening after ankle fracture - how to solve?

Preferred format : an ePoster Displayed

Authors:

Daniel Vilaverde (1), Pedro Seabra Marques (2), Belmiro Alves (2), Miguel Pimentel (2), Filipe Maçães (2), Orlando Simões (2), Inês Casais (2), Sara Macedo (2), Raul Cerqueira (2)

1. Orthopaedics and Traumotology, Unidade Local de Saude Gaia e Espinho, Gulpilhares, Portugal
2. Orthopaedics and Traumotology, Unidade Local de Saude Gaia e Espinho, Vila Nova de Gaia, Portugal

Keywords: Complication, fracture, osteotomy

Your abstract (DO NOT add the title, list of authors or keywords in this field)

We exhibit the case of a 43-year-old woman, victim of a car accident resulting in a fracture-dislocation of her right ankle, in December 2019. After 48 hours, she underwent open reduction and osteosynthesis of the fibula with a bridge plate and transsyndesmotic fixation with 2 cortical screws, associated with osteotaxis with an external fixator due to marked tibiotarsal instability. After 6 weeks, the external fixator was removed, subsequently revealing a slight loss of reduction in the fibular fracture. Surveillance and physiatric treatment were maintained. At 7 months post-op, the patient underwent surgery again to extract the transsyndesmotic screws. After the aforementioned surgery, a marked clinical and radiographic worsening was noted, and the case was referred to the Foot and Ankle unit of our service. Clinically, she presented with a marked limp and limitation. Radiographically, a severe shortening of the fibula and valgus deviation of the tibiotarsal joint were noted. In June 2023, she underwent surgery to correct the deformity with a medial subtraction osteotomy of the tibia and elongation osteotomy of the fibula, with reinsertion of the deltoid ligament with trans-osseous tunnels. Currently, with approximately 2 years of evolution, the patient is asymptomatic, capable of total weight bearing, without limitations. Radiographically, presents with consolidated osteotomies and corrected mechanical axis.

#43118 : Personalized resurfacing: a game-changer on treating osteochondral lesions of talus?

Preferred format : a podium presentation OR a poster presentation

Authors:

Luís Barbosa Pinto (1), Rui Sousa (1), Simão Pinho (1), Marta Lages (1), André Carvalho (1), Luís Machado Rodrigues (1)

1. Ortopedia e Traumatologia, Unidade Local de Saúde Viseu-Dão Lafões, Viseu, Portugal

Keywords: Osteochondral lesions of talus, resurfacing

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Osteochondral lesions of the talus (OLTs) are the most common cause of chronic deep ankle pain.They are characterized by damage to the cartilaginous and subchondral bone of the talar dome.These lesions can be a significant traumatic event or recurrent microtrauma.In current literature,there is still not enough evidence to make clear and strong guidelines for OLT treatment.Classically, operative treatment strategies could be divided into cartilage repair,cartilage regeneration and cartilagem replacement.In recent years personalized talus resurfacing is growing in popularity as a viable treatment option for OLTs and to make the link between biologics and conventional joint arthroplasty.Case report of a 36-year-old man, with a osteochondral lesion of talus treated with personalized resurfacing (Episealer) and review of literature.A 36-year-old male with an osteochondral lesion of the talus (Hepple stage 4) on MRI, underwent arthroscopy, which showed an osteochondral lesion of the talus in zones 1 and 4 and microfractures were performed. Six months post-operatively, the patient continued to experience medial ankle pain,and a new MRI showed persistence of the osteochondral lesion.The patient then underwent a personalized talus resurfacing with an Episealer implant.Currently,at two year post-operatively,the patient is asymptomatic,with complete implant integration and is performing his job without restrictions and recreational sports activity with good tolerance.The authors believe that this technique is effective and will gain increasing importance in the coming years.For this surgical technique and the use of these new implants to be safely implemented,a rigorous validation process and studies with longer follow-up are necessary.

#43119 : Calcaneal Chondrosarcoma: how to approach it – a rare case report

Preferred format : an ePoster Displayed

Authors:

Luís Barbosa Pinto (1), Rui Sousa (1), Luísa Negrão (1), Flávia Resende (1), Luís Oliveira (1), Ana Sofia Costa (1), André Carvalho (1), Luís Machado Rodrigues (1)

1. Ortopedia e Traumatologia, Unidade Local de Saúde Viseu-Dão Lafões, Viseu, Portugal

Keywords: Chondrosarcoma, calcaneus

Your abstract (DO NOT add the title, list of authors or keywords in this field)

About 3% of bone tumors occur in the foot or ankle.Chondrosarcomas are tumors that develop during adulthood, typically between the 4th and 6th decades of life.We present a well-documented case of a 38-year-old man with irrelevant medical history.He had complaints of hindfoot pain for 7 years, which worsened in the last 2 years.The patient had pain on palpation of the entire calcaneus,with associated swelling and slight redness.X-ray and CT scans revealed lobulated lytic images,extending through a large portion of the calcaneus, with endosteal scalloping and ring-shaped calcifications.He underwent curettage of the gelatinous lesion through the creation of a lateral window in the calcaneus, affecting approximately 80% of it.Continuity was noted in the lateroplantar cortical of the calcaneus.After thorough cleaning and irrigation,tricalcium phosphate bone substitute was placed,and a genopodalic plaster splint was applied for 4 weeks,non-weight bearing.Histology defined the diagnosis as a well-differentiated cartilaginous neoplasm, either enchondroma or grade I chondrosarcoma.A bone scan showed no lesions in other locations.At 2-year follow-up, the patient is asymptomatic and has resumed professional and sports activity.Radiologically, the integration of the bone substitute is observed.The patient is under surveillance at the tumor unit.Chondrosarcomas account for 20-25% of bone sarcomas,but involvement of the calcaneus is extremely rare.They can develop primarily or secondarily as a malignant transformation of enchondromas or osteochondromas.Despite the histological study not providing a definitive diagnosis, several indicators seem to confirm low-grade chondrosarcoma:large lesion extent, aggravated pain, involvement of more than two-thirds of the cortical thickness, periosteal reaction, cortical discontinuity, and hindfoot involvement.

#43120 : Clinical Outcomes of Percutaneous Forefoot Surgery: A Two-Year Review

Preferred format : a podium presentation OR a poster presentation

Authors:

Ester Navarro Cano (1), Albert Broch (2), Hernan Ruiz Morales (3), David Torras Desumbila (3), Fernando Funes (3)

1. Orthopaedics and Traumatology, Hospital de Sant Celoni, Sant celoni, Spain
2. Orthopaedics and Traumatology, Hospital de Sant Celoni, Sant Celoni, Spain
3. , Hospital de Sant Celoni, Sant Celoni, Spain

Keywords: forefoot, percutaneous

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Various forefoot pathologies can be addressed with percutaneous surgery. This study evaluates the clinical and radiological outcomes of forefoot percutaneous surgery performed during a two-year period at a small public hospital. Materials and Methods: A retrospective review was conducted on all percutaneous forefoot surgeries performed in 2021 and 2022. A total of 182 procedures in 109 patients were analyzed, including hallux valgus (71), Weil osteotomies for metatarsalgia (48), hammer toe (49), bunionette (6), and hallux rigidus (8). Results: Complications included one wound infection (0.54%) and one case of medial hypoesthesia. Hallux valgus surgeries showed significant improvement in the hallux valgus angle (30.88±9.52° to 15.29±7.27°, $p<0.001$) and intermetatarsal angle (12.92±2.64° to 10.67±2.65°, $p<0.001$). Recurrence rates were 4.2% for hallux valgus, 6.2% for metatarsalgia, and notable recurrence in 5 hammer toe cases (10.2%), with 4 requiring revision surgery (8.1%). For hallux rigidus, cheilectomy and dorsal wedge osteotomies were performed, with one patient experiencing recurrence of pain, though no revision surgery was required to date. Conclusion: Percutaneous forefoot surgery demonstrates generally favorable outcomes with low infection and neurovascular complication rates. However, the high recurrence rate of hammer toe in our series suggests a need for reassessment of the surgical technique.

