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Combined meeting with the Serbian Orthopaedic Trauma Association

ABSTRACT BOOK

Just-A-Minute Papers

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"Comparative Analysis of Clinical, Radiological, and Functional Outcomes: Supra-patellar vs. Infra-patellar Techniques of Tibial Nailing in the Indian Population - A Prospective, Randomized Controlled Trial"

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JAM Session 1, SICOT Lounge, September 25, 2024, 10:00 - 10:30

Introduction: Tibial shaft fractures commonly occur because of high-velocity trauma. Considerable debate exists over the optimal approach for nailing tibial shaft fractures. We aimed to compare the clinical, radiological and functional outcomes and intra-operative fluoroscopy time, total blood loss and operative time between Supra-patellar and Infra-patellar techniques in the treatment of extra-articular tibial shaft fractures. Methods: Patients between 18-45 years presenting to our Level I trauma-centre with AO/OTA type 42 fractures were randomized into Suprapatellar and Infrapatellar groups. Severity of knee pain (VAS) and knee range of motion were documented at 2 weeks, 6 weeks, 3 months and 6 months follow-up. Functional outcomes were measured using Knee Society Score, Lysholm Knee Score, KOOS-PF score and radiological union assessed with radiographs done at 6 weeks, 3 months and 6 months post-operatively.Results: Thirty patients underwent nailing by suprapatellar approach and 30 by infrapatellar approach. A significant difference (p-value 0.003) was noted in the operative time which was shorter in the suprapatellar compared to the infrapatellar group. The suprapatellar group had a significantly lower mean intra-operative blood loss compared to the latter (p-value 0.027). There was no difference between the two groups in terms of pain or range of motion. The mean functional scores were higher in the suprapatellar group at all time points of follow-up though this difference was not significant. Conclusion: Suprapatellar nailing of tibial shaft fractures may help reduce operative time and intra-operative blood loss with similar intra-operative radiation exposure, clinical and functional outcomes compared to infrapatellar nailing.

A rare cause of soft tissue infection - a case study.

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JAM Session 1, SICOT Lounge, September 25, 2024, 10:00 - 10:30

Introduction: Hand soft tissue infections are common in manual workers, with most of these entities comprising common skin bacterial agents. Frequently these infection cases have a benign course and are successfully treated with oral antibiotics. Mycobacterium agents are extremely rare causes of soft tissue infections and can lead to self-limiting, ulcerative, and granulomatous skin lesions, particularly when there is direct risk exposure. We present the clinical case of a 39-year-old woman with pain, warmth, and redness in the second finger of her right hand, one month after a traumatic injury at work. Initial evaluation revealed swelling with inflammatory signs and fluctuation at the medial phalanx. Spontaneous drainage appeared purulent. Oral antibiotic treatment was instituted, with no signs of clinical improvement. As such, surgical lavage and debridement was performed. Microbiological cultures were negative and after a period of antibiotic treatment, clinical resolution was not achieved. Further investigation revealed occupational exposure to aquariums as the patient worked in a pet shop. Mycobacterial infection was suspected and as such Molecular and targeted cultural analyses identified Mycobacterium Marinum infection in the wound samples. Treatment with clarithromycin, rifampicin, and ethambutol led to documented healing within a month OF follow-up with full disease resolution at 3 months of follow-up.
Conclusion: The identification of M. Marinum infection requires a high degree of suspicion due to its rarity. This case also illustrates the importance of a thorough exposure hazard clinical history in difficult-to-treat soft-tissue infections in order to diagnose and treat rare pathological agents.

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Minimally invasive CT guided percutaneous microwave and cryoablation as a treatment option for bone metastases

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JAM Session 1, SICOT Lounge, September 25, 2024, 10:00 - 10:30

CT-guided, minimally invasive, percutaneous thermal ablation of oligometastatic disease in the bones has unique advantages compared with surgery or radiation therapy. Thermal ablation, including cryoablation and microwave ablation of osseous lesions can result in significant pain palliation, prevention of skeletal-related events, and durable local tumor control. This treatment option has become increasingly integrated into interventional oncology over the past several years.
Indications for thermal ablation include treatment of painful metastases refractory or unsuitable to conventional therapies, local control of limited metastatic disease and prevention of critical skeletal events.
Osseous metastases are ablated for pain palliation and/or local tumor control when there is persistent pain or imaging tumor progression despite maximum radiation therapy, radiation therapy is contraindicated, or there is inadequate response to systemic therapies and analgesics,
Combination of radiation therapy and thermal ablation is also considered for radiation-insensitive tumors. Cementation may be performed following thermal ablation for added pain relief or pathologic fracture prevention/stabilization.
We report retrospectively our experience on safety, pain relief and local tumor control achieved with percutaneous MWA and cryoablation of bone metastases in 21 patients at our center from 2019 to 2023. Five patients were treated with palliative and 16 with curative intent. Mean tumor diameter was 24 mm (range 11-92mm). External radiation therapy had been performed on four metastases prior to ablation. There was no major complications, and 4 minor complications.
Percutaneous ablation of bone metastases is safe and results in significant long lasting pain relief and good local tumor control in selected patients.

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The functional outcomes of hand phalanx fractures treated by pinning

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JAM Session 1, SICOT Lounge, September 25, 2024, 10:00 - 10:30

Introduction:
Phalanx fractures are very common, often neglected and considered minor injuries by patients, they can be responsible for joint stiffness impairing finger function, their treatment depends on the degree of instability and associated injuries. The objective of our study is to evaluate the functional outcomes of hand phalanx fractures treated by pinning.

Materials and Methods:
A retrospective study over a period of 3 years of cases collected including 54 patients. An average age of 26 years with male predominance, with an average follow-up of 18 months. Evaluation included total active motion (TAM) after pin removal.

Results:
Open fracture of the P1 of the 5th finger is the most frequent in our series. All our patients were operated under locoregional anesthesia, based on pinning (Kirschner wires), with repair of associated injuries. Most of our patients started rehabilitation at 3 weeks postoperatively, pin removal was done at 6 weeks. Evaluation of patients after rehabilitation sessions found good recovery of hand function in 65% with their return to work. Complications found: stiffness first, followed by infection and delayed union.

Discussion:
Phalanx fractures are considered unstable, and there is no therapeutic consensus for non-displaced fractures, regardless of the chosen therapeutic method, early mobilization of all digital joints is indicated. Pinning offers remarkable stability, compatible with rapid rehabilitation.

Conclusion:
Pinning is a simple and economical technique, providing satisfactory stability for displaced phalanx fractures, allowing the patient to start early rehabilitation with satisfactory clinical outcomes.

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Assessment of bone resorption progress of stress shielding and radiographic loosening after press-fit radial head arthroplasty: A comparative study

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JAM Session 1, SICOT Lounge, September 25, 2024, 10:00 - 10:30

Purpose: Stress shielding in press-fit radial head arthroplasty (RHA) often leads to bone resorption around the proximal radial neck. Radiographic loosening, defined by >2mm radiolucency in "Gruen" zones, indicates potential loosening. This study compares bone resorption characteristics in stress shielding with and without radiographic loosening. Methods: Sixteen patients who underwent anatomical press-fit radial head arthroplasty (RHA) were included in the analysis. Radiographs were conducted postoperatively and at intervals of one, six, and nine weeks, as well as three, six, nine, 12, and 24 months. The extent and distribution of bone resorption around the proximal radial neck and stem were measured in two groups: Group A (with radiographic loosening) and Group B (without signs of loosening). Results: Follow-up averaged 20 months (12-36). Stress shielding occurred in 85.7% (n = 7) of Group A and 100% (n = 9) of Group B. A significant difference in mean proximal radial neck resorption (PRNR) was observed between Group A and B ($P < 0.05$). Group A had a final mean PRNR of 1.78 mm (SD 2.6), while Group B had 5.23 mm (SD 2.1). Moderate PRNR (>3mm) in Group B started after a mean of 5.3 months (SD 2.2). In Group A, the degree of PRNR in any area of each observation subject during the entire follow-up period was always less than 3 mm and failed to reach a moderate level. Conclusion: Delayed and lower degree PRNR correlates with a higher risk of radiographic loosening in RHA.

Reconstructing the Lateral Epicondyle and Lateral Collateral Ligament Complex Using an Iliac Bone Graft with Iliotibial Tract in Wind Swept Elbow: A Case Report

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[Background] Wind swept elbow is a sweeping injury that causes marked elbow instability due to loss of a medial or lateral epicondyle and collateral ligaments. Reconstruction of medial or lateral collateral ligaments is challenging due to loss of the isometric attachment point. We report a case of lateral type of wind swept elbow treated with a unique surgical technique to restore joint stability using a bone tendon autograft. [Case] A 38-year-old woman had a traffic accident and had a lateral type of wind swept elbow. She was transferred to our hospital for reconstruction on day 3. The day after transfer, debridement and evaluation revealed defects of lateral epicondyle, 2/3 of capitellum, 2/5 of radial head, proximal lateral ulnar cortex, LCL complex and soft tissue around the elbow. Varus instability and posterolateral instability (PLRI) were also observed. One week after transfer, the capitellum and LCL complex reconstruction was performed using iliac bone grafting with the iliotibial band, and the soft tissue defect was reconstructed with a pedicled forearm radial flap. Six months after the surgery, the range of motion was relatively maintained -35° in extension and 120° in flexion, and there was no varus/valgus instability or PLRI. [Discussion] When reconstructing the lateral collateral ligament complex for PLRI, it is important to reconstruct the LUCL at the isometric point. This is the first report of reconstruction of LCL complex including LUCL in wind swept elbow with bone tendon autograft. The short-term result was good, suggesting that it is highly useful.

Daphnetin improves flap survival by alleviating ferroptosis through SIRT1/Nrf2 pathway

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JAM Session 1, SICOT Lounge, September 25, 2024, 10:00 - 10:30

Random skin flaps are commonly used to repair skin damage.Nevertheless,ischemic and hypoxic necrosis limits their wider clinical application.Daphnetin,7,8-dithydroxycoumarin,extracted from from the traditional Chinese medicine Zushi Ma,was reported to have vasodilation and anti-inflammation outcomes.Our study was performed to assess the effect of Daphnetin on flap survival.

Twenty-four male SD rats with a modified McFarland flap were randomly divided into four groups:control (solvent 10% DMSO + 90% corn oil), low-dose Dap (20 mg/kg), middle-dose Dap(40 mg/kg) and high-dose Dap (60 mg/kg).All rats were treated once a day.Seven days after the surgery, the range of necrosis was calculated.The activity of superoxide dismutase (SOD) and the level of malondialdehyde (MDA) were measured. H&E staining was performed to assess the histopathological changes in skin flaps, and the levels of microvascular density (MVD) were determined. Laser Doppler Flowmetry was used to evaluate microcirculation blood flow.Western blot was used to measure the expression levels of vascular endothelial growth factor (VEGF), recombinant sirtuin 1 (SIRT1), nuclear factor erythroid-2-related factor 2(Nrf2),NADH dehydrogenase quinone 1(NQO1) and heme oxygenase 1 (HO1).And expression levels of recombinant NLR family pyrin domain containing protein 3 (NLRP3),tumor necrosis factor-α(TNF-α), interleukin-6(IL-6), interlukin-1β(IL-1β)were evaluated by immunofluorescence.

