

P01

SELECTION OF LOWEST INSTRUMENTED VERTEBRA USING FULCRUM BENDING RADIOGRAPHS ACHIEVED SHORTER FUSION SAFELY COMPARED WITH THE LAST "SUBSTANTIALLY" TOUCHING VERTEBRA IN LENKE TYPE 1A AND 2A CURVES

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P02

MINIMALLY INVASIVE SURGERY (MIS) WITH COMPUTER NAVIGATION GUIDANCE CURETTAGE OF OSTEIOD OSTEOMA IN HUMERUS

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Introduction: Intra-operative localization of osteoid osteoma is always a challenge to orthopaedic surgeons. In this report, we describe the excision of osteoid osteoma in humerus, with the assistance from an image-guided 3D-navigation system intra-operatively.

Methodology: Patient presented with right shoulder pain for 4 years. Plain radiographs, CT and MR images suggested intramedullary osteoid osteoma at the proximal 1/3 humerus. CT and MR images in DICOM format were co-registered in a CT-based navigation system (OrthoMap 3D, Stryker). Intra-operatively, a patient tracker was first placed at the proximal humerus and 3D fluoroscopic images were acquired into the navigation system. The intraoperative 3D fluoroscopic images of the distal humerus were co-registered with the preoperative CT images with more accurate contouring. Under the navigation guidance with reference to CT images, a skin incision was first made accurately at the level of the osteoid osteoma. The overlying cortex was removed by a high speed burr. The osteoid osteoma was then localized and curetted with tissue for histology. The adequacy of bony lesion clearance could be confirmed with the navigation. There were no complications reported. Histology confirmed osteoid osteoma.

Discussion and Conclusion: Conventionally, we may need a longer skin incision and sacrifice excessive normal adjacent bone in order to correctly and adequately remove osteoid osteoma. Risk of subsequent fracture and prophylactic fixation might even be required. The above described method allows accurate osteoid osteoma localization with a minimally invasive approach when compared to the conventional open excision.

P03

NEUROPATHIC DERMATITIS : CASE SERIES OF A NEWLY IDENTIFIED DERMATOLOGICAL COMPLICATION AFTER TOTAL KNEE ARTHROPLASTY

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Introduction: Development of skin lesion after TKA is an uncommon yet disturbing phenomenon, and rarely studied in literature. We described a case series of a newly identified dermatological complication after TKA.

Methodology: During a 1-year period, patient who developed skin lesion after TKA is identified and their history and nature of the skin lesion were studied.

Results and Analysis: A total of 21 cases were identified in the study period. All presented with eruption exclusively at the site of surgical excision and nearby skin. Appearance of the lesion range from multiple patchy areas of eczematous rash to large area of scaly plaque or pigmentation. Most lesion developed at around 3 months postop. All patients had normal perioperative course and there was no history of allergy nor topical medication use. While a few eczematous lesion improved after steroid therapy, most lesion persisted as chronic lesion.

Discussion and Conclusion: The underlying pathogenesis of this lesion is likely contributed by denervation injury due to transection of infrapatellar branch of saphenous nerve, which leads to hypoesthesia and cutaneous eruption due to dysfunction of normal skin barrier homeostasis. This group of dermatitis is incorporated under the newly defined clinical entity known as neuropathic dermatitis or autonomic denervation dermatitis, with estimated prevalence around 3.1% from this study. Surgeon should recognize this potential complication and patient adequately counseled about the chronicity of this lesion.

P04

AN ALTERNATIVE MANAGEMENT OF VENOUS CONGESTION IN FINGER REPLANTATIONS AND FLAPS

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Introduction: Venous congestion remains to be a major factor in causing digit replantation and flap failures. The established solutions are: use of medical leech, local application of heparin gauze, continuous nail bed massage in digit replantation and re-exploration of free flaps. However, each method has its drawbacks. We propose the use of negative pressure wound therapy in order to promote continuous bleeding from the venules of the applied area, resulting in the relief of congestion.

Methodology: 3 replanted fingers and 2 fascio-cutaneous flaps were put under negative pressure wound therapy after development of venous congestion.

Results and Analysis: All replanted finger and flap survived with at least 5 days of negative pressure therapy. One of the free flap was subsequently complicated with wound infection. Additional operation of wound debridement was needed at 2 weeks post flap coverage. Subsequently, 70% of the flap survived. No additional surgery was needed for the remaining 4 cases.

Discussion and Conclusion: Negative pressure therapy shows promising result in treating venous congestion in flaps and replanted fingers. It enables the survival of flaps and replanted fingers without additional surgery.