#43121 : An updated systematic review and meta-analysis of outcomes of open versus arthroscopic repair of lateral ankle ligament for lateral Ankle Instability

Preferred format : a podium presentation

Authors:

Sandeep Kumar Yadav (1), RAJESH KUMAR Rajnish (1)

1. Orthopaedics, AIIMS, Jodhpur, India, Jodhpur, India

Keywords: ankle instability, anterior talofibular ligament

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Purpose: To perform a systematic review and meta-analysis to compare the outcomes of open versus arthroscopic repair. Methods: We performed primary electronic search across PubMed, Embase, Scopus, and Cochrane Library databases, and looked for the comparative studies that evaluated the medial versus lateral approach in TKA for valgus knees. Statistical analyses were executed with RevMan-5.4.1. Results: This meta-analysis suggested a significant difference in Karlsson [MD 1.10; 95%CI 0.34,1.87; p=0.005] and JSSF scores [MD 1.86 ; 95% CI of 0.74,2.97; p=0.001], and talar tilt [MD 0.28; 95% CI 0.14-0.41; p<0.0001] in the open group compared to the arthroscopic repair group; however, our results failed to show a significant difference in terms of AOFAS scores [MD 0.56 (95% CI -0.06,1.18; p=0.08], overall complications [OR 0.81; 95% CI of 0.53-1.25, p=0.34], wound-related complications [OR 0.49; 95% CI of 0.22, 1.09; p=0.08], nerve injuries, knot pain, anterior drawer test, VAS score [MD -0.31; 95% CI -0.62, 0.00; p=0.05] and duration of surgery [MD -5.16; 95%CI -11.91,1.60; p=0.13] between the two procedures for the lateral ankle instability. Conclusion: Current evidence shows comparable outcomes and complications for lateral ankle instability repair either through arthroscopic or open repair.

#43122 : Medicaid and uninsured patients have delayed presentation and surgical treatment of achilles tendon rupture

Preferred format : a podium presentation OR a poster presentation

Authors:

Omar Samara (1), Hyewon Kim (1), Isabel Herzog (2), Tyler Stewart (1), Balazs Galdi (1), Sheldon Lin (1)

1. , New Jersey Medical School, Newark, USA
2. , , Saratoga Springs, USA

Keywords: Achilles rupture, insurance status, Medicaid, trauma, health disparities

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Purpose: To determine if insurance type affects the timing of diagnosis, treatment, complication rate of Achilles tendon ruptures. Methods: Multi-center retrospective review of adult patients with traumatic acute Achilles tendon ruptures identified by CPT codes 27650 and 27654 between January 2017 to December 2023. Insurance status was divided into private insurance (PI) or Medicaid/uninsured. The dates of injury (DOI), presentation to Emergency Department (ED), presentation to orthopedist, time to surgery, and complications were analyzed. Results: 23 patients had PI and 15 were Medicaid/uninsured. The time from DOI to ED visit was not significantly higher in uninsured/Medicaid patients than the PI cohort (0.5 vs 3.7 days, p=0.119). The time from DOI to physician visit was significantly higher for Medicaid/uninsured patients than PI patients (23.9 vs 8.2 days; p=0.005). The time from DOI to surgery was significantly higher for the Medicaid/uninsured cohort than PI patients (14.3 vs 35.60 days, p=0.009). However, there was no statistically significant difference in time from physician visit to surgery between uninsured/Medicaid and PI patients (13.2 vs 8.5 days, p=0.219). Complications included one retear and one saddle PE resulting in mortality in the PI cohort and one retear and one DVT in the Medicaid/uninsured cohort. Conclusion: Compared to their PI counterparts, patients with acute Achilles tendon ruptures who were uninsured/Medicaid had significantly increased time between date of injury and visit with orthopedist, subsequently resulting in increased time to surgery.

#43123 : Reconstructive surgery following resection of melanocytic squamous cell carcinoma

Preferred format : a podium presentation

Authors:

Julio Kessel (1), Liset Perez (2), Joy Latif (3), Enrique Rosario Aloma (4)

1. Orthopedics , Jackson North Medical Center , Miami, USA
2. Surgery, Mercy Hospital/Barry University, Miami, USA
3. Orthopedics , Jackson North Medical Center, Miami, USA
4. School of Podiatric Medicine, Barry University, Hialeah, FL 33010, USA

Keywords: reconstructive surgery, melanocytic, squamous cell carcinoma, flap, Keystone

Your abstract (DO NOT add the title, list of authors or keywords in this field)

This case report presents a 74-year-old male with a melanocytic lesion in the left leg that tested positive for squamous cell carcinoma in a dermatology office. The dermatologist referred the patient for surgical intervention. Immediate radical resection of the lesion with wide borders was recommended. The procedure was performed using an elliptical incision with 1cm borders. The resected lesion with clean borders was sent to pathology for evaluation. The surgical area was reconstructed with a proximal Keystone pedicle flap and anchored in place with sutures and a bolster dressing. The pathology report showed complete resection of the squamous cell carcinoma lesion with clean borders. The sutures were removed at 3 weeks. The patient was discharged from care at 4 months after surgery with a fully closed surgical area and no post-operative infections or complications, although he experienced some delay healing. He continued to follow-up for a year, at which point the flap had completely assimilated with minimal scarring. This case demonstrates that with proper margin resection, Keystone flaps are a viable reconstructive solution to skin and soft tissue malignancy resection surgery.

#43125 : Navicular osteochondroma with a clinical presentation of posterior tibial tendonitis

Preferred format : a podium presentation

Authors:

Gabriel Ocasio Martinez (1), Hansel Viera (1), Rafael Betancourt (1), Hajar Ouassari (1), Enrique Rosario Aloma (2)

1. School of Podiatric Medicine, Barry University, Miami, USA
2. School of Podiatric Medicine, Barry University, Hialeah, FL 33010, USA

Keywords: navicular, ostechondroma, posterior tibial tendonitis, pathology, bone tumor

Your abstract (DO NOT add the title, list of authors or keywords in this field)

This case report presents a 67-year-old male with pain in the left foot. The pain was present at the level of the navicular. The patient had previously consulted another physician, who informed him he had posterior tibial tendinitis and needed surgery to correct it. The patient arrived requesting a second opinion. Radiographs indicated a neoplasm of unknown behavior in the navicular of significant size, but of seemingly benign nature with the radiographic features of an osteochondroma. The patient had a history of colon cancer and was very concerned about a possible malignancy in the bone. He consented to immediate removal. During the procedure, the posterior tibial tendon was reflected with its bony navicular attachment, which allowed access to the tumor. The neoplasm was completely resected, and the borders thoroughly curetted. The osseous defect was filled with demineralized bone matrix and the navicular fragments were reapproximated and fixated with a screw. The pathology report confirmed the diagnosis of osteochondroma. The patient recovered well without any complications, with a full recovery at 3 months. The patient continued to follow-up every 3 months to monitor and check for any new neoplastic developments in the lower extremities. At one year, there were no new developments to report, and the patient was discharged. This case demonstrates how some neoplasms can present with symptoms that mimic common musculoskeletal pathology.

#43126 : Impact of foot and ankle fractures on plantar pressure distribution: a dynamic pedobarography study

Preferred format : a podium presentation OR a poster presentation

Authors:

Siddhartha Sharma (1), Melvin Shaji (1), Ankit Dadra (2), Sandeep Patel (1), Mandeep Dhillon (3)

1. ORTHOPAEDICS, PGIMER CHANDIGARH, Chandigarh , India
2. ORTHOPAEDICS, PGIMER CHANDIGARH, Chandigarh, India
3. ORTHOPAEDICS, Fortis Hospital, Mohali, Chandigarh , India

Keywords: Pedobarography, plantar pressure, Lisfranc injury, calcaneum, fracture, ankle

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Fractures of ankle and foot necessitate prompt surgical intervention and postoperative assessment is usually based on radiographs and functional scores. The aim of the current study is to analyze pedobarographic changes following foot and ankle injuries. Methods: The study included 71 patients assessed at a mean follow-up of 27 months with dynamic pedobarography. Radiographs were performed to check for arthrosis. EQ-5D-5L and MOxFQ scores were calculated for functional outcomes. Results: Pedobarographic analysis after talus fractures and Lisfranc injuries indicated a reduction in certain stance phase parameters, such as single limb support line and maximum forefoot force, along with an increase in swing phase duration compared to the uninjured foot. Additionally, there was an elevation in midfoot force post-talus fractures. However, ankle or calcaneus fractures did not show significant alterations. Radiological findings revealed arthritis in 7 of 22 Lisfranc cases, which was a significant predictor of forefoot force changes. The EQ-5D-5L index and MOxFQ scores following ankle, calcaneus, Lisfranc/midfoot, and talus fractures were 0.54±0.46, 0.16±0.28, 0.31±0.35, 0.25±0.34, and 26.7±25.8, 43.75±11.83, 36.2±18.4, 39.37±20.5, respectively. Conclusion: Lisfranc injuries result in significant pedobarographic changes, reflecting gait adaptations due to arthritis. A well-fixed ankle or calcaneus fracture has no significant change in pedobarographic parameters.