Consequently,daphnetin increased the flap survival area,reduced the level of MDA and improved SOD activity.With increasing expressions of SIRT1,Nrf2,NQO1,HO1 , daphnetin alleviated ferroptosis through SIRT1/Nrf2 pathway.VEGF expression was increased and levels of TNF-α, IL-6,IL-1β decreased.Daphnetin enhanced angiogenesis and relieved inflammation.These changes were more pronounced in the Dap-H group. Our findings indicate that Daphnetin significantly improves skin flap survival.

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Evaluation of efficacy of alpha-defensin lateral flow test (Synovasure) for diagnosis of knee PJI.

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Introduction: Prosthetic joint infection (PJI) is one of the most challenging complications of knee replacement surgery. Synovaure lateral flow test was developed as a rapid test for the detection or exclusion of PJI by detecting alpha-defensin in synovial fluid. Alpha-defensin is an antimicrobial peptide that is secreted by human neutrophils in response to pathogenic presence. Methods: A retrospective study included 63 patients with symptomatic knee arthroplasty with no clinical signs of acute infection. Aspiration is done in theatre under complete sterile conditions, with one sample for Synovasure test and another sample for culture and sensitivity. Results: Patients had a male-to-female ratio of 1.03 (32 males to 31 females) with a mean age 69 years; 52 to 87). Two patients (3.1%) had positive synovasure tests with only one of them had a positive culture. 59 patients (93.6%) had negative synovasure tests, and three of them had positive cultures. Two samples were blood-stained (unsuitable for synovasure), and one of them had a positive culture. The synovasure test achieved a sensitivity of 25% and a specificity of 98.2%. The positive predictive value (PPV) was 50%, and the negative predictive value (NPV) was 94.9%. Conclusion: Synovasure is a good negative test with low sensitivity, which makes the test not reliable enough to confirm the positive results. Given the big consequences and the high cost of the missed diagnosis of PJI before revision, continuation of the culture and sensitivity tests, along with Synovasure test to rule out PJI is recommended.

Novel surgical technique for the treatment of spondylolysis and low grade spondylolisthesis using custom-made 3d-printed implants

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Objective: To present a new method of surgical treatment for spondylosis and low-grade spondylolisthesis, using personalized 3D-printed titanium implants.
Materials and Methods: 18 patients with symptomatic L5 spondylosis underwent surgical treatment, including 13 with Grade I spondylolisthesis. The mean age of the patients was 15.4 years.
Based on these CT examination data, a custom titanium implant was printed using 3D printing technology.
Standard pedicle screws were inserted in L5 vertebra. Then personalized implant were installed on L5 lamina and screws. After tightening the nuts pars integrity were restored. If there was anterior displacement of the L5 body, the implant was designed to reduce slippage. The supraspinatus ligament were preserved in all cases.
Results: The mean follow-up time was 12.8 months. All patients recovered to their initial sports activities. Preop the Pediatric Quality of Life (PedsQL) measure results were 73.1 ± 9.4; 3 months postop. - 87.7 ± 8.1 and 6 months F-Up - 89.6 ± 6.4. Back pain, as measured by the Visual Analog Scale (VAS), preop was 6.3 ± 2.7; 3 months after surgery - 3.3 ± 0.9; and 6 months postop. - 2.6 ± 0.4. Functional X-rays and CT scans demonstrated maintaining the range of motion at the L5-S1 level and stability of the pars fixation.
Conclusion: This study demonstrates that personalized 3D printed implants can be used effectively in the treatment of spondylosis and low-grade spondylolisthesis, even in cases with pronounced dysplastic changes of the lamina, providing relief from pain and restoring function.

HOA-PRO: A New Instrument to Measure Patient-Reported Outcomes in Hip Osteoarthritis

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Introduction: hip osteoarthritis (HOA) is a major cause of severe pain, limited mobility and disability resulting in a significant reduction in quality of life (QoL). Intestinal health (IH) and nutrition may have impact on the severity of HOA and patient's QoL. Patient-reported outcome (PRO) measures are promising tools for the evaluation of the burden of illness and treatment outcomes. There are a number of PRO measures for HOA but none of them covers areas related with IH and nutrition.

Purpose: we aimed to develop a new questionnaire in accordance with COSMIN Guidelines.

Material and methods: development of HOA-PRO consisted of several consecutive stages under coordination by the Study Expert Committee (SEC). The concept of HOA-PRO and item selection was based on literature review (2010-2023). Item selection resulted in a list of 104 items categorized into 5 domains: pain, function, psychosocial well-being, IH and nutrition. The domains and items were reviewed by the experts (n=15) to test content validity of the items and to generate additional items. Then 30 HOA patients were interviewed for clarity, usefulness and applicability of the items with further item reduction and additional items generation. Respondents' preferences for mode of administration were analyzed, length of the questionnaire, wording and the response scale for HOA-PRO were reviewed by the SEC.

Results: the prototype of HOA-PRO consisting of 66 items was created and tested in the group of 100 patients. The HOA-PRO is the first specific instrument to measure PROs in HOA with the focus to IH and nutrition.

Conventional versus navigation guided periacetabular osteotomy for hip dysplasia in inexperienced surgeon.

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JAM Session 2, SICOT Lounge, September 25, 2024, 16:00 - 16:30

Purpose: Periacetabular osteotomy (PAO) is a difficult surgery, and mastering the surgical technique is challenging for hip surgeons. The use of navigation systems may allow inexperienced surgeons to achieve safe and accurate PAO. The purpose of this study was to evaluate the clinical outcomes of conventional and navigation guided PAO in inexperienced surgeons.
Methods: This study included 77 joints (8 men and 69 women with average 35.1 years) in which performed PAO by inexperienced surgeons (less than 30 PAO surgeries) for hip dysplasia between April 2016 and December 2022. The study group was divided to conventional group (37 joints; PAO using conventional method) and navigation group (40 joints; PAO using CT-based navigation system). Demographics, functional outcomes, complication rate, and radiographic parameters were compared between the groups.
Results: Age, sex and body mass index were not significant differences between the groups. There was no significant difference in the preoperative and final Harris hip score between the two groups. Complications were observed in 10 joints in the conventional group (27%) and in 5 joints in the navigation group (13%). Postoperative lateral center edge angle and acetabular head index were significantly greater in the navigation group compare to conventional group. Conversion to total hip arthroplasty were two of the 37 PAO hips (5.4%) in the conventional group and none of 40 hips (0%) in the navigation group.
Conclusion: This study demonstrated that inexperienced surgeons can perform safe and accurate surgery, reducing complications and achieving favorable acetabular coverage by PAO using navigation systems.

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A case of osteomyelitis by an unusual pathogen

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Introduction: Actinomyces neuii is a rare pathogen that has only recently been described and is predominantly associated with soft tissue infections. The following is a noteworthy case since, to our knowledge, only very few other diagnosis of bone infection by this rod have been reported.

Results: A 48-year-old female patient from São Tomé with chronic kidney disease (CKD) was referred to our consultation with inflammatory signs in the hind and midfoot; the previous year she had a history of trauma to the foot after stepping on a rusty nail. Clinically, there was generalized swelling and tenderness of the foot. Laboratory findings were negative and imaging showed signs of extensive osteomyelitis of multiple bones. A. neuii was isolated in a bone biopsy of the calcaneum. The patient is currently following a regimen with ampicillin.

Discussion/Conclusion: Considering our patient's diagnosis of CKD, the clinical findings and a known traumatic injury, the diagnosis of a chronic contiguous osteomyelitis must be considered. Only a few cases of osteomyelitis caused by A. neuii have been reported: this pathogen is probably underreported due to poor detection techniques and misinterpretation as a contaminant. As in previous reports, the isolate was susceptible to beta-lactams; the regimen's optimal duration is still controversial. As of now, she has been stable and responding to treatment.
Osteomyelitis due to Actinomyces neuii is a rare entity difficult to diagnose and it should be correctly identified as soon as possible to allow for appropriate therapy.

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A Comparison of Clinical Outcomes among Undenatured Collagen Type II, Glucosamine Sulfate, and Diacerein in Osteoarthritic Knee Treatment

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JAM Session 2, SICOT Lounge, September 25, 2024, 16:00 - 16:30

Introduction: Knee supplementation is widely used for knee osteoarthritis (OA). However, its efficacy remains uncertain. This study aims to compare the efficacy of supplement treatments, including glucosamine sulfate, diacerein, undenatured collagen type II (UC-II), and placebo, in improving functional and radiographic outcomes. Methods: A four-arm, randomized, double-blinded, placebo-controlled trial was conducted using 216 participants with mild to moderate knee OA. Participants were randomly assigned to one of four treatment groups, including placebo, glucosamine sulfate, diacerein, or UC-II, over a period of 24 weeks. Baseline characteristics, physical performance, and Western Ontario and McMaster Universities Arthritis Index (WOMAC) scores were recorded. The primary outcome, WOMAC scores, alongside secondary outcomes, including the Numerical Pain Rating Scale (NPRS), additional analgesic use, joint space width (JSW), and complications, were compared at 12 and 24 weeks. Physical performance tests (6-minute walk test and timed up-and-go test) were compared at 24 weeks. Moreover, all measurements were performed at 36 weeks to assess the carry-over effect of the study medication. Results: No significant differences were found among the four treatment groups in both primary and secondary outcomes at 12, 24, and 36 weeks. In addition, repeated measurement and time interaction analysis showed no statistically significant differences among the treatment groups in terms of knee function, pain control, physical performance, and complications. Conclusions: The administration of glucosamine sulfate, diacerein, and UC-II did not significantly improve the WOMAC score at 12, 24, and 36 weeks when compared to placebo in mild to moderate knee OA.

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Tuberculosis of the pubic symphysis : a case report

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JAM Session 2, SICOT Lounge, September 25, 2024, 16:00 - 16:30

Introduction : Osseous tuberculosis is a rare form of extrapulmonary tuberculosis, and isolated localization at the pubic symphysis is particularly uncommon. Atypical clinical presentation can contribute to delayed diagnosis and the risk of serious complications. Case report : We report the case of a 36-year-old patient who presented with gait disturbances and pain in the pubic region, radiating to the right inguinal fold. A fistulous collection was present on the medial aspect of the root of the right thigh, producing pus. Pelvic radiographs, supplemented by a CT scan, showed destructive osteoarthropathy of the pubic symphysis. Microbiological tests did not isolate any microorganisms. Tuberculosis of the pubic symphysis was made after biopsy and histological examination, revealing a caseating granuloma surrounded by epithelioid cells. The patient underwent antitubercular treatment for 9 months. Following this treatment, clinical improvements were noted, and no recurrence was observed during the 2-year follow-up period. Conclusion : In summary, early detection of cases upon presentation is facilitated by increased awareness of the disease. Early diagnosis and intervention play a crucial role in effective treatment, ultimately contributing to a reduction in morbidity and prevention of deformities.