Electronic Poster Session

P05

HEALTH-RELATED QUALITY OF LIFE (HRQOL) OF ADOLESCENT IDIOPATHIC SCOLIOSIS (AIS) PATIENTS SINCE BRACING TO 30 YEARS AFTER SURGERY USING SRS-22 QUESTIONNAIRE ONLINE

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Introduction: Previous studies using SRS-22 targeted for just specific groups of patients within specific periods during treatment limited the data generalizability and representativeness, particularly describing the HRQoL profile from bracing to many years after surgery. The aim of this study is to evaluate the quality of life of patients from bracing to 30 years after surgery.

Methodology: Patients since started bracing until any years after surgery were recruited at scoliosis out-patient clinic at PWH, and surgical cases at hospital wards were also recruited. Mobile device friendly cloud-based SRS-22 questionnaire was filled out. The domain scores on the patients since bracing until 30 years after surgery were compared. Sub-group analyses on just bracing patients and post-op patients were also carried out.

Results and Analysis: 705 patients in 946 clinic visits were recruited, of which 646(67.4%) visits were under bracing, and 32.6% were post-op visits. Mean "Function" scores changed from 4.79(start bracing), 4.45(bracing), 4.77(weaning), 4.40(pre-op), to 4.19(post-op). Similar pattern was observed in "Pain", "Self-image", and "Mental health. Considering patients under bracing, "Self-image" scores were 3.62(≤ 0.5 year of bracing), 3.52(0.5-1years), 3.60(1-1.5years), 3.20(1.5-2years), 3.33(2-2.5years), 3.63(2.5-3years), and 3.40(> 3 years)($p < 0.01$). Self-image" in post-op patients were from 3.74 ≤ 1 year), 4.4(5th-6th year), 3.32(10th-15th year), 2.33(20th-25th year), and 2.75(25th-30th)($p < 0.01$).

Discussion and Conclusion: This is the first report to describe SRS-22 domain scores from early stage of treatment to 30 years after surgery. Domain scores were lowered when patients were under bracing, and returned to initial values. Scores were plumbed before surgery and recovered after surgery. Body function, self-image, mental health, and satisfaction were recovered 1.5 years after surgery.

P06

RISK FACTORS ASSOCIATED WITH PLANTAR FASCIITIS IN DISTANCE RUNNERS: A SYSTEMATIC REVIEW

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Introduction: Distance Running has become a popular form of exercise for health benefits and the ease of access in a variety of locations. Unfortunately, the reported annual risk of injury running-related overuse injury is as high as 79%. Plantar fasciitis is one of the most common overuse injury in runners, however, the aetiology is poorly understood. The purpose of this review is to evaluate the literature investigating risk factors associated with plantar fasciitis (PF) in the running population.

Methodology: A systematic search was performed using Medline, CINAHL, Embase, Science Direct, Ovid and SportDiscus and the reference lists of key articles in June 2018. Search results were assessed by two independent reviewers according to the pre-determined selection criteria. The methodological quality was assessed using the modified Downs and Black checklist.

Results and Analysis: Of 129 relevant studies, a total of 8 articles were included in the final analysis. Based on the modified Downs and Black Checklist, the median methodological quality of all studies was 11.8 (range from 7-15). A lower medial longitudinal arch of the foot, smaller intrinsic foot muscle volumes in the rearfoot region, and greater vertical ground reaction force during running were found to have some association with plantar fasciitis in runners. Rearfoot alignment were not associated with plantar fasciitis, while evidence for the ankle range of motion is conflicting.

Discussion and Conclusion: This systematic review identified very limited evidence that a lower medial longitudinal arch of the foot, smaller intrinsic foot muscle volumes in the rearfoot region, and greater vertical ground reaction force during running are the risk factors in the running population. Further investigation are warranted in future studies.

P07

THE CURRENT KNOWLEDGE AND ACCEPTANCE OF SAME STAGE BILATERAL KNEE REPLACEMENT AMONG PROSPECTIVE JOINT REPLACEMENT CANDIDATES IN A HONG KONG LOCAL JOINT CENTRE

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P08

SYSTEMATIC REVIEW OF THE EFFECTIVENESS OF MOXIBUSTION OVER CHRONIC LOW BACK PAIN

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Introduction: In Chinese medicine philosophy, moxibustion can promote qi circulation and eliminate the wind, dampness and cold in treating Low Back Pain. The objective of this study is to evaluate the effectiveness of moxibustion over chronic low back pain in adjunct of other conventional treatment.