#43127 : Minimally invasive surgical management of bunionette deformity (tailor's bunion) using fifth metatarsal osteotomies: a systematic review and meta-analysis

Preferred format : a podium presentation OR a poster presentation

Authors:

Thomas Lewis (1), Peter Lam (2), Yousif Alkhalfan (3), Robbie Ray (1)

1. King's Foot and Ankle Unit, King's College Hospital NHS Foundation Trust, London, United Kingdom
2. Orthopaedic and Arthritis Specialist Centre, Orthopaedic and Arthritis Specialist Centre, Chatswood, Sydney, Australia, Sydney , Australia
3. Guy's and St Thomas NHS Foundation Trust, Guy's and St Thomas NHS Foundation Trust, London, United Kingdom

Keywords: Bunionette, Tailor's bunion, Fifth metatarsal, Percutaneous surgery, Minimally invasive, Foot deformity, Metatarsal osteotomy, Soft tissue release, Surgical correction, Outcomes assessment

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: There has been increasing interest in the use of percutaneous or minimally invasive osteotomy techniques for bunionette correction. The aim of this systematic review was to investigate the clinical and radiographic outcomes following percutaneous or minimally invasive surgery for bunionette deformity correction. Methods: A systematic review following PRISMA guidelines was undertaken. All clinical studies published in Medline, Embase, PubMed and the Cochrane Library Database from inception until December 2023 reporting on the use of a percutaneous or minimally invasive osteotomy techniques for bunionette deformity correction were included. The primary outcome was radiographic deformity correction. A meta-analysis of clinical and radiographic outcomes was performed to assess the mean difference following surgery. Risk of bias was assessed using the ROBINS-I tool. Results: A total of 942 potential studies were identified of which 18 were included encompassing 714 feet in 580 patients. There were no comparative studies identified. The majority of studies (n=14/18) utilized an unfixed distal osteotomy technique. All studies showed a statistically significant improvement in clinical outcomes (AOFAS and VAS Pain) and radiological outcomes (4-5 intermetatarsal angle and fifth metatarsophalangeal angle). Complication rates ranged from 0-21.4%. The non-union rate was 0-5.6%. Overall risk of bias was low-moderate. The most common complication was development of a hypertrophic callus which tended to resorb over time without needing further surgical intervention. Conclusion: Percutaneous techniques for bunionette deformity correction are clinically safe and effective with significant improvement in radiographic alignment and patient reported outcome measures. PROSPERO REGISTRY: CRD42024497258

#43128 : Orthoplastic approach using microvascular muscle flap for the treatment of deformity wound: a case study.

Preferred format : a podium presentation

Authors:

Hajar Ouassari (1), Hansel Viera (1), Rafael Betancourt (1), Gabriel Ocasio Martinez (1), Joy Latif (2), Enrique Rosario Aloma (3)

1. School of Podiatric Medicine, Barry University, Miami, USA
2. Orthopedics , Jackson North Medical Center, Miami, USA
3. School of Podiatric Medicine, Barry University, Hialeah, FL 33010, USA

Keywords: surgery, orthoplastic, muscle flap, microvascular, deformity, wound, hallux valgus, lapidus, fusion, bone graft

Your abstract (DO NOT add the title, list of authors or keywords in this field)

This case presentation interprets the relationship between a severe hallux valgus deformity, its complications, and its treatments, notably the use of a muscle flap for a painful non healing ulcer with associated bone necrosis. The primary objective was to rectify the deformity through a comprehensive surgical approach informed by foot deformity literature. Surgical correction involved first a tarsometatarsal joint arthrodesis, then a first metatarsophalangeal joint arthrodesis, followed by a distal metatarsal osteotomy. To address the challenging wound with atrophied plantar fat, a microvascular muscle flap was utilized, providing well-vascularized tissue for infection resistance, supporting effective wound healing, and offloading support for the first metatarsal head. A rotational skin flap was then performed to close the skin defect after the wound edges were surgically prepared. The management approach underscores a commitment to patient-centered care and evidence-based practices in foot surgery utilizing a multidisciplinary surgical approach that includes orthopedic deformity correction, microvascular surgery and plastic soft tissue reconstruction.

#43129 : Pseudarthrosis: A Complication of Conservative Treatment for Malleolar Fractures - A Retrospective Study

Preferred format : a podium presentation OR a poster presentation

Authors:

Sara Rodrigues (1), João Caetano (1), Francisco Baptista (1), Miguel Duarte Silva (1), Marta Pinto Gomes (2), Nuno Corte-Real (1), Miguel Padua Figueiredo (1)

1. , Hospital de Cascais, Lisboa, Portugal
2. , Hospital da Luz , Porto, Portugal

Keywords: Pseudarthrosis, malleolar fractures, conservative treatment

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Malleolar fractures are prevalent in orthopaedics, with aligned external malleolar fractures often managed conservatively to avoid surgical complications. However, pseudarthrosis, a potential complication of conservative treatment, lacks well-defined incidence rates and risk factors. In a retrospective study spanning from October 2020 to October 2023, we examined patients in our unit who underwent surgical intervention for pseudarthrosis in malleolar fractures following conservative treatment. Sixteen cases were identified, each with a minimum 6-month post-injury evolution before surgery. The average post-operative follow-up period was 5.4 months. Of the patients, 4 were male and 12 were female, averaging 50.1 years in age. Most cases involved unimalleolar fractures (15), with one trimalleolar equivalent fracture. Danis-Weber classification revealed 8 Weber A and 8 Weber B fractures. Surgical intervention typically involved ankle arthroscopy, with 25% of patients requiring treatment for associated injuries. Fibular fixation employed plates in 10 cases and screws in 6, with bone grafts necessary in 4 cases, including one tricortical graft. All fractures achieved full consolidation within the follow-up period. Pseudarthrosis onset prolongs functional recovery and may correlate with poorer outcomes. Smoking and associated injuries emerged as potential risk factors in our analysis. This retrospective investigation highlights the necessity for further research, particularly randomized controlled trials, to elucidate pseudarthrosis occurrence and refine treatment strategies. Nevertheless, surgical intervention generally yields favorable clinical and radiological outcomes in managing this complication

#43130 : Extruded talus injuries are associated with significant complications: a double center series with minimum 1-year follow up

Preferred format : a podium presentation OR a poster presentation

Authors:

Siddhartha sharma (1), Prasoon Kumar (2), Ankit Dadra (3), sandeep patel (3), Mandeep dhillon (4)

1. ORTHOPAEDICS, PGIMER Chandigarh , Chandigarh , Italy
2. ORTHOPAEDICS, PGIMER, Chandigarh, India
3. ORTHOPAEDICS, PGIMER Chandigarh , Chandigarh , India
4. ORTHOPAEDICS, Fortis Hospital, Mohali, Chandigarh , India

Keywords: extruded talus, talectomy, reimplantation, ankle fusion

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: Extruded talus (ET) injuries are rare, but high-energy open pantalar dislocations. Literature on these injuries is sparse and optimal treatment protocols are ill defined. The current study documents the clinical and radiological outcomes in cases seen at 2 centers, in an attempt to determine whether surgeons should choose primary reimplantation or primary talectomy and fusion for these injuries. Methods: Patients with ET injuries were identified from the database of two hospitals. Baseline demographics and treatment details were evaluated, and patients were called for follow-up. Radiological evaluation was conducted, and function was evaluated by the AOFAS hindfoot score. Outcomes and complications were compared between patients who had undergone primary talectomy versus primary reimplantation. Predictors of poor functional outcomes were determined. Results: Of 23 patients, 15 were followed up for an average of 45.7 months. Nineteen underwent reimplantation and four had talectomy with tibio-calcaneal arthrodesis, achieving a mean AOFAS score of 66.2. Complications included AVN in 5, ankle arthrosis in 10, subtalar arthrosis in 4, and infection in 4, with no salvage arthrodesis needed. There was no difference in demographics, range of motion, AOFAS scores, or complication rates between reimplantation and talectomy, but complications negatively correlated with AOFAS scores (Pearson’s $r = 0.6$, $P = 0.02$). Conclusion: Despite optimal treatment, ET injuries cause significant impairments and complications, with no difference between reimplantation and talectomy. Reimplantation is preferred as it preserves the ankle joint and bone stock for future procedures.