Navigating Treatment Options For Trapeziometacarpal Osteoarthritis: A Comprehensive Case Study And Treatment Discussion

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JAM Session 2, SICOT Lounge, September 25, 2024, 16:00 - 16:30

Introduction: The overarching objective in treating osteoarthritis of the first carpometacarpal (CMC 1) is to alleviate pain, enhance thumb motion, and establish joint stability. Case Presentation: a 51-year-old man with a previous history of an isolated trapeziometacarpal joint dislocation presented at our institution reporting significant pain and instability at the base of the thumb. X-rays revealed trapeziometacarpal joint space narrowing (Eaton-Littler II). The patient underwent trapeziometacarpal prosthetic arthroplasty. At 6 weeks postoperative, he was pain-free while retaining mobility and reporting a stable pinch. Discussion: The absence of a consensus on the superior treatment for CMC 1 joint osteoarthritis has frequently led to decisions guided by surgeon preference. Arthroscopy debridement and extension osteotomy are reserved for the early stages. LRTI is the most frequently performed procedure, however, a notable complication is the potential for loss of length and stability. Arthrodesis offers effective pain relief, and stability, and preserves length, allowing to maintain grip strength. Historically, JR was associated with a high complication rate, attributable to past design flaws. However, in a recent meta-analysis, JR emerged as yielding superior functional outcomes to LRTI. Given that the primary concern for our patient was achieving a pain-free state while maintaining range of motion, and considering that grip strength was not a critical requirement for his job, he made the informed decision to proceed with arthroplasty. JR is likely to persist as a viable treatment option for patients, but additional research is needed before it can be regarded as the gold standard.

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Intraoperative fluoroscopy time and operation time in pertrochanteric fractures internal fixation by Gamma Nail and Selfdynamizable Internal Fixator

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Introduction: There are specific differences between intramedullary and extramedullary fixation of pertrochanteric fractures, influencing operation time and intraoperative fluoroscopy time. Material and methods: A comparative analysis regarding operation time and intraoperative fluoroscopy time had been performed under the series of 79 consecutive patients who were treated surgically for pertrochanteric fracture – the group treated by Selfdynamizable Internal Fixator – SIF (group A) and the other group treated by Gamma Nail (group B). Results: Average operation time were 60,9 min (group 1, and 57,7 min in group 2. Average intraoperative fluoroscopy time were 35,8 s (group A) and 81,1 s (group B). Operation time was not statistically significant between the groups ($p>0,05$). Intraoperative fluoroscopy time was significantly lower in the group A ($p<0,05$). Conclusion: Pertrochanteric fractures internal fixation is expected to be followed by a similar operation time between Selfdynamizable Internal Fixator and Gamma Nail technique, but intraoperative fluoroscopy time is expected to be significantly different. Factors influencing operation and fluoroscopy time in internal fixation of pertrochanteric fractures could be considered the number of operative technique steps, the average need for repeating some steps and the number of sliding screws.

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Deltoid Arc and Thickness: Can They Predict Clinical Outcomes of Reverse Shoulder Arthroplasties?

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JAM Session 2, SICOT Lounge, September 25, 2024, 16:00 - 16:30

Introduction: There is limited research on the correlation of deltoid arc length and thickness on magnetic resonance imaging (MRI) with clinical outcomes. Methods: A retrospective review of prospectively collected data was performed in a tertiary institution in Singapore. Patients who had undergone a reverse shoulder arthroplasty (RSA) from 2011 to 2021 were included. Pre- and post-operative radiographic measurements of deltoid wrap arc anteriorly and posteriorly, as well as thickness at 45-degree intervals were taken. These were correlated with forward flexion and abduction range of motion (ROM) and clinical scores pre-operatively and at 3, 6 months, and 1 year post-operatively. A statistical significance of $p<0.05$ was taken. Results: Forty-five cases from forty-one patients were included. Taking reference from the glenoid edge, the deltoid arc ranges at an average of 21.5˚ anteriorly to 142˚ posteriorly. The deltoid thickness is greatest 45˚ from the anterior at an average of 17.4mm. At 6 months, the Constant and UCLA scores improved from a mean of 32.1 to 51.1 ($p=0.007$) and 13.3 to 23.9 ($p=0.004$) respectively, with improvement continuing at the 2 year mark. The thickness of the deltoid at this 45˚ point was correlated with greater flexion and abduction ROM at the 6 month mark ($\rho=0.371$, $p=0.037$ and $\rho=0.431$, $p=0.014$ respectively). Conclusion: Patients who undergo RSA with a greater deltoid thickness, especially at 45˚ from the anterior, are associated with better forward flexion and abduction ROM, as well as improved functional outcomes 6 months post-operatively. There may be value in prehabilitation in such patients.

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Short-Term and Medium-Term of functional and Radiographic Results Following Subtalar Arthroereisis for Symptomatic Flexible Flatfoot

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JAM Session 2, SICOT Lounge, September 25, 2024, 16:00 - 16:30

Introduction:
Flexible flatfoot (FFF) is a common skeletal disorder in children, often requiring surgical intervention for symptomatic cases resistant to conservative treatment. Subtalar arthroereisis, involving various implants to limit excessive subtalar joint eversion, has emerged as a viable surgical option. Recent advancements, such as self-locking cone-shaped screws, aim to prevent implant extrusion and improve outcomes.
Methods:
In a retrospective study spanning August 2012 to December 2023, we evaluated the effectiveness of subtalar arthroereisis using the Talar-Fit implant in 256 patients with flexible flatfoot, encompassing 493 feet. Clinical assessment employed the American Orthopaedic Foot and Ankle Society (AOFAS) hindfoot scale and visual analog scale (VAS), while radiographic evaluation included multiple parameters.
Results:
The study focused on patients averaging 17.7 years in age, 151.5 cm in height, and 44.5 kg in weight. Initial AOFAS scores improved significantly from 50±7.2 to 71±6.5 at the last follow-up, accompanied by a decrease in VAS scores from 6.1±1.2 to 3.5±0.9. Radiographically, notable reductions were observed in Meary's angle (9.1°±4.3° to 3.3°±1.0°) and talocalcaneal angle (45.9°±7.7° to 37.1°±7.1°). Complications, including sinus tarsi pain (19.2%) and implant extrusion (5.5%), were managed successfully without additional adverse events.
Conclusion:
Subtalar arthroereisis using subtalar implants demonstrates favorable clinical and radiographic outcomes for flexible flatfoot correction. Complications, primarily sinus tarsi pain, were effectively addressed through implant removal, while implant extrusion remained infrequent. This procedure consistently yields stable improvements in both clinical symptoms and radiographic parameters. However, further understanding of complications' contributing factors is crucial for refining surgical techniques and optimizing patient outcomes.

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The Effect of Preoperative Duration of Symptoms on Outcomes of Cervical Spondylotic Radiculopathy After Cervical Disc Arthroplasty

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JAM Session 2, SICOT Lounge, September 25, 2024, 16:00 - 16:30

Objective: This study evaluated the influence of preoperative symptom duration on Cervical Spondylotic Radiculopathy (CSR) outcomes following Cervical Disc Arthroplasty (CDA).
Methods: We retrospectively reviewed data from 90 CSR patients who underwent single-segment CDA at West China Hospital, Sichuan University, between January 2008 and March 2020. Patients were categorized based on preoperative symptom duration into early (<24 months) and late (≥24 months) intervention groups. Baseline characteristics, perioperative data, and prosthesis-related complications were compared. Clinical outcomes were assessed through changes in Japan Orthopedic Association (JOA) score, Neck Disability Index (NDI), and Visual Analogue Scale (VAS) scores from preoperative to final follow-up. Radiological evaluations included cervical lordosis (CL), C2-C7 range of motion (ROM), disc angle (DA), disc ROM (DROM), and disc height (DH).
Results: The follow-up ranged from 24 to 120 months, averaging 53.4 months. There were no significant differences in operation time, intraoperative blood loss, or radiological parameters between groups. However, the late intervention group exhibited a longer postoperative hospital stay ($P<0.05$) and an inability to maintain immediate postoperative CL levels at final follow-up. There were no significant differences in the incidence of heterotopic ossification, anterior bone loss, or prosthesis subsidence.
Conclusion: Preoperative symptom duration impacts CDA outcomes in CSR patients. Those with symptoms lasting ≥24 months experienced longer hospital stays and had a reduced ability to maintain postoperative cervical lordosis, suggesting early intervention may yield better structural outcomes.

Reverse total shoulder arthroplasty as a treatment for rare GIST bone metastasis occurrence

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JAM Session 2, SICOT Lounge, September 25, 2024, 16:00 - 16:30

Introduction: Gastrointestinal stromal tumor (GIST) is the most common type of sarcoma originating from the gastrointestinal tract, with an incidence of 10–30 cases per million. The predilection site for primary GIST is the stomach, while the most frequent metastasis sites are the liver and lungs. Bone metastasis of GIST, which mainly occurs in the spine, is rather rare. The surgical approach is considered a curative treatment, but occasionally, adjuvant and neoadjuvant chemotherapy are recommended. Case: A 62-year-old male was diagnosed with duodenal GIST affecting the head of the pancreas with liver metastases. Pancreaticoduodenectomy with metastases extirpation followed by adjuvant chemotherapy was the treatment of choice. The patient was considered disease-free for eight years. Afterward, he presented with a sudden left shoulder pain. Imaging showed a pathological proximal humerus fracture, while pathohistological analysis confirmed solitary GIST metastasis. En bloc tumor resection with rotator cuff muscle preservation and reversed total shoulder arthroplasty was performed. Histopathology confirmed total tumor excision with clear margins. Conclusion: We present a case of successful treatment for an infrequent occurrence of GIST bone metastasis to the proximal humerus.

Cryotherapy in acute soft tissue injuries: A systematic review and meta-analysis of randomized controlled trials

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JAM Session 2, SICOT Lounge, September 25, 2024, 16:00 - 16:30

Introduction: Acute soft tissue injuries such as ankle sprains are common, and cryotherapy is one popular treatment measure that can be administered readily. However, there have been varying recommendations on its use. Most recently, the use of cryotherapy is discouraged in the PEACE & LOVE guidelines. This study aims to re-evaluate the role of cryotherapy in rehabilitation post-acute soft tissue injury and if the above recommendation is warranted. Methods: A systematic search of four databases (PubMed, EMBASE, Scopus and Cochrane Library) was performed. Studies comparing pre-to-post cryotherapy outcomes or comparing cryotherapy vs control groups for acute soft tissue injuries were included. Meta-analysis was performed to compare the following outcomes between pre-to-post cryotherapy use: (a) Pain score at rest and moving (VAS), (b) Figure-of-8 ankle swelling. Results: Seven randomized controlled trials were included in this study. Total cohort size was 218, with 4 studies comparing non-cryotherapy and cryotherapy interventions. Meta-analysis revealed significant improvements in pain score both at rest and on moving pre-to-post cryotherapy use ($P < 0.05$). Meta-analysis was not conducted between cryotherapy and non-cryotherapy interventions due to heterogeneity in controls. Further analysis revealed significantly greater improvement in pain on moving compared to at rest in the pre-to-post cryotherapy cohort. Conclusion: This study found that cryotherapy could potentially remain relevant in pain control management in the rehabilitation phase of acute soft tissue injuries. Greater improvement in pain on movement suggests that cryotherapy can be more effective when used prior to physiotherapy/return to sports to facilitate rehabilitation or to improve function.

Neck gliding calcar screw in proximal humerus locking plates - A clinical and radiological analysis while treating proximal humerus fractures in adults.