Methodology: Searches were conducted in EMBASE, ScienceDirect, China Journal Net, the Cochrane Controlled Trials, the Cochrane Library, Pubmed, the Wanfang Database, KoreaMed and The Chinese University of Hong Kong Library Database. Searching words included moxibustion, low back pain, warm needle, moxa\$, moxi\$, 灸, 艾, 慢性腰痛, 腰痛, 溫針 and MeSH term including Moxibustion/therapeutic use. A rating scale named PEDro scale was used to assess the quality of the studies. Total 6 randomized control trials were shortlisted in this systematic review.

Results and Analysis: Two studies indicated that the combination of moxibustion with conventional treatment provided additional pain relief and functional recovery. Two studies showed conflicting evidence in supporting moxibustion over infra-red or electric thermal Bian-stone in terms of pain relief effect. One study found that large area moxibustion was better in pain relief than moxibustion over local acupoints. One study found that long heating time with 60 minutes moxibustion was better than 15 or 30 minutes moxibustion.

Discussion and Conclusion: Longer treatment follow-up is needed to evaluate the maintenance effects of moxibustion. Assessor blinding is suggested to improve internal validity. More studies are needed to improve the power of systematic review.

P09

MINIMALLY INVASIVE SURGERY IN TOPHACEOUS GOUT: A CASE SERIES

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Introduction: Gout is a metabolic disease associated with hyperuricemia and chronic inflammation against the urate crystal may lead to tophus formation. For patients who do not tolerate anti-hyperuricemics or already present with complications, surgical management may be a more effective treatment option. Minimally invasive resection of gouty tophi has been described previously and overall results showed positive outcomes with low complication rate. However, there was only limited evidence about the recurrence rate and functional recovery in long term follow up.

Methodology: A prospective non randomized case series on minimally invasive surgery for tophaceous gout was conducted. Four patients with symptomatic or complicated gouty tophi over upper (1) or lower limbs (3) were treated with endoscopic resection of tophus. Mini-incision technique and endoscopic shaving of tophaceous deposits was performed together with continuous saline irrigation and suction. Wound healing and functions of the affected limb were reviewed during early postoperative period and subsequent follow up.

Results and Analysis: Endoscopic resection of tophus was performed in 4 patients including three 1st metatarsophalangeal joint, one 4th toe dorsum, one prepatellar bursa and one olecranon bursa. No major complications were reported except one patient required repeated debridement for infected left prepatellar bursa tophus presented on admission. No recurrent gouty attack was noted and patient's satisfaction on symptom control and cosmetic outcome were promising.

Discussion and Conclusion: Symptomatic or complicated gouty tophi are clinical challenge and minimally invasive surgery offered a safe and effective management in these patient group.

P10

BREAKING DOWN WORK SILOS BETWEEN HOSPITAL AND COMMUNITY MEDICAL SOCIAL COLLABORATION FOR MANAGEMENT OF WORK RELATED LOW BACK PAIN

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P11

REVIEW ON EPICONDYLAR OSTEOTOMY FOR COLLATERAL LIGAMENT ADVANCEMENT IN CHALLENGING CASES OF LIGAMENT INSUFFICIENCY IN TOTAL KNEE ARTHROPLASTY, EXPERIENCE FROM ALICE HO MIU LING NETHERSOLE HOSPITAL

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Introduction: Ligament insufficiency is common in cases of severe coronal plane deformity. Total knee arthroplasty (TKA) in these knees are challenging. Besides restoring normal mechanical alignment, it is important to achieve ligament balance for good outcome. In epicondylar osteotomy, the collateral ligament is detached from its origin with a chip of bone, and moves either proximally or distally to adjust the ligament tension. In this case series, we highlight the indications and clinical outcomes of femoral epicondylar osteotomy.

Methodology: From 2016 to 2017, 597 knee replacement surgeries were performed in AHNH. There were five knees in four patients in whom ligament advancement was done for ligament insufficiency. The incidence was 0.83%.

Results and Analysis: The mean age of patients were 65. There were 1 male and 3 females; 4 primary and 1 revision TKA; 3 varus and 2 valgus knees. There were marked improvement of knee function after surgery. The mean operation time was 3 hours and 57 minutes. 1 patient required blood transfusion after operation. 1 patient suffered from superficial skin necrosis, requiring debridement under local anaesthesia.

Discussion and Conclusion: Ligament balance is important to optimise knee kinematics. Collateral ligaments are stretched and attenuated in patients with severe coronal plane deformity. There is no consensus on management of excessive collateral laxity. Our results show that with proper surgical technique, ligament advancement to address instability during TKA gives good clinical results.