#43131 : Proximal medial gastrocnemius release in the treatment of diabetic foot ulcers

Preferred format : a podium presentation

Authors:

Sebastiaan Terwogt (1, 2), Wouter Brekelmans (3), Menno Bénard (4), Wilbert Van Laar (1)

1. Department of orthopaedics, Alrijne Zorggroep, Leiderdorp, The Netherlands
2. , Leidsch Universitair Medisch Centrum, Leiden, The Netherlands
3. Department of surgery, Alrijne Zorggroep, Leiderdorp, The Netherlands
4. , Alrijne Zorggroep, Leiderdorp, The Netherlands

Keywords: Diabetic foot ulcer, equinus contracture, proximal medial gastrocnemius release, wound healing

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Lengthening of the triceps surae complex is an effective way in lowering the ulcer recurrence and can surgically be achieved in globally three ways. PMGR is effective in reducing the tightness of the gastrocnemius muscle, and direct weightbearing is allowed without a cast. However, the success rate of this procedure as treatment for the DFU is unknown. The goal of this study is to determine the recurrence risk of the DFU in patients who underwent a PMGR procedure. This retrospective medical record analysis describes the outcomes of 20 PMGR procedures in 14 patients. The duration of the ulcer, preoperative dorsiflexion, wound healing postoperatively, and recurrence were considered. All patients that were included in this study had a positive Silfverskiöld test preoperatively. Postoperatively 18/20 (90%) of the procedures achieved wound healing of the DFU within 4 weeks and 4/20 (20%) of the procedures had postoperative complications. At a mean of 9.2 months 10/20 (50%) of the procedures showed a recurrence of the ulcer and gastrocnemius shortening of which 9/10 (90%) chose for a secondary procedure. This retrospective medial record analysis shows that PMGR is effective in short-term wound closure in patients with a DFU, however PMGR does not provide sufficient length gain in the longer-term during treatment of DFU, and there is a risk of recurrence of the ulcer. In our opinion PMGR is not effective in the long-term treatment of the DFU. More powerful procedures should be considered, such as a more distal gastrocnemius release or percutaneous Achilles tendon lengthening.

1. ANKLE

Sandeep Patel

#43132 : Influence of Syndesmotic injury patterns on mid term functional and radiological outcomes in complex ankle fractures.

Preferred format : a podium presentation

Authors:

Sandeep Patel (1), Siddhartha Sharma (1), Mandeep Dhillon (1), Manjunath Nishani (1)

1. Orthopaedic Surgery, Postgraduate Institute of Medical Education and Research, Chandigarh, India

Keywords: Syndesmosis, Ankle fractures, functional Outcome

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background Syndesmosis injury can be of a varying magnitude; little information exists about the influence of the degree of initial syndesmotic injury on functional outcomes and follow-up radiological parameters. Aims and Objectives: To identify and define morphological patterns of syndesmotic injury in ankle fractures according to a zone-based evaluation and correlate the initial degree of instability with mid-term functional and radiological outcomes. Design: Retrospective cohort study, to review a prospective question. Materials and methods:40 complex ankle fractures out of 120 ankle fractures met the inclusion criteria i.e. significant documented syndesmosis involvement needing stabilization. Injury characteristics and fracture morphology were noted and classified by validated classification systems. The syndesmosis was divided into 3 zones on axial Ct section, A, B, and C from anterior to posterior, and the degree of displacement and morphology was noted. The patients were evaluated at the final follow-up with OMS, MOXFq & SF-12 Results:22 patients had Zone A injury(widening,AITFL,Chaput,Wagstaff fractures). 22 patients had widening of ZoneB. ZoneC was involved in 30 patients. Fracture reduction was excellent in all 40 patients and syndesmosis was widened in 5 patients. There was no significant difference in outcome scores based on fracture types (SERvsPER), Posterior malleolus morphology, or based on zones of syndesmosis injury. Syndesmosis malreduction contributed to significantly poorer outcomes(SF-12,OMAS,MoxFQ) Conclusion:Despite a zonal classification of syndesmotic injury on CT and more clarity of injury patterns, we could not correlate the site and extent of syndesmotic injury with final functional and radiological outcomes.

#43133 : Ankle fractures with Chaput fragment: A new classification system with insights into morphology and relation to surgical treatment

Preferred format : a podium presentation

Authors:

Sandeep Patel (1), Mandeep Dhillon (1), Siddhartha Sharma (1)

1. Orthopaedic Surgery, Postgraduate Institute of Medical Education and Research, Chandigarh, India

Keywords: Quadrimalleolar fractures, Chaput fracture, Patel-Dhillon Classification

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background:The Chaput fragment, a bony avulsion of the anterolateral margin of the distal tibia, is a less commonly discussed fracture pattern in ankle injuries. Its significance in ankle fractures and the optimal fixation technique remains unclear due to limited literature. This study aims to describe the morphology of ankle fractures with Chaput fragment and introduce a new classification system. Materials and methods: We retrospectively analyzed 33 patients with ankle fractures with associated Chaput fragment treated at our institute over a 3-year period. Data on patient demographics, fracture classification, surgical approach, and fixation method were collected, and a novel classification system for Chaput fragments was proposed. Results: Four distinct morphological types of Chaput fragment were identified (types 1–4), and three newer variants of trimalleolar fractures were identified (anterior, lateral, and medial variants). Type 1 refers to a small avulsion fragment attached to the anterior-inferior tibiofibular ligament; Type 2 is an anterolateral oblique type;Type 3 refers to an anterolateral fragment with extension into the medial malleolus and Type 4 is a comminuted Chaput fragment. Type 1 Chaput fragment was the most prevalent (60.6%), followed by Type 2 (24.3%), Type 4 (9.1%), and Type 3 (6.1%). The fixation methods ranged from screw fixation, plate fixation, and suture fixation to combinations of these techniques or even indirect stabilization with syndesmotic screws. Conclusion: Our new classification system based on morphology includes all possible variants of Chaput fracture. This preliminary data needs to be corroborated by more studies and validated by a larger number of observers

#43135 : Treatment of talar avascular necrosis with cadaveric talar graft and bone marrow transplantation

Preferred format : a podium presentation

Authors:

Hansel Viera (1), Julio Kessel (2), Liset Perez (3), Timothy Hoffmeister (1), Enrique Rosario Aloma (4)

1. School of Podiatric Medicine, Barry University, Miami, USA
2. Orthopedics , Jackson North Medical Center , Miami, USA
3. Surgery, Mercy Hospital/Barry University, Miami, USA
4. School of Podiatric Medicine, Barry University, Hialeah, FL 33010, USA

Keywords: talar avascular necrosis, talus, cadaveric graft, bone marrow, transplantation, ankle fusion, intramedullary nail, rod,

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Avascular necrosis of the talus has a higher incidence when associated with dislocation and fracture-dislocation of the talar body, due to soft-tissue detachment compromising blood supply. This interruption of arterial supply leads to tissue death, or necrosis, which manifests as a painful condition for the patient. While conservative treatment can be pursued by means of pharmaceutical regimen and supportive care, invasive maneuvers have served as a more effective approach when attempting to preserve the tibiotalar joint in the early stages of disease progression. This case report presents a patient with a chronic talar avascular necrosis caused by a traumatic talar neck fracture occurring 10 years prior. The patient also presented with severe nerve pain caused by the condition and diagnosed as complex regional pain syndrome. Surgical intervention was recommended, and the patient underwent a partial talar replacement using a cadaveric graft. The head of the native talus was healthy and thus left in place. Bone marrow was collected from the patient’s tibia using the reamer-irrigator-aspirator knows as the RIA system and was injected into the talar graft, which was then fenestrated to induce angiogenesis and prevent graft resorption. The graft was stabilized with a tibio-talar-calcaneal fusion using an intramedullary nail. The patient recovered well and was discharged from care at 3 months, free of pain following 1 month of physical therapy. At one-year post-operation, the patient reported no pain and presented with a healthy gait, fully-consolidated fusion, and intact graft.