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

Introduction: Calcar screws have long been in use as an important mechanical strut in proximal humerus locking plate fixation. However, calcar zone is vaguely described and surgeons often miss the appropriate positioning of this important screw. We hypothesise that a neck-gliding calcar screw in a proximal humerus fracture can yield excellent results. Methods: A multi-centre prospective case-control study was designed with 45 cases in the age group of 20-50 years (2022-23), who underwent fracture fixation with a neck gliding calcar screw in a proximal humerus locking plate construct. Neer's two-part, three-part and four-part fractures were included in the study. Control group included 32 cases operated by different surgeons with the calcar screws outside the radiologically hypothesized neck-gliding zone. Radiological parameters measured by blinded analyzers on a true Antero-posterior shoulder X-rays included- neck shaft angle(NSA), screw calcar distance(SCD), varus collapse of head(VCH). Functional analysis was done at 6 months follow-up using the Oxford shoulder score. Radiological analysis was done at regular intervals until bony union. Results: Mean study age group was 38.7years with 80% male predominance. Mean VCH was 5.8° in case group while control recorded a mean VCH of 33.8°($p<0.01$) . Mean SCD for neck gliding calcar screw group was 14.8mm while mean SCD was 29.2mm in control($p<0.05$). Complete varus collapse of head was seen in three cases in control group while all cases in study group united. Conclusion: Calcar screws with SCD<15mm (neck-gliding calcar screws) showed low chances of post-operative varus head-collapse and hence recorded excellent outcome.

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Sural Artery Flaps and Their Use in Managing Complications Following Orthopedic Procedures on Ankle: A Retrospective Review Of 9 Patients

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

Orthopedic procedures on foot and ankle have considerable risk for perioperative complications. We report our experience with 9 patients who undergone soft tissue reconstruction with reverse sural artery flap after developing skin and soft tissue defect in the ankle area. Age range was from 52 to 83 years. Regarding comorbidities, four patients were classified as ASA II and five patients as ASA III class. Two defects were following arthrodesis of the talocrural joint, six were following endoprosthesis implantation and one defect was posttraumatic after fracture of talus and consequent infected pseudarthrosis. Flaps varied in sizes from 4x3 cm to 8x10 cm. In 2 cases, the donor site was closed primarily, and in other cases, split-thickness skin graft was needed. In 4 cases, the taken sural flap was enough to cover the defect at the receiving site, and in 4 cases minor split-thickness skin graft was coapplied. Partial flap necrosis occurred in 1 case but needed no intervention and wound healed completely. In 8 cases the defect showed up in 1-3 months after primary orthopedic procedure. The posttraumatic case had a chronic osteitis and a prior skin defect. Follow-up until healed stage ranged from 3 to 15 months. Favorable results were present in 7 cases, 1 is still under follow-up and 1 resulted in amputation. None of the patients complained of any functional problem related to loss of sensation along the lateral border of the foot. Sural flap is a reliable method for providing soft tissue coverage in the ankle area.

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Halo pelvic ilizarov in cervical trauma: A novel approach

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

Introduction: At Ghurki Hospital Lahore a modified assembly of Halo traction named Halo pelvic ilizarov traction (HPT) is invented. It is in use that has its one end fixed to the skull and the other end is fixed to the pelvis via Schanz. This assembly spans the spine and thus can be used for stabilization as well as distraction of the spine. The aforementioned assembly has been used for reduction and then stabilization of cervical traumatic fractures that were not fit for orif. Methodology: This is a descriptive evidence base study on a cohort of 8 patients in which HPT was applied for cervical trauma with fracture of C1-C7 vertebrae that was unfit for orif with intact or partially reduced preoperative neurology. Results:In 8 patients HPT was applied with 7 males and 1 female with a mean age of 34.6 years. In which 2 patients had C1 fracture, 2 had C2, 1 had C3, 2 had C4 and one had C6 fracture. It was applied for a period of 3 months, 5 patients achieved bony union,1 patient achieved fibrous union, 1 patient didn’t achieved union, and 1 patient died due to some other comorbidities. Neurology was intact in all with 5 patients have good flexion of 80-85 °, extension of 65-70 °, lateral flexion of 25-30 ° and rotation of 80-85 °.1 patient had limited forward flexion of 60 ° and rotation of 50 °. Conclusion:Thus, it can be concluded that HPT is an effective alternative in treating cervical fractures.

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Mathematical model of neural network for quantitative determination of tumor proliferative activity based on the expression of Ki-67 antigen development

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

Computer vision for analyzing immunohistochemical images usage can improve the quality of the research, increase the chances of early disease diagnosis and, as a result, patient treatment success. In the malignant transformation and biological behavior of existing tumors, the leading role is given to the proliferative activity of tumor cells. For the proliferation of malignant tumor cells determination, the analysis of the expression of the Ki-67 antigen, which is a marker of tumor proliferative activity, is used. This is the crucial characteristic of the tumor phenotype, which substantially determines the tumor growth rate, metastasis risk, treatment potential response and the outcome of the oncological disease.

The objectives of the research were the following:

- Neural network architecture for the model of AI selection;
- Dataset formation;
- Math model for analyzing images of immunohistochemical slides design;
- Solution for image capture from a microscope with online image analysis with automatic Ki-67 counting feature development.

Developed solution allows to analyze images of immunohistochemical slides, including AI methods, providing the tool for pathologists working in the field of oncological orthopedic diagnostics.

As it operations result, developed solution provides assessment of the proliferative activity of tumor cells.

Developed software has an intuitive interface, user documentation and can be used by doctors without additional training. It can be used as a cloud service without purchasing additional equipment, or as a standalone on premise solution which does not require Internet access. Proposed model of operations significantly simplifies it is practical usage.

Minimally Invasive Methods Of Surgical Treatment For Aggressive Aneurysmal Bone Cysts Of The Sacrum

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

Materials and methods. The materials were based on the observation of 11 patients (7 males and 4 females) with a diagnosis of aneurysmal bone cyst of the sacrum, who underwent minimally invasive surgical treatment between 2012 and 2023. All patients initially complained of pain in the sacral and/or complaints of deformation in the projection of the sacrum. The duration of complaints ranged from 2 to 12 months on average. 4 out of 11 patients had neurological symptoms. Severe flexion neurogenic contracture in the hip and knee joint was noted in 1 case along with neurological symptoms. Results. The results were monitored over a period of 1 to 10 years. The criteria for assessing the results were complaints, absence of relapse of the disease, signs of repair of the pathological focus according to CT data, restoration of the supporting ability of the sacrum. 2 patients with no complaints had a local relapse of the disease in the form of a residual cavity. All patients who received surgical treatment showed positive dynamics in the form of tumor repair according to CT data, regression of complaints and neurological symptoms. Conclusions. Minimally invasive method treatment requires long-term observation and a greater number of hospitalizations before achieving a positive result. However, this approach is less traumatic and carries fewer risks, while the volume of the resulting repair allows us to obtain support-able bone structures of the sacrum and significantly reduce tumor aggression, which has a beneficial effect on the volume of required open surgical treatment.

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Mega-aspergilloma superinfection in spinal canal in 18-year old male: A case report.

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

Chronic infection of the spine can be a challenging condition to diagnose and treat. We present a case of a super-added aspergilloma of the spine, on pre-existing tubercular-spondylitis, in an immunocompetent patient, probably secondary to cottonoid foreign-body inoculation. Case – An 18-year-old immunocompetent male patient, presented with symptoms of lumbar canal stenosis, multiple discharging sinuses, and cold-abscess for 3 years. Multiple incision-drainage of the cold abscess with blind cottonoid packing along with inadequate treatment for tuberculosis was done over 2 years by a person of unknown qualification. At first presentation, radiology was suggestive of a soft-tissue mass in the L5-S1 spinal canal along with bony destruction and marrow edema, with elevated blood infection markers. Because of a history of insertion of foreign-body, and symptomatic claudication due to stenosis caused by soft-tissue mass, surgical decompression was done. Histopathological examination showed Aspergillus fungal-balls, which was managed post-operatively with voriconazole and empirical anti-tubercular therapy given the endemicity of the disease and typical progression of the disease as per history. The radiological characteristics of the osteomyelitis were also in concordance with a tubercular picture, with the localized soft tissue mass being attributed to super-imposed infection by Aspergillus, as is common in the lungs and sometimes, the brain. Conclusion – This is the first and unique case report showing Aspergilloma involving the vertebral column. Inadequate antibiotic regimen and blind introduction of foreign-body into sinus-tracts can lead to disastrous outcomes and fungal infections, which can closely mimic tuberculosis. Routine testing for fungus is advocated.

Slipped Proximal Tibial Epiphysis with complex Varus Procurvatum internal rotation: safe acute correction by Dome Physioclasis technique

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

Introduction: The classic treatment of multiplanar deformity secondary to (SPTE): Slipped Proximal Tibial Epiphysis which previously thought to be Blount's is the same as treatment as any complex deformity after Blount's disease by Hexapod and osteotomy and permanent physeal closure to avoid recurrence. However, here we prescribe a new simpler method for acute deformity correction of the complex deformity that can be more accurate than the current methods.

Method: Manual intraoperative acute correction of the deformity at it's CORA in the physeal growth by manual separation between the metaphysis and the epiphysis then fixation by 2 crossing cannulated screws with augmentation by a ring fixator. A prospective case study performed on 6 patients (10 limbs) with 5 years follow up with full correction and non recurrence.

Results
Acute correction of the varus, procurvatum & internal rotation was achieved intraoperatively and with fast union of the correction at the physeal growth plate level. Average follow up was 46 months for all cases. No complications encountered in either limb. There were no recurrence of the deformity and with excellent results and patients satisfaction.

Conclusion
"Dome Physioclasis" is a new novel surgical technique that allows acute tibial multi-plane deformity correction in patients with rare SPTE condition. Using Hexapod fixator after osteotomy is a major operation and may not be convenient to those patients. Our new technique may be an alternative simpler method of treatment for those patients. Future more familiarity in the technique may improve its understanding.
Level of evidence: IV.

Complex Upper Limb Injury: Floating Elbow And Shoulder Dislocation In A Polytrauma Patient

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

Background: Simultaneous fractures of the humerus and olecranon, radius or both are rare and are usually described as “floating elbow”. Another uncommonly documented injury is the humeral shaft fracture associated with glenohumeral dislocation.The authors describe a case where this two atypical pathologies occur in the same patient. Case Presentation: A 24-year-old male patient was admitted to the emergency room following a motorcycle accident. He exhibited a humeral shaft fracture, a right glenohumeral dislocation and an open Gustilo-Anderson (GA) type II olecranon fracture, In addition to the injuries to the right upper limb, he presented a comminuted segmental open fracture of the left femur type IIIB of GA. In an emergent context, the patient underwent osteotaxis of the femoral fracture, washing, debridement and closure of the olecranon wound and reduction of the glenohumeral dislocation. Subsequently, he underwent osteosynthesis of the diaphyseal fracture of the humerus with an endomedullary nail and osteosynthesis of the olecranon with an anatomical plate. Clinical Outcomes: The patient has good function of the right upper limb, with complete consolidation of the fractures and no evident shoulder instability noted. Discussion: The previous case is, to our knowledge, the first described in the literature of a floating elbow associated with ipsilateral glenohumeral dislocation. For both of these entities, treatment is usually surgical. The results described in the treatment of these complex injuries are modest (especially in floating elbows), However, in this case, a satisfactory outcome was obtained, both in terms of limb function and bone consolidation.

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Mortality rate in patients with hip fractures

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

Introduction
Hip fractures pose a threat to patients mortality, functionality and life quality.
Material and Methods
We analyzed patients over 65 years who were admitted to the orthopaedic clinic UCCS, with femoral neck (Colli femoris/CF) fractures and intertrochanteric (IT) fractures.
Results
Of 359 analysed patients, 190 had CF and 169 had IT fractures. IT patients had higher mortality (42%) than CF patients (14,7%), while it was highest in not operated patients (89,7%). Most patients were female (76,9%), mean surgery waiting time was 5 days in CF and 5,7 days in IT patients.
It can be concluded that these patients require increased intensive care and rehabilitation.