P12

BOOST UP SAME DAY ADMISSION - SIMPLE YET IMPORTANT STEP FOR FAST TRACK JOINT REPLACEMENT IN HONG KONG

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Introduction: Length of stay (LOS) is an important key performance index in joint replacement centre. Significant emphasis was placed in accelerate rehabilitation, but a simple way to improve LOS is to increase same day admission (SDA) rate. After establishment of joint centre in Alice Ho Miu Ling Nethersole hospital in 2015, serial changes were adopted with collaboration with Prince of Wales Hospital to improve SDA.

Methodology: Strategies for SDA program included 1: Scheduled Pre-operative surgeon/anaesthetist combine clinic with standard protocol 2: Fast-track type-and-screen (T/S) for operation with low transfusion rate. 3: For operation with high transfusion rate, e.g. bilateral hip replacement, proper sequencing in the list or outpatient T/S program was employed. 4: Combined same-day outpatient T/S and list anaesthetist review. 5: Protocol-driven intensive care bed booking. The above program was gradually implemented since 2015. Same day admission rate was analysed retrospectively. All the data were collected from CDARS and local joint registry database.

Results and Analysis: After implementation of the program, SDA rate improved dramatically to more than 85% for elective primary knee and hip replacement.

Discussion and Conclusion: Boost up SDA is effective in reducing LOS. Redundant pre-admission can be avoided. With well-designed protocol and effective communication between different departments, LOS was significantly reduced.

P13

GUT MICROBIOTA CHARACTERISTICS IN DIFFERENT STAGE OF KNEE OSTEOARTHRITIS IN SOUTHERN CHINESE

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Introduction: New evidence suggests that the gut microbiota lead to systemic inflammation, represent a possible mechanistic link to metabolically induced osteoarthritis. Our objective is to evaluate gut microbiota characteristics in different stage of knee osteoarthritis (KOA) in southern Chinese.

Methodology: 60 OA patients and 30 healthy people (H group) were enrolled. OA patients were divided into two subgroups, severe OA group (Kellgren-Lawrence grading at 4, S group n=30), mild OA group (K-L grading at 2, M group n=30). The gut microbiota in different groups was confirmed by 16S bacterial RNA sequencing. To confirm both statistical and biological taxonomic differences between the gut microbiota of OA patients and healthy people, the LEfSe algorithm with a logarithmic LDA score cutoff ≥ 2.0 was performed.

Results and Analysis: Alpha diversity analysis showed that the stool microbiota of OA patients was less diverse than H group (Simpson Index of Diversity). In subgroup, the stool microbiota of M group was the same diverse compared to H group, S group much less. At the family and genus level, OA patients had increased abundance of Stenotrophomonas, Xanthomonadaceae, Moraxellaceae, Pseudomonadales, Acinetobacter, Xanthomonadales, Sphingomonas, Caulobacteriales, Caulobacteraceae. The S group was enriched with Stenotrophomonas, Xanthomonadaceae, Actinomycetaceae, Actinomyces.

Discussion and Conclusion: OA patients have less gut microbiota diversities compared to healthy peoples. Further research on increased abundance gut microbiota detected in severe OA patients may potentially demonstrating related mechanism between gut microbiota and OA.

P14

ADVERSE REACTION TO METAL DEBRIS FOLLOWING MODULAR NECK STEM METAL-ON-METAL TOTAL HIP ARTHROPLASTY ACCOMPANIED BY PELVIC FRACTURE: A CASE REPORT

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Introduction: A 70-year-old woman underwent uncomplicated THA using a titanium modular stem with a 46mm CoCr femoral head, a titanium shell, and a metal liner (Wright Medical Technology). Eight years after implantation, she presented with a painful left hip.

Methodology: CT scanning confirmed the presence of a 5x5cm soft tissue mass in the ilium above the cup component accompanied by the iliac fracture. The patient was diagnosed as having an adverse reaction to metal debris (ARMD) after a MoM THA and revision was performed.

Results and Analysis: Perioperatively, tissue necrosis and partial destruction of the abductor mechanism were found. Both the neck trunnion and bore of the head showed slight signs of corrosion. The modular neck was revised with a ceramic 28mm head and a new dual-mobility liner (Zimmer Biomet). The iliac fracture was fixed with a porous trabecular metal augment.

The histopathology of tissue samples revealed extensively necrotic material with focal cellular areas of inflammatory cells containing macrophages and neutrophils. Metallic debris was also scattered in the necrotic material. After the revision, the patient was recovered without pain or dislocation, and iliac fracture was well fixed.