#43136 : Post-traumatic hallux valgus with lateral metatarsal injuries: management and short-term results

Preferred format : a podium presentation OR a poster presentation

Authors:

Jordanna Bergamasco (1), Jordanna Bergamasco (2), Marcos Sakaki (3, 4)

1. , Santa Casa de São Paulo, Sao Paulo, Brazil
2. , Santa Casa de São Paulo, São Paulo, Brazil
3. , Universidade de São Paulo, São Paulo, Brazil
4. , Hospital municipal São Jose dos Campos, Sao Jose dos Campos, Brazil

Keywords: Posttraumatic; Hallux; Valgus; Deformity; Surgical repair

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objective: Describe the epidemiology, treatment, and clinical and radiographic results of traumatic hallux valgus associated with lateral metatarsal injuries. Methods: Clinical and radiographic evaluation (hallux valgus angle) of seven patients who suffered traffic accidents and presented post-traumatic hallux valgus associated with lateral metatarsal injuries. Radiographic measurements and clinical functional outcomes were evaluated with a minimum 12 months of follow-up. Results: All patients were submitted to medial ligament repair to treat post-traumatic hallux valgus and fixation of the associated fractures. In a minimum 12 months of follow-up, the patients evolved well, without pain, with a mean hallux valgus angle of 13.7 degrees. Conclusion: Cases of post-traumatic hallux valgus associated with lateral metatarsal injury, treated with ligament repair and fixation of associated fractures, showed radiographic improvement and maintained until the final evaluation after 12 months of follow-up.Level of Evidence IV; Therapeutic Studies; Case Series.

#43137 : Open calcaneal fractures with medial wound: mid-term results

Preferred format : a podium presentation OR a poster presentation

Authors:

Jordanna Bergamasco (1, 2), Jordanna Bergamasco (1, 2), Marcos Sakaki (3, 2)

1. , Santa Casa de São Paulo, São Paulo, Brazil
2. , Hospital municipal São Jose dos Campos, São José dos Campos, Brazil
3. , Universidade de São Paulo, São Paulo, Brazil

Keywords: Fractures, open; Calcaneus; Treatment.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objective: Present the clinical and radiographic results of a series of patients with open calcaneal fractures with medial wound. Methods: Retrospective study based on medical records of ten patients treated for open calcaneal fractures with medial wound from 2014 to 2020. All included patients had a minimum one-year follow-up. The variables analyzed were age, sex, laterality, associated diseases, mechanism of trauma, fracture according to Gustilo Anderson and Sanders classifications, associated fractures, surgeries performed, complications, and functional evaluation according to the AOFAS scale and radiographic evaluation. Results: The mean age of the patients was 47.3 years, nine men and one woman. According to Gustilo Anderson's classification, eight cases were grade IIIA and two grade II; in Sanders' classification, four were type II and six were type III. No case evolved with chronic osteomyelitis or required amputation. After a mean 31.3 months follow-up, all fractures showed consolidation in the radiographic evaluation, with a mean Bohler angle of 4.1 degrees. According to the AOFAS scale, the mean value was 77.7 in the functional evaluation. Conclusion: Open calcaneal fractures with medial wound are often treated in a non-standard manner. The functional and radiographic results followed the high variability of the treatments performed.

#43139 : Ankle fractures in the complex diabetic patients. Minimally invasive surgery and augmentation with ring fixation.

Preferred format : an ePoster Displayed

Authors:

Natalio Cuchacovich (1), Javier Mena (2), Patricio Fuentes (2), Nicolas Diaz (2), Maximiliano Rivera (2), Juan Bergeret (2), Gonzalo Bastias (2)

1. Traumatologia, Hospital del Trabajador, santiago, Chile
2. Traumatologia, Hospital del Trabajador, Santiago, Chile

Keywords: Diabetes, Ankle fractures, External fixation

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction. Ankle fractures in complex diabetic patients are associated with serious complications. Good results have been reported with MIS techniques in patients at risk of soft tissue complications and with the use of early containment frames in patients with diabetic neuroarthropathy. Our objective was to evaluate a minimally invasive management protocol with augmentation using ring external fixation. Method. Retrospective IRB approved study including 18 complicated diabetic patients with ankle fractures with a minimum follow-up of one year. Fibular intramedullary fixation was performed percutaneous, screws were used for the medial and posterior malleolar fractures. The stability of the construct was increased by using a ring external fixation. Demographic data, AOFAS scores, and Lower Extremity Functional Score (LEFS) functional scales were obtained, as well as a record of complications during the complete follow-up and visual analog scale (VAS). Results. The mean age and HBA1C were 56 years (R:37-73) and 9.8 ± 2.5 mg/dl. The external fixator time was 12.3 weeks (6-28) with complete healing in of 16/18 patients (89%) at 12.6 weeks (R:8-24). The average AOFAS was 79 (R:67-97), LEFS was 61.8% (R37.5-90). The most frequent complication was superficial pin infections (38.8%) and there was one case of secondary Charcot Neuroarthropathy. Conclusión. Minimally invasive fixation technique with augmentation using ring external fixation is a safe alternative for complex diabetic patients and high HBA1C values. In our patients, we achieved high union rates according to what is reported in the literature, with a low incidence of major complications and acceptable functional results.

#43140 : Atypical presentation of Synovial Sarcoma in the foot, with a secondary malignant hematoma

Preferred format : a podium presentation

Authors:

Liset Perez (1), Sydni Thompson (2), Valentina Clinton (2), Luis Rodriguez (2), Enrique Rosario Aloma (3)

1. Surgery, Mercy Hospital/Barry University, Miami, USA
2. School of Podiatric Medicine, Barry University, Miami, USA
3. School of Podiatric Medicine, Barry University, Hialeah, FL 33010, USA

Keywords: synovial sarcoma, foot, bone tumor, malignant neoplasm

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Abstract text: The purpose of this study is to report our experience with limb salvage surgery and metastasis prevention for a case with synovial sarcoma of the foot. The patient is a 56-year-old female that presented to HCA Florida Mercy ED on 11/01/23 with painful mass over the dorsal and plantar aspect of the left foot at the level of the 2nd and 3rd metatarsals after hitting her foot. The patient had noticed the mass 2 months prior but swelling and pain had increased significantly following the incident. Patient was originally diagnosed with Giant Cell Tumor by outpatient MRI. The soft tissue mass was excised using both, plantar and dorsal incisions at the second and third interspace with a #10 blade and curette. The sample was sent to pathology and histologic sections were consistent with a high-grade synovial sarcoma, grade 3 of 3. Due to a home accident, the plantar sutures ruptured, and a malignant hematoma formed over the plantar incision site, with rapid growth. The patient was scheduled for wide surgical resection of second mass formation, and a leaking vessel responsible for the hematoma was repaired. The specimen was further sent to pathology to rule out synovial sarcoma. Pathologic results confirmed some atypical hypercellularity, but with clean wide margins. Patient was referred to oncology and 8 weeks of oral chemotherapy treatment was recommended. Six months post-operatively the patient made full recovery with complete wound closure and no soft tissue mass recurrence.

#43142 : Lisfranc injuries. More common than we think? A retrospective observational study

Preferred format : a podium presentation OR a poster presentation

Authors:

Panagiotis Christidis (1), Georgios Christidis (1), Georgios Biniaris (1), Nikolaos Gougoulias (1, 2)

1. Department of Trauma & Orthopaedics, General Hospital of Katerini, Katerini, Greece
2. Department of Orthopedic Surgery, Firmley Health NHS Foundation, Firmley Park Hospital, London, United Kingdom

Keywords: Lisfranc, trauma, midfoot, incidence, observational study

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction: Historical data estimated the incidence of Lisfranc's injuries in 1/55000 person-years. A recent study from Norway, however, revealed an, a lot higher, incidence of 14/100,000 person-years, of which 31% were high-energy injuries (doi: 10.1016/j.fas.2019.06.002). This study aims to provide the incidence of Lisfranc injuries in the regional unit of Pieria in Greece (population: 123.245 as per 2021 cencus). Materials/methods: This is a retrospective observational study of patients with Lisfranc injury presenting to the Emergency Department of a district general hospital from 11/2021 to 02/2024. Results: Search of medical records revealed 63 patients with midfoot injury and median age 41.4±21.1 years. Ligamentous injuries were diagnosed in 77.8% (49/63) and osseous injuries in 22.2%(14/63) of patients. The described mechanism of injury was: 47.6% (30/63) hyperextension, 4.3% (9/63) rotation, 15.9% (10/63) fall of foreign body and 7.9% (5/63) crush injury. Fifty-four (85.7%) received non-operative treatment. Operative treatment was proposed to 14.3% (9/63) patients, with high energy injuries and displacement. One of those opted for nonoperative management. Seven had bony fracture dislocations and 1 had ligamentous injury. Five were treated with ORIF, and 3 with primary arthrodesis. Plate and screws fixation was performed in 6 patients, whereas screw fixation was used in two. Metal screw removal was required in 2 patients. Conclusion: Lisfranc injury incidence was estimated in 25/100.000 people/years, more common than previously thought. Most cases were low energy ligamentous injuries, treated nonoperativley. High energy injuries with displacement, required surgery with no immediate postoperative complications.