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Childhood viral encephalitis experiences and specific brain lesion regions as a risk factor for scoliosis: a multi-center study and Mendelian randomization analysis.

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

Background: The causal relationship between neurological abnormalities and idiopathic scoliosis remain controversial. This study aimed to investigate the potential association between suffering from viral encephalitis (VE) and an elevated risk of scoliosis development.

Method: 6634 VE patients and 26398 non-VE children at three hospitals were enrolled in the cross-sectional study. 1452 VE patients and 5608 non-VE children who underwent radiographs more than twice were recruited in the cohort study. The genetic instruments for scoliosis in mendelian randomization (MR) analysis were selected from FinnGen biobank with 297587 participants. The genetic association estimates for neuroimaging variables were obtained from the UK biobank.

Result: Viral encephalitis was associated with scoliosis in a multiple logistic regression analysis (OR = 2.561). Children with an abnormality in the cerebellum, brainstem, corpus callosum, and basal ganglia had a higher prevalence of scoliosis than other sites. In the cohort study, a history of VE was associated with a 3.604-fold increased risk of scoliosis development compared to children without VE ($P<0.001$). Multivariable Cox regression analysis within the VE group showed a 2.188-fold increased risk of scoliosis onset in children who had recovered from multiple brain lesions ($P<0.001$). Consistently, MR analysis indicated twelve imaging-derived phenotypes located in callosum, basal ganglia, brain stem, and cerebellum structures were causally associated with scoliosis.

Conclusion: Viral encephalitis and changes in specific brain areas increase the risk of new-onset scoliosis. This discovery supports the thesis that neurological changes have a causal association with scoliosis; if so, identifying modifiable mediators is required to inform prevention strategies.

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Structural failures in vascularized fibular graft in infected tibial gap non unions

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

AIM: To study the various types of structural failures of vascularised fibular graft for infected tibial bone loss. MATERIALS and METHODS: We retrospectively studied thirty seven cases of vascularized fibular graft done for infected gap non unions of the tibia. The age of the patients ranged from 21-72 yrs. All except one patient were males . The length of the vascularised fibular graft ranged from8-25 cm. RESULTS: There were 23 incidences of structural failures of the graft. We have identified these failures as of two types- Type I failure- stress fracture occurring in the graft shaft and Type II failure – within 1 -2 cm of the graft host junction or dissociation at the graft host junction. There were ten incidences of type I failure and thirteen incidences of type II failure. Type I failure was treated with initial above knee plaster of Paris cast for 6 weeks and were protected by a PTB cast or custom made brace for another six weeks and all of them united with hypertrophy of the graft. Type II failures were treated initially as type I and of the thirteen type II failures six of them united. The remaining seven needed the use of an Ilizarov ring fixator either in monofocal or bifocal mode to achieve union. CONCLUSION: It is important to identify which type of structural failure of the graft had occurred as type II failures have more than 50% incidence of non-union needing the use of an Ilizarov ring fixator

Neglected Posterior Knee Dislocation – A Rare Injury with Surgical Management

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

introduction:
Neglected knee dislocation is a rare injury. We report a case of neglected posterior dislocation managed with open reduction and ligament reconstruction. Such cases are rarely reported in English literature
Case Report:
40 yr old male presented to our OPD with deformity and swelling of right knee. Knee ROM was 0-20 degree. Distal pulses were normal. Radiological investigation revealed posterior knee dislocation which was missed. MRI showed ACL injury, Chondral Defect in the medial femoral and tibial condyle with patellar tendon disruption. PCL and PLC was intact. Patient was posted for surgical management. Knee was opened through a medial para-patellar approach, adhesions were removed. Blunt tip of homan's retractor was inserted on the under surface of inter-condylar notch and by levering the retractor on the tibia. After reduction, knee was stabilised with external fixator. Ruptured patellar tendon was stabilised with SS wiring. Patient was kept on Ex-Fix for 4 weeks. Knee mobilisation was started, once ROM was achieved to 0-100 deg. Arthroscopic reconstruction Of ACL with medial menisectomy was done. PCL was intact. Now patient at 3 year follow up, no residual instability with knee ROM of 0-90 deg
Conclusion
Acute knee dislocations are to be reduced immediately under anaesthesia. Our case is very rare in which dislocation was neglected with only patellar tendon disruption and ACL injury. PCL was intact. Management was open reduction of knee dislocation with patellar tendon stabilisation

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Can BMI predict surgical field depth in lumbar discectomy

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

Background: Body Mass Index (BMI) is used for obesity estimation. Obesity is a known risk factor for the post-operative complications, its relevance to operative surgical field has not been well documented. We aimed to review a relationship between BMI and the depth of spinal surgical field. Methods: Retrospective review of the 356 single level lumbar discectomy patients was conducted. Surgical field depth (SFD) was defined as the distance from the skin to the posterior surface of the lamina while subcutaneous fat (SF) was defined as the distance from the skin to the posterior tip of the spinous process on the MRI scan. Patient age, gender and BMI were recorded. Results: 207 patients included, 99 females and 108 males. Mean BMI was 27.6 (28.3 for males and 26.7 for females). The mean SFD distance and mean SF distance were 64.4mm & 34.2mm respectively. 58 patients had normal BMI, 98 were overweight and 51 were obese. We found a positive correlation between BMI and SFD,SF. Weight significantly correlated with SFD & SF in females but not in males. When patients were categorized based on their BMI, there was a significant difference in the means of both SF and SFD. BMI, gender and age were independent predictors of SF & SFD in linear regression models .Conclusion: BMI has association with the depth of the surgical field and subcutaneous fat in the lumbar region. Although the values obtained are not absolute, they can help surgeons anticipate and discuss perioperative complications with the patients.

Vitamin D [25(OH)D] Serum Concentration Level among Filipino Postmenopausal Women with Proximal Femur Fractures: A Single-Center Study from the Philippine Orthopedic Center

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JAM Session 3, SICOT Lounge, September 26, 2024, 10:00 - 10:30

INTRODUCTION: Fragility fractures commonly occur among patients with osteoporosis, and they are considered an important public health issue. Low serum 25(OH)D levels are a risk factor for hip fracture.
OBJECTIVE: This study determined the serum concentration of 25(OH)D level in a 60 - 100-year-old Postmenopausal Woman with proximal femur fractures at the Philippine Orthopedic Center
METHODS: This is a cross-sectional analytical research study conducted at the Philippine Orthopedic Center from March 2022 to March 2023. This study determined the Serum concentration of 25(OH)D level in a 60 – 100-year-old Postmenopausal Women in a Philippine Orthopedic Center with proximal femur fracture.
RESULTS: Serum concentrations of Vitamin D 25(OH)D with an overall mean and standard deviation of 26.7±8.7 ng/mL, with a median of 25.1 ng/mL and an interquartile range (IQR) of 21-32.1 ng/mL. The frequency distribution of 25(OH)D levels in the entire sample showed that 69.6% of women had concentrations below 30 ng/ml, 26.4% of women 30-40 ng/ml and 4.0% of women above 40 ng/ml. These results suggest that as the serum concentration of Vitamin 25(OH)D decreases, the risk of hip fractures and OSTA scores increase.
CONCLUSION: Overall, the results suggest that a large proportion of postmenopausal women in this sample had insufficient levels of Vitamin D, which may have implications for bone health and other health outcomes.

Treatment of femoral neck fractures using intramedulary nail with linear compression

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JAM Session 4, SICOT Lounge, September 26, 2024, 15:30 - 16:00

Fractures of the neck of the femur are one of the most common types of lower extremity fractures that occur in people of all ages. Specific vascularization, anatomy and morphology of the femoral neck are key factors that play a role in the treatment and outcome of these fractures. A simple fall or high-intensity trauma can lead to a femoral neck fracture. In young patients, fixation of these fractures is the method of choice for treatment, and many fixation methods have been used over the years. Cannulated screws, DHS are still the type of fixation that the largest number of surgeons use. We believe that the cephalomedullary nail with linear compression provides adequate rotational and angular stability of the fracture as key factors in union. Immediate compression through the fracture site and fixation with two screws are the most important factors for stable fixation. Over the last 4 years we have treated 30 hips with this nail. We followed the patients for at least one year after the operation. 26 fractures were healed, one cut-out, two avascular necrosis, while we have no information about one patient. Our data encourage us that the cephalomedullary nail with linear compression can be an effective method of treating femoral neck fractures if there is an adequate indication for its application and if the correct surgical technique is used.

Application of free partial toenail bed flap transplantation in finger deformity

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JAM Session 4, SICOT Lounge, September 26, 2024, 15:30 - 16:00

Introduction: To study the recovery of the appearance and function of the finger after the free part of the toenail bed tissue flap was transplanted to the finger. Methods: A retrospective analysis was made of 11 cases of finger deformity repaired by free partial toenail bed flap transplantation from January 2018 to January 2023. There were 5 thumb deformities, 2 index finger deformities, 2 middle finger deformities and 2 ring finger deformities. All patients had terminal segment deflection, nail bed defect and deformity. The patients were followed up, X-ray films were taken, force lines were measured, and the range of motion of interphalangeal joint was measured. Results: All patients were followed up after the operation. Part of the toenail bed flaps of 11 patients survived, the force line improved, the nail bed increased by 26%, and the interdigital mobility increased by 21% compared with the previous operation. Conclusion: Transplantation of free partial toenail bed flap to correct finger deformity can achieve good therapeutic effect.

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Necrotizing fasciitis: presentations, management and outcomes over a 4 year period in a UK district general hospital.

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JAM Session 4, SICOT Lounge, September 26, 2024, 15:30 - 16:00

Introduction: Necrotizing fasciitis (NF) is a rare, rapidly progressive soft tissue infection affecting the skin, subcutaneous tissue and fascia. NF can be caused by a single bacteria or can be polymicrobial, resulting from either injury to skin or haematogenous spread. Early diagnosis and aggressive surgical debridement are vital in reducing mortality. Methods: In this case series we describe the clinical presentation, demographics, laboratory and microbiological features, management and outcomes of patients presenting with NF over a 4 year period in a UK district general hospital. We also assess the validity of the LRINEC scoring system amongst our study population. Results: A total of 19 patients were diagnosed with necrotising fasciitis during this time. There were 8 females and 11 males, and average age was 63.5 years. 14 cases involved the lower limb and 5 the upper limb. All cases were managed operatively. Mean time from admission to surgery was 24.2 hours and a mean of 2.9 surgeries were needed per patient. Wound swabs and intra-operative cultures were performed in all cases demonstrating in most cases polymicrobial infection. All patients had complex underlying comorbidities. Mean LRINEC score was 6.9 and demonstrated a high predicting value. Conclusion: Necrotising fasciitis is a life threatening infection. Early empiric broad spectrum antibiotics and surgical debridement with routine re-examination and further debridement as needed are imperative for optimal outcome. We present our 4 year results in the management of this critical condition in a general district hospital in UK.