Discussion and Conclusion: Instability is a substantial problem in the revision of ARMD. Extensive necrosis with gross deficiency of the abductor mechanism is associated with postoperative dislocation. Revision of failed MoM THA using a dual-mobility device is an effective strategy.

P15

THE BREAKAGE OF VOLAR LOCKING PLATE SYSTEM FOR DISTAL RADIUS FRACTURES

~WHAT IS THE CAUSE?~

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Introduction: Open reduction and internal fixation using the volar locking plate is the primary surgical treatment option for distal radius fractures. Implant breakage following this procedure had been reported as a rare complication, however, the cause remained unclear. Thus, we aimed to elucidate the cause of implant breakage and as well as measures for its prevention.

Methodology: We experienced the implant breakage in 3 wrists of 40 wrists who had underwent surgery using the plate system during 1-year period. Medical data of patients without and with implant breakage were compared using the Mann-Whitney and χ^2 test.

Results and Analysis: Breakage of distal locking screw and plate was occurred at the locking head-shaft junction and at an unused proximal row screw hole for distal locking screws, respectively. Any significant implant fixation factor associated with plate breakage was not identified. On the other hand, an absence of a distal locking screw aiming at the radial styloid and plate fixation with a gap formation of 2 mm or greater from the volar surface of the distal radius were significantly associated with breakage of distal locking screws.

Discussion and Conclusion: We identify significantly factors for the breakage of distal locking screws. Our results suggest that plate fixation with sufficient contact of plate with the volar cortical surface of the distal radius and distal locking screws directed at the radial styloid may prevent the breakage of the distal locking screws.

P16

RECURRENT ROTATORY TOTAL KNEE ARTHROPLASTY(TKA) DISLOCATION IN A CVA PATIENT WITH OBLIGATORY HIP EXTERNAL ROTATION - A CASE REPORT

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Introduction: Dislocation of TKA implants is a rare complication, estimated up to 0.5% in posterior stabilized designs. Dissociation between polyethylene insert and tibial baseplate are particularly rare.

A 66-year-old lady with history of right hemiparesis, received right posterior stabilized TKA in 2014. She was able to walk independently with frame in the first 2 years. Subsequently there were three episodes of non-traumatic antero-medial dislocation of polyethylene insert, with fracture of medial locking wire from standing to sitting position in 2016, 2017 and 2018. In the first revision, exchange of insert was performed. The second revision was performed by exchange to constrained polyethylene liner. Postoperative computed tomography showed excessive external rotation of right hip. It was postulated that the underlying CVA contributes to the abnormal hip position. Closed-chain knee flexion exaggerates abnormal femur external rotation, causing anterior-directed force over medial polyethylene post, resulting in failure of medial locking wire and recurrent polyethylene dislocation. In the third revision, TKA revision to mobile bearing rotating platform hinged type implant was performed. At post-operative 3 months, patient is able to walk with frame with no knee instability.

Discussion and Conclusion: This case illustrates the importance of assessing lower limb rotatory alignment and dynamics before TKA especially in those with pre-existing neuromuscular condition. As traditional TKA has limited tolerance to rotatory stress, the use of mobile bearing rotating platforms may be necessary for abnormal knee rotatory dynamics.

BIOMECHANICAL RISKS OF KNEE INJURY IN MIXED MARTIAL ARTS: A VIDEO ANALYSIS

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Introduction: Incidence rate of knee injury in MMA is high. It is because MMA is a high-intensity sport that requires constant angle and level change. Majority of the combined movements overlap with biomechanics that have been proven to be associated with increased injury risk. This study aims to identify the frequency of occurrence of the researched high-risk movements during MMA competitions.

Methodology: The study analysed athletes' movements in 29 MMA fights. It focused on documenting all visible high-risk knee injury movements occurred in the fights. The analysed movements have been separated into two categories, "Gross Biomechanical Risks" and "Detailed Biomechanical Risks". High-intensity movements were analysed in slow motion to ensure accuracy. Three fights were re-watched after all 29 fights as quality control to access the reliability of measurement

Results and Analysis: The research suggested Knee Valgus Motion is the most common high-risk movement. On average, a fighter experience 31 times of knee valgus motion with explosive force. The side affected is highly subjective to the stance of the fighter. The rear leg is most likely to go through knee valgus motion.

Discussion and Conclusion: Research showed high-risk knee motions are common in MMA. Based on the data, knee valgus on the rear leg is of interest for future injury prevention focus. The data collected in this study can be used as the backbone for further investigation on the possible ways in knee injury prevention.