#43143 : Preoperative planning using 3D printing for trimalleolar ankle fracture. Utility and influence according to the degree of experience of Foot and Ankle surgeons

Preferred format : an ePoster Displayed

Authors:

Patricio Fuentes (1), Javier Mena (1), Maximiliano Hube (1), Natalio Cuchacovich (2), Gonzalo Bastias (1)

1. Traumatologia, Hospital del Trabajador, Santiago, Chile
2. Traumatologia, Hospital del Trabajador, santiago, Chile

Keywords: Trimalleolar ankle fracture, Preoperative planning, three dimensional bone model

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Introduction. Three-dimensional bone models have been used in preoperative planning, implant development, and medical education. There is little evidence to demonstrate their usefulness, but it is postulated that they would not generate relevant changes in the preoperative evaluation. Method. This was a descriptive cross-sectional study. Four groups of surgeons with different years of training in ankle and foot surgery were selected (> 5 years and < 5 years, foot and ankle fellows, and residents). Each group included four participants and 8 trimalleolar ankle fractures were reviewed. Through a digital survey, participants were asked to respond to the surgical plan (approaches and fixation strategy) by reviewing preoperative radiographs and CT scans. Three weeks later, surgeons were asked to respond to the survey by adding a printed 3D model to each case. We used Cohen's kappa as a statistical tool. Result. The results in the different groups were as follows: foot and ankle surgeons with more than five years of experience obtained a kappa of 0.79 (Strong). Foot and ankle surgeons with less than five years of experience reported a kappa of 0.66 (moderate). Foot and ankle fellows obtained a kappa of 0.64 (moderate) and orthopedic residents a kappa of 0.5 (weak). Conclusion. The use of 3D models does not generate a change in preoperative planning in the group of foot and ankle surgeons with more experience; however, they can be useful for surgeons with less than five years of experience and post-fellowship surgeons.

#43144 : Orthoplastic reconstruction of lower limb with cadaveric tibial and talar grafting, bone marrow transplantation, and fasciocutaneous flaps.

Preferred format : a podium presentation

Authors:

Enrique Rosario Aloma (1), Julio Kessel (2), Liset Perez (3), Timothy Hoffmeister (4)

1. School of Podiatric Medicine, Barry University, Hialeah, FL 33010, USA
2. Orthopedics , Jackson North Medical Center , Miami, USA
3. Surgery, Mercy Hospital/Barry University, Miami, USA
4. School of Podiatric Medicine, Barry University, Miami, USA

Keywords: orthoplastic, bone graft, cadaveric graft, tibial replacement, talar replacement, bone marrow transplantation, fasciocutaneous flap

Your abstract (DO NOT add the title, list of authors or keywords in this field)

This case report presents a 52-year-old male seen for avascular necrosis of the left tibia and talus. The patient was diagnosed 3 years prior with spindle cell osteosarcoma of the distal tibia. He underwent resection of the distal 60% of the tibia and replacement with a cadaveric graft. At the time, the surgeon attempted to save the ankle joint and did not fuse it. Over the course of the next 3 years, the reconstruction failed, and the patient had 3 surgeries to salvage the leg, including resection of the fibula to use it as a supplemental graft. The patient was taken to the operating room for one last attempt to salvage the limb. The necrosed tibia and talus were resected and were replaced with full cadaveric grafts, treated with auto-transplanted bone marrow. A posterior splint was applied for 6 weeks and then the patient was transitioned to a CAM walker. An ulceration formed in the medial aspect of the ankle at 4 weeks post-op and was first treated with local wound care. After no progress was observed for the next 3 months, the ulcer was repaired with a propeller flap. Double keystone flaps were used to repair the donor site and the osteotomy was revised using compression staples. After 8 weeks, the patient was sent to physical therapy where he spent 3 months. The patient was fully discharged with a CROW boot at 10 months post-operatively.

#43145 : Utility of Weight-Bearing Computed Tomography in Postoperative Assessment of Ankle Fractures

Preferred format : an ePoster Displayed

Authors:

Mateusz Malik (1), Jakub Kwiatkowski (1), Artur Gądek (1, 2), Agnieszka Lechowska-Liszka (3), Henryk Liszka (1, 2)

1. , Department of Orthopedics and Traumatology, University Hospital in Cracow, Kraków, Poland
2. , Department of Orthopedics and Physiotherapy, Medical College Jagiellonian University, Kraków, Poland
3. , Institute of Applied Sciences, Faculty of Motor Rehabilitation, University of Physical Education in Krakow, Kraków, Poland

Keywords: ankle fractures; ankle; fractures; weight-bearing computed tomography; weight-bearing CT; weight bearing; cone beam CT

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Ankle fractures are among the most common injuries necessitating surgical intervention. The assessment of the treatment outcomes typically involves standard ankle radiographs in various projections, with computed tomography (CT) scans being less frequently employed. Despite successful surgical procedures, some patients may continue to experience residual symptoms over time, even when conventional radiographic assessments suggest satisfactory results. Weight-Bearing Computed Tomography (WBCT), while not yet widely integrated into clinical practice due to limited availability, holds promise for evaluating lower-limb deformities, injuries, and arthritis. This article focuses on the potential utility of WBCT for midterm assessment following ankle fracture fixation, exploring the statistically measured correlations between the functional outcomes approximately one-year post-surgery and the parameters assessed via WBCT scans in these patients. Furthermore, we compare these correlations with those obtained from the parameters assessed in the standard ankle radiography views (AP, lateral, and mortise views) of the same patients. We emphasize the advantages of WBCT over traditional radiography methods and advocate for further research in this area.

#43148 : Amnion Injection as a Treatment for Delayed Union: A Case Study

Preferred format : a podium presentation OR a poster presentation

Authors:

Apeksha Reddy (1), Alexander Nguyen (1)

1. , HCA Florida Mercy Hospital, Miami, USA

Keywords: Avulsion fracture, fifth metatarsal, Delayed union, Amnion particulate injection, regenerative medicine

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Amnion injections have been used to primarily treat tissue injuries, however, there is limited research on its usage for treating delayed union of fractures especially of the fifth metatarsal. This case study documents the progression of a patient's fifth metatarsal base avulsion fracture from initial onset to delayed union to achieving successful union. A 51-year-old female with no significant past medical history presented to the clinic with chief complaint of pain on the dorso-lateral aspect of the left fifth metatarsal base. Patient stated that she suffered an inversion ankle sprain the day prior. She was only taking Tylenol as needed due to a history of gastric bypass surgery in which she was unable to take other oral pain medications. Upon reviewing the x-rays, it was noted that there was a radiolucency going across the fifth metatarsal at the level of the tuberosity which was indicative of an avulsion fracture. After three months of conservative treatments, the patient showed no improvement in regards to her pain symptoms and x-rays. The patient was given the option of PRP vs amnion particulate injection in which she opted for the latter. After the administration of amnion particulate injection, the patient reported having decreased pain. Radiographic evidence revealed the presence of callus formation at the fracture site. Further exploration on the therapeutic effects of amnion on delayed union fractures should be encouraged due to its availability and limited ethical issues. Regenerative medicine may be an excellent option for patients who aren't surgical candidates.