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Reliability of distally based sural flap in elderly patients: comparison between elderly and young patients

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JAM Session 4, SICOT Lounge, September 26, 2024, 15:30 - 16:00

Reconstructions of the soft-tissue defects over the distal lower extremities in the elderly patients (≥60 years old) are full of challenges because of many comorbidities. The purpose of this study was to report the clinical application of the distally based sural flap in the elderly patients, and to verify the reliability of this flap in the elderly patients. Between March of 2005 and December of 2021, 53 patients aged over 60-year-old and 55 patients aged 18 to 30-year-old who underwent the procedure have been included in this study.The reconstruction outcomes, medical-related complications, flap viability-related complications and potential risk factors are compared between the group A (≥60 years old) and group B (ranging from 18 to 30 years old). The partial necrosis rate in group A (9.43%) is higher than group B (9.09%), but the difference is not significant ($P > 0.05$). The constitute ratio of the defects that were successfully covered using the sural flap alone or combining with simple salvage method (i.e., skin grafting) is 96.22% and 98.18% in group A and B, respectively ($P > 0.05$). The differences of the risk flaps factors that affected the survival of distally based sural flap were not significant between group A and B ($P > 0.05$). The distally based sural flap can be effectively used to repair the soft-tissue defect of the lower extremity in the elderly patients. It is safe and reliable to harvest and transfer the flap in one stage, and the delay surgery is not necessary.

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Life After a Hand Injury: Quality of Life Assessment After Six Months

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Hand injuries are extremely common in domestic and industrial setting. Around 10% of these injuries require hospitalization and surgery. Even though these injuries are not life threatening, they can result in severe disability and can significantly decrease quality of life and work ability. In 2023, 86 patients with hand injuries were surgically treated at a single center. Severity was determined by the Hand Severity Score. Quality of life assessment was done after six months using Disabilities of Arm, Shoulder, and Hand (DASH) score, Body Dysmorphic Disorder Examination Self Report – Munich Version (BDDE – SR) and Hospital Anxiety and Depression Score (HADS). Patients were predominantly male (91.86%), with the mean age of 51.40 ± 14.25 years. The average DASH score in males was 20,73, and females 17,20, and was mostly affected by severity of the injury. Average BDDE-SR was 58,25 in males and 73,12 in females, and the mean HADS was 3,27 for depression in males and 4,59 in females, and for anxiety 2,02 in males and 3,06 in females. Worse BDDE-SR scores were seen in younger patients, in females, and in patients who had at least one finger amputated. HADS scores mostly depended on hospital length of stay, and higher depression scores were seen in older patients. Depending on their severity, hand injuries decrease quality of life to a different degree. Patient dissatisfaction was the greatest when the injury involved finger amputation, especially in younger females, and when the injury resulted in long hospital stay and worse functional results.

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Posttraumatic thumb reconstruction - a clinical case of toe-to-hand transfer

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Introduction: Traumatic amputations of the fingers are devastating injuries that cause loss of pinch and grip function and lead to profound disability, prolonged rehabilitation and compromised quality of life. Case: We present the case of a 49-year-old female, victim of a traumatic amputation of the first 3 rays of the right hand. She went to our consult two years after the initial accident, and underwent reconstruction of the thumb by transfer of the second toe by performing an anastomosis of the dorsal pedis artery and vein to the branch of the radial vessels in the wrist as well as an anastomosis of the external saphenous vein to the basilica, and tenorrhaphy of the extensor and flexor tendons. The patient required subsequent reinterventions to optimize skin coverage and function - firstly a total skin graft in the 1st interdigital space of the palmar and dorsal surface of the hand and later an excision and degreasing of excess skin on the base and back of the first finger. The patient progressively recovered joint mobility with the ability to pinch, gradual gain in sensitivity, with only some decrease in muscle strength. Discussion: Reconstruction of a posttraumatic first finger defect is a challenging surgical endeavor, with multiple options available. Although free toe transfer techniques continue to evolve, such procedures are technically demanding and result in inevitable morbidity in the donor area. Nonetheless, compared to patients who have not undergone thumb reconstruction, toe transfer improves pinch strength, grip strength and static two-point discrimination.

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Zoledronic acid and cephalomedullary nailing in Fibrous dysplasia

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JAM Session 4, SICOT Lounge, September 26, 2024, 15:30 - 16:00

Introduction:
Fibrous dysplasia is characterised by weak bony architecture due to overproduction of disorganised fibrotic matrix. There is significant morbidity secondary to pain, deformities, and pathological fractures. Intramedullary fixation is the best treatment to prevent recurrent fractures and deformities. We describe our experience with the use of zoledronic acid therapy and cephalomedullary fixation, showcasing how this enhances biomechanical stability, improves function, and provides pain relief in compromised bones.

Materials & Methods:
Ten patients were treated for proximal femur fibrous dysplasia with coxa vara. All the patients received adjuvant zoledronic acid therapy and underwent valgus osteotomy and cephalomedullary fixation. In children, where cephalomedullary fixation could not be done, paediatric hip plate was used . Patients were examined clinically using modified criteria of Guille.

Results:
The mean age was 22.6 years (range 7-39). The mean neck-shaft angle pre-operatively and postoperatively was 94° (range 84°–107°) and 124° (range 117°–131°) respectively. Limb-length discrepancy was corrected from 3.0 (range 1.8–4.5) cm preoperatively to 0.7 (range 0–1.9) cm postoperatively. All osteotomies had healed at the final followup examination. The clinical scores (modified criteria of Guille), improved from an average of 2.9 (range 1–7) to 8.5 (range 6–10).

Conclusion:
Valgus osteotomy and cephalomedullary fixation provides good results in fibrous dysplasia of proximal femurs, however, challenges faced include addressing >1 CORA in proximal femoral fibrous dysplasia, with additional presence of compensatory genu valgum; difficulty in complete correction of neck-shaft angle owing to fixed angle cephalomedullary fixation devices.

Keywords: Fibrous dysplasia; Zoledronic acid; Valgus osteotomy; Cephalomedullary nailing

Comparison Clinical outcomes Robotic-assisted versus Conventional unicompartmental knee arthroplasty: 10-years survivorship

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Background: Robotic-assisted unicompartmental knee arthroplasty (UKA) has improved component alignments and clinical outcomes. Aim of this study was to compare the clinical outcomes, radiologic outcomes, survivorship of implant, and revision rates of robotic-assisted UKA to those of conventional mobile Oxford UKA in long-term follow-up at a minimum of ten years.
Method and materials: a prospective study, One hundred knees, ninety-two patients with medial unicompartmental osteoarthritis were assigned to treatment with either conventional Oxford mobile UKA or robotic-assisted surgery UKA (MAKO). Radiographic outcomes and Oxford knee score was evaluated at 1,5 and 10 years after surgery. Revision rates and mode of failure were recorded compared and analyzed.
Results: The comparison between the two groups in terms of post-operative radiographic measurement included femorotibial angle (0.02° ± 4.40 vs. 3.38° ±3.45), femoral component alignment (3.13° ± 2.11 vs 8.08° ± 2.99), tibial component alignment (1.47° ± 1.59 vs. 0.33° ± 2.49), posterior slope (3.89° ±3.15 vs 2.02° ±1.87) in robotic group were superior than conventional group ($p<0.05$). Only ten years survivorship curve in robotic group was lower than conventional group. However, Oxford knee scores of one year, five years, and ten years follow-up were not significant differences for both groups.
Conclusion: Robotic-assisted UKA surgery makes prosthesis positioning more accurate than conventional UKA. However, no differences in clinical outcomes and rates of revision were found in the midterm statistically significant. Early revision rates were observed in the robotic-assisted UKA group

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Treatment of late presented congenital patella dislocation with concurrent external rotational knee dislocation

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Purpose: Congenital dislocation of the patella with concurrent knee external rotational dislocation is a rare condition that results in substantial functional disability. This condition is present at birth, and the correction should be planned as soon as the diagnosis is confirmed. Still, unfortunately, the treatment may be delayed until late childhood in some patients. We retrospectively reviewed the results of operative treatment of the five knees presented late in three patients with congenital patella and concurrent knee dislocation. Methods: The ages of the three patients at surgical treatment are 9, 10, and 11 years, respectively. All knees were treated operatively with quadricepsplasty, lateral release, medial plication, medial transfer of the lateral patellar tendon, knee reduction, and lateral collateral ligament reconstruction. Results: The patella and knee reduction were achieved, and knee function improved in all five knees. Conclusion: Good clinical outcomes can be achieved with surgery for children with congenital dislocation of the patella with concurrent knee external rotational dislocation. Keywords: Congenital dislocation, Patella dislocation, knee dislocation, Operative treatment

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The effect of proximal femoral varus and valgus osteotomies on stress distribution of the hip: a finite element analysis model of Perthes disease

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Introduction: To construct a three-dimensional finite element model of Perthes disease to evaluate the impact of different surgical methods on the stress distribution of the hip in children biomechanically. Methods: Two patients, one was Herring type B, the other was type C, were chosen to establish the finite element model. According to different proximal femoral osteotomy methods (10°, 15°, 20° each for varus osteotomy and valgus osteotomy), the changes in bone and cartilage stress around the hip joint were analyzed. Results: By finite element analysis, different proximal femoral osteotomy methods can change the stress distribution of the hip joint, and the proximal femoral varus osteotomy method is better than the proximal femoral valgus osteotomy method, which can progress the stress distribution of the hip. Conclusion: For Perthes disease, the maximum stress is mostly concentrated on the anterolateral side of the femoral head. This may be the biomechanical basis for the deformation, fragmentation, and collapse of the femoral head. As for the treatment, the proximal femoral varus osteotomy is better than the proximal femoral valgus osteotomy, which can improve the stress distribution of the hip joint and make it closer to the normally developed hip joint.

Fatty Infiltration into Cervical Paraspinal Muscle Undergoing Hybrid Surgery and its Relationship with Cross-Sectional Area

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Introduction: The cervical paraspinal muscle (CPM) has an essential role in positioning, stabilizing and directing the cervical spine. However, information is lacking regarding the influence of CPM on outcomes following anterior cervical surgery. This study aims to evaluate the association of fatty infiltration (FI) of CPM with postoperative outcomes and analyze the relationship between FI and cross-sectional area (CSA) of CPM.
Methods: A retrospective analysis was performed on 110 consecutive patients undergoing continuous 2-level hybrid surgery. According to Goutallier classification of multifidus FI, the patients were divided into normal, moderate, and severe groups. Image J software was employed to outline and analyze CPM. Clinical outcomes and radiographic parameters were collected and evaluated for relevant comparisons.
Results: Visible FI was identified in 69.1% of patients (76/110), with a propensity in elderly patients (p=0.053). No statistically significant differences were presented among the three groups regarding pre- and postoperative clinical evaluation scores. The cervical lordosis was significantly higher in the normal group before surgery (p=0.029). Likewise, the sagittal vertical axis (SVA) was significantly higher in the severe group than the normal group at the final follow-up (p=0.046). Moreover, after correction according to vertebral body area, no statistically significant relationship existed between CSA ratio and FI grade.
Conclusion: CPM degeneration is common and age-related in patients with cervical disc degenerative disease. More importantly, there was a significant positive correlation between severe FI of CPM and postoperative sagittal balance disorder, particularly in C2-7 SVA and segmental alignment of arthroplasty level.