#43149 : THE OUTCOME OF FIRST-RAY AMPUTATION IN DIABETIC PATIENTS

Preferred format : a podium presentation

Authors:

Helio Henrique Paiva Junior (1), Marco Tulio Costa (1), Mielna Cursino (1), Marcelo Marcucci Chakkour (1), Noé De Marchi Neto (1), Jordanna Maria Pereira Bergamasco (1)

1. Departamento de Ortopedia e Traumatologia, Santa Casa de Misericórdia de São Paulo, Sao Paulo, Brazil

Keywords: diabetic foot, amputation

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: To evaluate, in diabetic patients with peripheral neuropathy, the outcome of disarticulation of the hallux or partial/total dislocation of the first metatarsal, as well as the late deformities associated with this procedure and its consequences. Methods: We evaluated 34 patients (36 feet) with diabetes and peripheral neuropathy who underwent partial or total first-ray amputation, with a minimum follow-up of 6 months and regular outpatient follow-up, and using specific footwear and insoles for insensitive feet. Four feet (11%) underwent interphalangeal disarticulation of the great toe, 24 (67%) underwent metatarsophalangeal disarticulation of the great toe, 4 (11%) underwent transmetatarsal amputation of the first metatarsal, and 4 (11%) underwent first-ray metatarsocuneiform disarticulation. Three clinical changes were evaluated, i.e., claw-toe formation, callus formation, and ulcer formation, and two radiographic changes were evaluated, i.e., progression to Charcot arthropathy and hypertrophy of the second metatarsal head. Results: After a mean follow-up of 29 months, the most common alteration was claw-toe formation, which occurred in 27 feet (75%), and the least common was Charcot arthropathy, which occurred in 4 feet (11.1%). Six feet developed ulcers (16.6%), and 8 feet (22.4%) had hypertrophy of the second metatarsal head. None of the patients evaluated required further surgical intervention. All were regularly followed up at an outpatient clinic. Conclusion: Claw toe and calluses were common clinical findings. Complications such as new ulcers and Charcot arthropathy were not common in this group of patients, who wore correct footwear and maintained regular

#43150 : Posterior ankle arthroscopy: Medial first technique

Preferred format : a podium presentation OR a poster presentation

Authors:

Abdurrahman Vural (1), İbrahim Kaya (2), Resul Bircan (3), Mehmet Ali Tokgöz (4), Ahmet Yıldırım (5), Ulunay Kanatlı (4)

1. , Istanbul Başaksehir Pine and Sakura City Training and Research Hospital, İstanbul, Türkiye, İstanbul, Turkey
2. orthopedics and traumatology, Dr Abdurrahman Yurtaslan Oncology Training and Research Hospital, Ankara, Turkey
3. , Dr Abdurrahman Yurtaslan Oncology Training and Research Hospital, Ankara, Turkey
4. , Gazi University Medical Faculty Hospital, Ankara, Turkey
5. , Health Sciences University Konya City Hospital, Konya, Turkey

Keywords: Posterior ankle arthroscopy, Hindfoot endoscopy, Complications

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objective: Posterior ankle arthroscopy and hindfoot endoscopy have gained popularity since Van Dijk's introduction of the two-portal technique in 2000. Due to its complexity and higher risk of complications, it remains less common than anterior ankle arthroscopy. Van Dijk's series included 328 cases with a 2.3% complication rate. This study aims to develop a simpler and safer technique for posterior ankle arthroscopy, aiming to reduce complication rates and increase feasibility, based on the largest case series in the literature. Methods: This study included 424 cases of posterior ankle arthroscopy and hindfoot endoscopy performed from 2002 to 2024. We recorded both intraoperative and postoperative complications. Our technique employs standard posteromedial and posterolateral portals, with the posteromedial portal initially used as the viewing portal and the posterolateral portal as the working portal. The posteromedial portal is created near the Achilles tendon, with the trocar aimed toward the lateral malleolus, almost parallel to the ankle joint. Results: The patient cohort was 49.3% male and 50.7% female, with a mean age of 40.1 years (range 12-76). Nine complications were recorded, yielding an overall complication rate of 2.1%. Neurological complications constituted 4 (44.4%) of the complications (2 tibial nerve injuries, 1 tibial neuropraxia, 1 sural nerve dysesthesia). Other issues included 1 flexor hallucis longus (FHL) tendon injury, 2 superficial infections, 1 tibial artery injury, and 1 posterolateral portal cyst. Conclusion: Using the posteromedial portal for viewing and the posterolateral portal for working may reduce the risk of injury to neurovascular structures and the FHL tendon.

#43151 : Endoscopic Flexor Hallucis Longus Transfer for Atypical Acute Achilles Tendon Rupture: A Small Case Series

Preferred format : a podium presentation

Authors:

Francisco Aguilar Baptista (1), António Mendes Serrano (2), Sara Rodrigues (3), Rita Alçada (1), João Caldas Caetano (1, 4), Miguel Pádua Figueiredo (1, 5), Nuno Côrte-Real (1)

1. Serviço de Ortopedia, Hospital de Cascais - Dr. José de Almeida, Alcabideche, Portugal
2. Serviço de Ortopedia - HSFX, Unidade Local de Saúde Lisboa Ocidental, Lisbon, Portugal
3. Ortopedia, Hospital de Cascais - Dr. José de Almeida, Alcabideche, Portugal
4. UCMA Lisboa, Fidelidade – Companhia de Seguros, S.A., Lisbon, Portugal
5. Ortopedia, Hospital CUF Tejo, Lisboa, Portugal

Keywords: Flexor Hallucis Longus Transfer, Achilles Tendon Rupture, Endoscopy, Tendinopathy, Chronic Rupture

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background The optimal surgical treatment for acute Achilles tendon ruptures remains controversial. Minimally invasive methods are often preferred over open methods for their advantages. However, while surgical methods ensure the restoration of Achilles tendon length, the tendon's quality can be unreliable when directly repaired, especially with prior tendinopathy increasing the risk of repair failure. Objectives This study presents the isolated endoscopic transfer of the Flexor Hallucis Longus (FHL), typically used for chronic ruptures, as an alternative for direct repair of acute Achilles tendon ruptures. Methodology We analyzed six patients, median age 35 years [19-53], with acute Achilles tendon ruptures presenting atypically: 2 insertional ruptures, 2 mid-substance ruptures with prior tendinopathy, 1 segmental rupture, and 1 proximal third rupture. Each patient underwent isolated FHL endoscopic transfer. Pain and functionality were assessed at 6 months and 2 years post-op using the Visual Analog Scale (VAS), the Achilles Tendon Total Rupture Score (ATRS), and EFAS score. Results All patients returned to their pre-injury functional levels at 2 years, with the ability to stand in single-leg support on the operated limb. At 2 years, the average scores were: VAS score 1.4, ATRS score 89.8, and EFAS score 20,4 / 12.0 sport. No surgical complications or re-ruptures were recorded. Conclusions Isolated endoscopic FHL transfer appears to be a viable alternative for acute Achilles tendon injuries, particularly in atypical ruptures that compromise direct repair quality. Further extended follow-up and larger case series are required for scientific validation.

#43153 : Epidemiological study of patients with diabetic foot

Preferred format : a podium presentation

Authors:

Fernando Viamont Guerra (1), Marco Tulio Costa (1), Thomas Yiu Teh Lee (1), Edward Patrick Sinibaldi Eagers (1), Marcelo Marcucci Chakkour (1), Noé De Marchi Neto (1), Jordanna Maria Pereira Bergamasco (1)

1. Departamento de Ortopedia e Traumatologia, Santa Casa de Misericórdia de São Paulo, Sao Paulo, Brazil

Keywords: Diabetic foot; Epidemiology; Complications.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Objective: Describe the epidemiological profile of patients with diabetic foot registered and followed in an orthopedic outpatient clinic. Methods: A retrospective study was conducted, analyzing the medical records of 500 patients. The reason for the initial consultation, age, smoking, alcoholism, body mass index, sex, type of diabetes, and need and type of surgery were analyzed. Results: The reason for the initial consultation was foot ulcer in 198 patients (39.6%), followed by infection in 122 (24.4%). One hundred and twenty patients (24%) had Charcot arthropathy and 60 (12%) diabetic neuropathy. Most patients were male (67.2%), and the mean age was 65 years, with almost 70% over 50 years in initial care. The mean body mass index was 26.11. Most patients reported being non-smokers (81.4%) and non-alcoholics (85.2%). Type II diabetes predominated (94.4%). Amputations were performed in 306 patients (81.4%) at some point during outpatient follow-up, being classified as minor in 182 patients (59.5%) and major in 124 (40.5%). Conclusion: Most patients at the diabetic foot outpatient clinic are men aged over 50 years, non-smokers and non-alcoholics, and with a slightly high body mass index of 26.1. They have already attended the outpatient clinic with foot complications and suffered some level of foot amputation.