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Fracture morphology and predictive model of irreducible intertrochanteric fractures: A study based on three-dimensional fracture mapping and machine learning technique

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JAM Session 5, SICOT Lounge, September 27, 2024, 10:00 - 10:30

Introduction: The irreducible intertrochanteric fracture (ITF) is a thorny issue. Preoperative prediction based on the fracture characteristics shown in X-ray or computerized tomography is challenging. This study aimed to summarize the fracture morphological characteristics of irreducible ITFs and establish the prediction model and interpretation model to achieve the preoperative prediction of irreducible ITFs.
Methods: The fracture mapping technique was used to depict the fracture line distribution characteristics of ITFs. The key characteristics of ITFs were identified by quantitative statistics with the new proposed partition of the proximal femur. Multiple machine learning classification models were integrated to analyze and identify the optimal model, and Shapley Additive exPlanations (SHAP) interpretation was developed for model explanation and personalized risk assessment.
Results: Involvement of the lateral cortex, the location of the main fracture line, the presence of a large posteromedial bone fragment, the direction of the main fracture line, the comminuted degree of the fracture and involvement of the lesser trochanter were identified as the key variable of ITFs by comparing the difference of fracture line distribution. Among all classification models, the logistic classification model was the optimal model with the area under the curve 0.72 (95% confidence interval: 0.61-0.89). The location of the major fracture line and involvement of the lateral cortex were the most important features to influenced the fracture reduction.
Conclusions: Machine learning models effectively predict irreducible ITFs using fracture line distribution and fracture morphological characteristics. The SHAP model can further enhance the interpretability of the prediction model.

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Interdependencies of Cervical and Lumbopelvic Sagittal Parameters in Elderly Women: A Study on Spinal Compensatory Mechanisms and Alignment

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This study is aimed to explore the correlation between cervical spine and lumbopelvic sagittal parameters in elderly women, emphasizing the compensatory role of cervical lordosis within the global spine alignment influenced by bone quality and muscle strength. We focused on a cohort of 189 women aged 65 and above, capable of walking independently and demonstrating low bone mass as indicated by DEXA T scores. Comprehensive evaluations included whole-spine standing lateral radiographs to measure various sagittal parameters.

Statistical analysis using correlation coefficient tests and multiple regression highlighted significant findings: menopause period and BMI positively correlated with the C7 slope, suggesting that these factors influence cervical spine curvature. Conversely, grip strength showed a negative correlation with the C7 slope, indicating that stronger grip might be associated with more favorable cervical alignment. Additionally, thoracic kyphosis, lumbar lordosis, and pelvic incidence also displayed significant correlations with other spinal parameters, revealing complex interdependencies within spinal alignment.

The results underscore the intricate relationships between cervical lordosis and pelvic parameters, highlighting the cervical spine's role in maintaining overall spinal balance in the elderly. It may provide valuable insights into the compensatory dynamics of spinal alignment in response to age-related changes in bone and muscle, offering a potential foundation for tailored interventions aimed at mitigating spinopelvic malalignment and enhancing life function in older adults. The results of this study may contribute to the broader understanding of spinal health in the geriatric population, emphasizing the need for targeted spinal care strategies.

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Effective Surgical Local Control Strategies for Managing Pediatric Sarcomas in an NGO-Operated Facility in a Low-Income Country: Aligning with High-Income Country Standards

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Background:

Advanced surgical techniques for local control of pediatric sarcomas pose significant challenges in resource-limited settings, characterized by limited experience and suboptimal infrastructure. The objective of this study is to analyze the outcomes of surgical treatment at a pediatric oncology unit operated by an NGO in Syria.

Methodology:

This is a retrospective analysis of pediatric patients (age < 18 years) diagnosed with bone or soft-tissue sarcomas treated at BASMA Pediatric Oncology Unit in Damascus between June 2018 and August 2023. The outcomes analyzed were the type of surgical local control, short-term complications, rate of local relapse, and overall treatment outcome

Results:

The study analyzed the outcomes of 85 pediatric patients (median age: 11 years) diagnosed with osteosarcoma (n=45), Ewing Sarcoma (n=34), and non-rhabdomyosarcoma soft tissue sarcoma (NRSTC) (n=6). The surgical interventions included amputation (n=14), tumor resection without prosthesis (n=17), and tumor resection with prosthesis (n=51). Following a median follow-up of 33 months, 55 patients (64%) were still alive, with 49 patients (57%) showing no evidence of disease. Short-term complications included pulmonary embolism-related death in one patient who underwent tumor resection with a prosthesis, wound dehiscence post-tumor resection with a prosthesis (n=2), and prosthesis fracture (n=2). Local relapse was noted in 15 patients. Most local recurrences (n=11) occurred after tumor resection with prosthesis.

Conclusions:

The surgical outcomes for achieving local control of pediatric sarcomas in resource-limited settings can be deemed satisfactory given the presence of a skilled surgeon and the availability of adequate resources and infrastructure.

Gradual reduction using overhead traction for late-detected developmental dysplasia of the hip: a series of three cases diagnosed over 4 years old

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JAM Session 5, SICOT Lounge, September 27, 2024, 10:00 - 10:30

The optimal method of reduction for late-detected developmental dysplasia of the hip (DDH) remains controversial. Gradual reduction (GR) using traction is a safer and more reliable option for DDH than closed reduction or open reduction. GR using overhead traction (OHT) has been indicated for DDH in the walking age up to 4 years of age. We report on three children with late-detected DDH whose hips were treated between 4 and 6 years of age with GR using OHT. The procedure is composed of three steps including horizontal skin traction in a slightly abducted position, vertical traction (overhead traction) with the knees extended, and above-knee traction. The first step aims to stretch muscles and soft tissues surrounding the hip joint and to achieve an acceptable descent of the femoral head. In the second step, we employ a dedicated apparatus to maintain the hip at 90 to 100 degrees of flexion. We increase hip abduction once a day by 10-degree increments up to 70 degrees. In the third step, the knees are allowed to flex actively so that the muscle tone in the hip adductors and hamstrings can be reduced. The dislocated hips are usually reduced spontaneously at an early phase of this step. Although stable reduction without subsequent redislocation was technically accomplished for all patients, clinically significant AVN has developed in patients aged 5 years or older, indicating the need for some modifications to the conventional technique or reconsideration of the upper age limit for this method.

Assessing the Management of Stable Closed Ankle Fractures and Developing a Care Pathway in a Trauma Centre

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JAM Session 5, SICOT Lounge, September 27, 2024, 10:00 - 10:30

Introduction: Ankle fractures can be broadly categorized into three main groups: Stable, Unstable and Complex fractures. Stable ankle fractures do not displace under physiological weight bearing. They are associated with pain, resulting in it being difficult or even impossible to weight bear. Treatment is non-operatively, although it often takes 6 weeks or more for the bone to heal. Methods: A retrospective audit of patients with stable ankle fractures referred to the fracture clinic in August 2021. A total of 40 patients reviewed. The typical pathway of patient being followed-up with stable ankle fractures: 1st visit in fracture clinic surgeon should assess stability, VTE risk assessment and initial management. 6th week visit surgeons should assess healing status and give rehabilitation and recovery advice. To consider further ongoing care if required.
Results: During the 1st Visit 15% had weight bearing x-rays done and 33% had VTE risk assessment documented. 92% were managed with a boot allowing for full-weight bearing. 30% were seen again in 1-2 weeks. Stabiliy test done with x-ray done for 92% of patients. Only 25% were discharged back to GP following the first week visit. During the 6th week visit 75% were assessed. 33% of patients seen face to face had x-rays done. 22% were given further follow-up. 25% of the patients during telephone consultation revealed ongoing pain or swelling and therefore offered further assessment.
Conclusion: We believe that a standardized pathway and a patient information leaflet would improve patient experience, optimises resources and better comply with BOAST guidelines.

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Osteochondritis dissecans of the knee – epidemiology, surgical treatment and results - a department experience.

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JAM Session 5, SICOT Lounge, September 27, 2024, 10:00 - 10:30

Introduction: Osteochondritis dissecans (OCD) of the knee it's a condition of unknow pathoetiology where biological and mechanic events affect both subchondral and articular cartilage. The medial femoral condyle (MFC) is the most frequently involved. It affects mainly males between 12-19yo and athletes. Surgical treatment is recommended either when there is instability or when conservative treatment fails. Surgical technique depends on the age of patient, size and stage of the lesion. Methods: Retrospective study that included all patients that underwent surgery for OCD (2012-2023) - population of 25 patients, 30 knees. Clanton-Lee classification was used in order to correlate lesions with the surgical treatment choice. Results: Median age 19yo, 88% males. 5 patients (25%) with bilateral disease and 77% affected MFC. 6,6% grade 2 (both treated with internal fixation); 60% grade 3 (83% treated with internal fixation, 6% with microfractures and 12% with autograft); 33% grade 4 (70% treated with removal and microfractures and 20% with mosaicoplasty). From 18 patients with internal fixation, 13 made MRI at 6 months with 77% showing complete integration. Discussion: In patients with stage 2 and 3, where there is no displacement of the fragment, internal fixation was the treatment of choice with good results which is agreement with current literature. In the other hand in stage 4, as the fragment is displaced, the preferred treatment was removal and microfractures with graft implantation as alternative. Conclusion: Internal fixation seems to have very good results in the treatment of OCD stage 2 and 3.

Complementarity of Microsurgery and Distraction Osteogenesis in Reconstructive Surgery of Extremities

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JAM Session 5, SICOT Lounge, September 27, 2024, 10:00 - 10:30

Introduction: Severe injuries with wide injury zone, like amputations, have very limited possibilities to preserve anatomical integrity and function of extremity. Healing is complicated, has several phases and it is certainly a challenge.
Aim: This paper shows clinical series of complex injuries on extremities and results achieved by one surgical team.
Method: The initial surgical treatment considers replantation or revascularisation. The next step is defect covering and then tissue grafting by distraction osteogenesis or distraction histiogenesis. We talk about distraction histiogenesis because when we apply distraction on extremity, we do not only produce the bone, but all the tissues.
Results: The results primarily depend on good plan of healing which is based on estimation of possibilities for reconstructive healing. Results confirm complementarity of microsurgery and distraction osteogenesis. After replantation, shortened part can be elongated as much as needed by distraction osteogenesis or histiogenesis.
Conclusion: Surgical healing of most complicated injuries often demands application of several available surgical techniques and it often should be performed in several phases. Surgical techniques like microsurgery and distraction osteogenesis provide exceptional possibilities to achieve anatomical integrity and recovery of function. Furthermore, in situations where only one surgical technique would not provide acceptable recovery, the use of both techniques extends indications for microsurgery and distraction osteogenesis
Keywords: Reconstructive surgery of extremities, microsurgery, distraction osteogenesis, distraction histiogenesis

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Risk factors of bone loss after Prestige-LP cervical disc arthroplasty

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JAM Session 5, SICOT Lounge, September 27, 2024, 10:00 - 10:30

Background: Cervical disc arthroplasty (CDA) is a potentially feasible alternative surgical technique for patients with cervical disc degeneration disease (CDDD). Periprosthetic bone loss (BL) is a radiological phenomenon which was proposed in recent years. This study aims to the study aims to comprehensively explore the risk factors of BL and attempted to furtherly reveal its underlying mechanism and influence on outcomes. Methods: A retrospective and comparative study was conducted of consecutive patients who had undergone one-level CDA, two-level CDA or two-level hybrid surgery (HS) at our institution to treat CDDD. Demographic, perioperative and radiological data were correspondingly recorded or evaluated. Patients were divided into different groups in reference to existence and degree of BL, following with inter-group comparisons. Results: A total of 324 patients were enrolled in this study, with 384 arthroplasty segments involved in total. BL was detected in 57.72% (187/324) patients and 53.91% (207/384) arthroplasty segments during the whole follow-ups. The final multivariate regression model shows that age≥45 years and two-level HS were independently associated with a lower risk of BL. Besides, a greater change of disc angle (ΔDA) was an independent risk factor of BL. The results further indicated that severe BL may lead to a higher rate of endplate subsidence and collapse. Conclusion: Younger age and greater ΔDA were independent risk factors of BL, while HS potentially exerted preventative effect. Bone remodeling and micromotion may potentially initiate the BL process. Subsequent research should focus on elucidating the mechanisms and preventive measures for severe BL.