#43155 : Ligamentous Ankle Lesions in Relation to the Morphometrics of the Incisura Fibularis: A Systematic Review

Preferred format : a podium presentation

Authors:

Louise Wittouck (1), Ruben Vermeir (1), Matthias Peiffer (2), Wouter Huysse (2), Nicolo Martinelli (3), Kris Buedts (4), Emmanuel Audenaert (2), Arne Burssens (2)

1. Department of Orthopaedics, UZ Gent, Gent, Belgium
2. Orthopaedics and Traumatology, University hospital of Ghent, Gent, Belgium
3. Department of Orthopaedics, Galeazzi Institute, Milan, Italy
4. Orthopaedics and Traumatology, ZNA Middelheim, Antwerpen, Belgium

Keywords: Ankle Instability, Ankle Syndesmosis, Morphometrics

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background: The incisura fibularis (IF) provides intrinsic stability to the ankle joint complex by interlocking the distal tibia and fibula, but the role in ankle injuries is unclear. Therefore, we systematically reviewed all literature focused on the relation between ligamentous ankle lesions and IF morphometrics. Methods: A systematic literature search was conducted according to the PRISMA guidelines and registered on PROSPERO (CRD42021282862). In general, search terms were related to ankle and syndesmosis trauma/instability in combination with anatomical morphometrics of the incisura fibularis. Studies categorizable as original research (RCT or observational) were included. Studies concerning degenerative ankle disease and cadavers were excluded. The Hawker instrument was used to assess the methodological quality. Results: Sixteen studies were confirmed eligible and consisted of a prospective cohort (n=1), retrospective comparative (n=10), and observational (n=5) study design.Several studies (n=5) identified a correlation between a shallow IF depth and a higher incidence of ankle injury. A significant difference has also been found concerning the incisura height and angle (n=3): a shorter incisura and more obtuse angle have been noted in patients with ankle sprains. The mean Hawker score of the included studies was 28 out of 36 (range=24-31). Conclusion: The majority of the identified studies found distinct morphometrics of the IF in association with ligamentous ankle lesions. However, a substantial number of studies could not identify a clear association and presented a heterogeneous methodological quality. Therefore, further prospective studies are warranted to assess the relation between the incisura morphometrics and ligamentous disorders of the ankle joint.

#43156 : Comparative study between plate vs percutaneous screws for reduction and fixation in posterior malleous fractures

Preferred format : an ePoster Displayed

Authors:

Ana Gonzalez Jimenez (1), Irene Portellano Pascual (2), Maria Carreño Felices (3)

1. Unidad de Pie y Tobillo, Hospital central de la Defensa Gomez Ulla, madrid, Spain
2. Unidad de Pie y Tobillo, Hospital central de la Defensa Gomez Ulla, Madrid, Spain
3. Unidad de Pie y Tobillo MIR, Hospital central de la Defensa Gomez Ulla , madrid, Spain

Keywords: malleous fractures, screws, syndesmosis, buttres plate, posterolateral approach.

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Posterior malleolar fractures are about 7 to 44% off all ankle fractures. The Bartonicek/Rammelt clasification has changed the traditional indications of fixation of this fractures. This classification helps to understand the importance of anatomical reduction of posterior malleolar fractures and its intimate relationship with one of the main stabilizers of the syndesmosis , the posterior-inferior tibiofibular ligament . For this reason, foot and ankle surgeons focus more attention on the correct reduction of the fibular notch and tibiotalar syndesmosis , changing the previous indications that included size of the posterior fragment and the displacement of articular surface .Surgical options for managing these fractures include percutaneous fixation with screws or posterolateral approach using a buttress plate. The aim of our study was to compare the clinical and radiological results between both types of fixation . Secondary, to compare the incidence of complications in fractures treated with screws vs butress plate. A retrospective cohort study was designed with patients operated in our center between 2020 and 2023 (n= 41), dividing them in two groups, one treated by open reduction and plate fixation (n= 18) and other with percutaneos screws (n=23). The clinical results were similar in both groups. The radiological results were superior in the plate fixation group. The incidence of complications , including poor reduction, was higher in the screw synthesis group.

#43157 : Endoscopic Flexor Hallucis Longus Transfer for Atypical Acute Achilles Tendon Rupture: A Small Case Series

Preferred format : a podium presentation

Authors:

Francisco Aguilar Baptista (1), António Mendes Serrano (2), Sara Rodrigues (3), Rita Alçada (1), João Caldas Caetano (1, 4), Miguel Pádua Figueiredo (1, 5), Nuno Côrte-Real (1)

1. Serviço de Ortopedia, Hospital de Cascais - Dr. José de Almeida, Alcabideche, Portugal
2. Serviço de Ortopedia - HSFX, Unidade Local de Saúde Lisboa Ocidental, Lisbon, Portugal
3. Serviço de Ortopedia, Hospital de Cascais - Dr. José de Almeida, Lisbon, Portugal
4. UCMA Lisboa, Fidelidade – Companhia de Seguros, S.A., Lisbon, Portugal
5. Ortopedia, Hospital CUF Tejo, Lisboa, Portugal

Keywords: Flexor Hallucis Longus Transfer, Achilles Tendon Rupture, Endoscopy, Tendinopathy, Chronic Rupture

Your abstract (DO NOT add the title, list of authors or keywords in this field)

Background The optimal surgical treatment for acute Achilles tendon ruptures remains controversial. Minimally invasive methods are often preferred over open methods for their advantages. However, while surgical methods ensure the restoration of Achilles tendon length, the tendon's quality can be unreliable when directly repaired, especially with prior tendinopathy increasing the risk of repair failure. Objectives This study presents the isolated endoscopic transfer of the Flexor Hallucis Longus (FHL), typically used for chronic ruptures, as an alternative for direct repair of acute Achilles tendon ruptures. Methodology We analyzed six patients, median age 35 years [19-53], with acute Achilles tendon ruptures presenting atypically: 2 insertional ruptures, 2 mid-substance ruptures with prior tendinopathy, 1 segmental rupture, and 1 proximal third rupture. Each patient underwent isolated FHL endoscopic transfer. Pain and functionality were assessed at 6 months and 2 years post-op using the Visual Analog Scale (VAS), the Achilles Tendon Total Rupture Score (ATRS), and EFAS score. Results All patients returned to their pre-injury functional levels at 2 years, with the ability to stand in single-leg support on the operated limb. At 2 years, the average scores were: VAS score 1.8, ATRS score 89.8, and EFAS score 20,4 / 12.0 sport. No surgical complications or re-ruptures were recorded. Conclusions Isolated endoscopic FHL transfer appears to be a viable alternative for acute Achilles tendon injuries, particularly in atypical ruptures that compromise direct repair quality. Further extended follow-up and larger case series are required for scientific validation.

#43159 : Arthroereisis for Adult Flexible Flatfoot: Retrospective Radiological Evaluation After Endorthesis Removal

Preferred format : a podium presentation OR a poster presentation

Authors:

ramiro vera salas (1, 2), Hugo Henriquez Sazo (3, 2), Leonardo Lagos Sepulveda (1), Fernando Vargas Gallardo (1), sergio fernandez comber (1), Felipe Pino Enriquez (1), Christian Bastias Soto (1)

1. Foot and Ankle departament, Clinica Santa Maria, santiago, Chile
2. Foot and Ankle departament, Instituto Traumatologico de Santiago, santiago, Chile
3. Foot and Ankle departament, Clinica Santa Maria, Santiago, Chile

Keywords: Flatfoot, Arthroereisis,

Your abstract (DO NOT add the title, list of authors or keywords in this field)

OBJECTIVE: To evaluate radiological parameters on weight-bearing AP and lateral foot X-rays post endorthesis removal. METHODS: This retrospective radiological evaluation included flexible flatfeet subjected to endorthesis removal between 2020 and 2023. Inclusion criteria were weight-bearing AP and lateral foot X-rays with and without endorthesis, with at least 6 months of the device in situ. Parameters assessed included the Costa-Bertani angle, Meary's angle, lateral calcaneal-plantar angle, talar declination angle, talonavicular coverage angle, talonavicular incongruence angle, anterior talocalcaneal angle, and cuneiform–fifth metatarsal distance. Measurements were performed by a musculoskeletal radiologist. RESULTS: Evaluation covered 75 arthroereises with endorthesis in 51 patients, with 12 cases (16%) necessitating removal, primarily due to sinus tarsi pain. Eight cases met inclusion criteria. Removed devices included 2 Bioarch and 6 Pit Stop endortheses. None of the evaluated angles remained unchanged post-removal. Meary's angle showed the most significant change, shifting from normal to abnormal in 37.5% of cases. The cuneiform–fifth metatarsal distance remained normal in 100% of cases. The median size of the removed devices was 12 (range 10-14). The average duration of device use was 14.7 months (range 6-33 months). The average time from removal surgery to radiographic evaluation was 11.5 months (range 2-30 months). CONCLUSIONS: The removal of endorthesis in adults with flexible flatfoot did not consistently maintain the angular corrections achieved with the subtalar device, according to the radiological measurements studied.