Early Mobilisation and Weight Bearing in Communited distal femur fractures- what is the way to go?

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JAM Session 5, SICOT Lounge, September 27, 2024, 10:00 - 10:30

Distale interprosthetic Femur fractures Double plate osteosynthesis for distal femur fractures in geriatric patients is an excellent tool to allow immediate full weight bearing in presence of large comminution areas.

We report on a 82-year-old female patient who sustained a left distal periprosthetic femur fracture (AO 33A3.3) in January 2023. The initial surgical treatment using a lateral 15-hole LISS plate (Synthes) was difficult due to the lack of osseous references caused by intraoperative complications.

Postoperatively, a femoral internal rotation of 35° and a leg length discrepancy was noted. The patient was mobilized non-weight bearing for 6 weeks. Conventional radiological showed a delayed bone healing.

3.5 months postoperatively, a miss-step resulted in a refracture with a large area of comminution including implant failure. We therefore carried out a complete Implant removal and performed a double plate osteosynthesis in May 2023.
Intraoperatively, the axis, length and rotation were anatomically corrected.

We decided to mobilize the patient early postoperatively, initially with half body weight and Continuous Passive Motion (CPM) device treatment despite the large area of comminution.

Just two months postoperatively, the patient was able to perform full weight using a walker. There was pain free knee flexion off up to 110° with full extension ability. Radiologically we saw rapid and progressive callus formation bridging the fracture. The osteosynthesis material is stable. The patient is now extremely satisfied.

We were able to show that early mobilization with stable double plate osteosynthesis achieved excellent clinical and radiological results despite the large comminuted area.

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Mode establishment and preliminary clinical application effect analysis of anterior cervical surgery in outpatient setting

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JAM Session 5, SICOT Lounge, September 27, 2024, 10:00 - 10:30

Objective
To establish the mode of anterior cervical surgery in outpatient setting, and evaluate its preliminary effectiveness.
Methods
A clinical data of patients who underwent anterior cervical surgery between January 2022 and September 2022 and met the selection criteria was retrospectively analyzed. The surgeries were performed in outpatient setting (n=35, outpatient setting group) or in inpatient setting (n=35, inpatient setting group). The operation time, intraoperative blood loss, total hospital stay, postoperative hospital stay, and hospital expenses of the two groups were recorded; JOA score, VAS-neck score, and VAS-arm score were recorded before and immediately after operation, and the differences of the above indexes between pre- and post-operation were calculated.
Results
The total hospital stay, postoperative hospital stay, and hospital expenses were significantly lower in the outpatient setting group than in the inpatient setting group ($P<0.05$). The satisfaction of patients was significantly higher in the outpatient setting group than in the inpatient setting group ($P<0.05$). The JOA score, VAS-neck score, and VAS-arm score of the two groups significantly improved at immediate after operation when compared with those before operation ($P<0.05$). No surgical complications, such as delayed hematoma, delayed infection, delayed neurological damage, and esophageal fistula, occurred in the two groups. Conclusion
Outpatient surgery mode can significantly shorten the postoperative hospital stay, reduce hospital expenses, and improve the patients' medical experience. The key points of the outpatient mode of anterior cervical surgery are minimizing damage, complete hemostasis, no drainage placement, and fine perioperative management.

"Transverse Colon Malignancy presenting as Septic Arthritis of the Knee : A Rare Presentation"

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Objectives: The aim of this case study is to examine a rare instance of transverse colon cancer that presented as septic arthritis of knee. This case study emphasizes the significance of a thorough diagnostic process in cases of joint presentations. Methods: The study focused on the use of clinical examination, laboratory tests, knee aspiration, imaging studies, and colonoscopy to establish the diagnosis and guide treatment decisions. The study highlighted the importance of collaborative decision-making by multidisciplinary team. Results: Initial assessment revealed acute left knee pain and swelling in a 78-year-old male with a history of left knee replacement. Clinical suspicion of septic arthritis was confirmed by elevated inflammatory markers and knee aspiration growing Streptococcus Gallolyticus. Intraoperative findings during knee arthrotomy revealed ruptured patella tendon. Given the association of Streptococcus Gallolyticus with Colon Cancer, further investigations were done. CT Chest Abdomen Pelvis revealed transverse colon malignancy, subsequently confirmed by colonoscopy. Multidisciplinary consultation guided the decision for hemicolectomy for definitive treatment of the malignancy. The decision was made to proceed with arthrodesis of the left knee after resolving the underlying systemic disease. Conclusion: This case highlights the challenges of diagnosing systemic diseases that manifest with unusual joint symptoms. The timely recognition of the association between Streptococcus Gallolyticus and Transverse Colon Malignancy, facilitated by comprehensive imaging and multidisciplinary collaboration, led to the successful diagnosis and management of transverse colon malignancy in this patient presenting with septic arthritis of the knee.

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Clinical audit on timing of cast removal and radiation exposure for non-operative management of distal radius fractures as per British Orthopaedic Association Standards for Trauma (BOAST) guidelines: A closed loop Audit

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Backgroung:The pilot audit aimed to assess local compliance with the British Orthopaedic Association Standards for Trauma (BOAST) guidelines regarding plaster cast removal and radiograph utilization in conservatively managed distal radius fracture (DRF) patients.The BOAST guidelines recommend that the cast can be safely removed after four weeks of application, and a radiograph of the wrist at the time of cast removal is not necessary unless there are clinical concerns.Materials, Methods & results:The retrospective first cycle, conducted from February to April 2023, highlighted deviations from the guidelines, with only 20.22% of patients undergoing cast removal at the recommended four-week mark. The majority (59.5%) had their casts removed at six weeks, exceeding the guideline-recommended timeframe. Additionally, a substantial proportion (77%) underwent post-removal radiographs without documented clinical indications, leading to no changes in management plans.Following an educational intervention, the second audit cycle, conducted from July to September 2023, demonstrated some improvement, with 52.67% of patients receiving timely cast removal. However, inappropriate radiograph utilization persisted, with 48.2% of patients undergoing radiographs without documented indications. Conclusion:The study underscores the need for enhanced adherence to BOAST guidelines in the management of conservatively managed DRF patients.Improving compliance with recommended cast removal timing and reducing unnecessary radiographs can enhance patient care quality and optimize resource utilization.Continued education and implementation of best practices are essential to enhance the quality of care provided to DRF patients and promote optimal outcomes.

How Many Elbows Have Symptoms, Synovitis, or Joint Destruction in the Elbow Joint in the Current Status of Rheumatoid Arthritis?

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We aimed to investigate how many elbows are patient-reportedly disabled, radiographically destructed and ultrasonographically inflamed in patients with rheumatoid arthritis (RA) in the current medical status. We collected data on patient self-assessment, as well as radiographic and ultrasonographic (US) assessments of the elbow, with the aim of investigating the associations between US-detected synovitis (gray scale; GS, and power doppler; PD), joint destruction (Larsen grade), and patient-reported outcomes (PREE), especially in the elbow. A total of 548 RA patients were recruited and analyzed. The mean age was 63.7 years. The means of ROM of the elbow and grip strength of the right side were 130 and 17.6 kg, respectively. The median of the PREE was 6.0 in the right side and 5.7 in the left side. The percentages of Larsen grade 2 or more was 31.4%. The percentage of GS grade 2 or more, and PD grade 2 or more were 9.4% and 0.4% in the humeroradial joint, and 8.0% and 2.2% in the humeroulnar joint, respectively. GS and PD grades were strongly associated with elbow pain (t values; 7.79 in GS grade and 4.12 in PD grade). Larsen and GS grades were strongly associated with PREE (t values; 7.53 and 7.17, respectively). Grip strength and ROM of the elbow were negatively associated with PREE (t values; -11.5 and -7.36, respectively). Radiographic joint destruction, US-detected synovitis, grip strength and ROM of the elbow are strongly associated with patient reported outcome of the elbow.

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Percutaneous scaphoid screwing under WALANT : technical note

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Introduction: Scaphoid fractures occur in young patients. Surgical treatment is an effective technique to reduce the complications related to complications. We are reporting surgical treatment using percutaneous scaphoid screwing fractures under WALANT technique. Methods: The Wide Awake Local Anesthesia No Tourniquet (WALANT) technique was performed using 10cc Lidocaine (10mg/mL) Adrenaline (0.005 mg/mL) diluted with 9cc saline solution and 1cc Sodium bicarbonate 10mL, all in 20 cc syringe. A 27 gauge needle was used for cutaneous injection. Median, ulnar and radial blocks of the wrist were performed, 5 mL each. Xylocaine 2% was used for intra articular injection diluted with 9cc saline solution. Results : We report two cases of percutaneous scaphoid screwing under Walant. Both patients presented with a wrist trauma occurring after a road traffic accident. Xray showed a non displaced scaphoid waist fracture. Patients were operated on using a volar incision. We used a retrograde screwing.The insertion point of the K-wire was located using Fluoroscopie. Cannulated headless (Herbert) screw of 2.5 mm were inserted. The mean operative time was 40 minutes. The active mobility of the thumb was obtained peroperatively. We prescribed a 6-week immobilization using a removal wrist splint for both patients. Conclusion : Percutaneous scaphoid screwing under Walant technique offers a better functional result : short immobilization and preserves local vascularity. It is a safe and cost-effective technique. The procedure must be explained to the patient and it is used for non/minimally displaced fractures of scaphoid waist of less than 2 mm.

Efficacy of modified kidner procedure combined with subtalar arthroereisis treating adolescent type 2 painful accessory navicular with flexible flatfoot

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Purpose:To investigate the clinical efficacy of modified kidner procedure combined with subtalar arthroereisis in the treatment of adolescent type II painful accessory navicular with flexible flatfoot.
Methods:From January 2018 to January 2022,25 adolescent patients with painful type II accessory navicular and flexible flatfoot admitted to our hospital were enrolled in the study.All patients underwent modified kidner procedure combined with subtalar joint arthrodesis.The Meary Angle,APTMT,the second metatarsal Angle of talus,Pitch Angle, talus tilt Angle,TCA,LTCA,and calcaneal Angle were measured on weight bearing anteroposterior and lateral x-ray films before operation and at last follow-up.AOFAS score and VAS were used to evaluate the improvement of foot function and pain.
Results:All patients were followed up for average 17.4±2.6 months.There was no screw withdrawal or secondary operation to remove the screw in all patients.At the last follow-up, the postoperative visual analogue scale (VAS) score of the affected foot was significantly lower than that before operation, and AOFAS score was significantly higher than that before operation.At the last follow-up,the weight bearing anteroposterior and lateral foot x ray films showed that:The Meary Angle,APTMT,the second metatarsal Angle of the talus,Pitch Angle,talar tilt Angle,TCA,LTCA,and calcaneal Angle significantly improved when compared with those before operation.
Conclusions:The modified kidner procedure combinedwith subtalar arthroereisis has a good clinical effect in the treatment of adolescent type II painful accessory navicular with flexible flatfoot,which can effectively improve the pain symptoms,improve the foot function and imaging manifestations, and correct the flatfoot deformity.

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