7 minute Presentation & 3 minute Discussion

1. **11.30** A report of 8 cases of polyethylene spinout/dislocation in the ATTUNE mobile-bearing rotating-platform total knee arthroplasty
   
   **Cillian John Keogh**, James Hepburn, James Harty, Declan Reidy, Darren Moloney, David Mulcahy  
   Department of Trauma & Orthopaedic Surgery, Cork University Hospital, Wilton, Cork, Republic of Ireland

2. **11.40** Surgeons’ and anaesthetists’ knowledge of direct oral anti-coagulants in trauma
   
   **Geoff Crozier Shaw**, John Gibbons, Paddy Kenny, Olivia Flannery, Peter Keogh  
   Department of Trauma and Orthopaedics, Connolly Hospital, Blanchardstown, Dublin 15, Ireland

3. **11.50** Do British randomised controlled trials influence Irish clinical practice?
   
   **Rosie McColgan**, David Michael Dalton, Adrian Jesmond Cassar-Gheiti, Michael Edmond O´Sullivan  
   Department of Orthopaedics, University Hospital Galway, Galway, Ireland

4. **12.00** Ladder injuries presenting to a major trauma centre
   
   **Caroline Frances Clifford**, Colm Taylor  
   Department of Orthopaedic Surgery, Cork University Hospital, Wilton, Cork, Ireland

5. **12.10** Platelet-rich plasma injections in hip osteoarthritis: A review
   
   **Dr Paul McCarroll**¹, Mark James Berney², Liam Glynn¹, Brian Lenehan¹³  
   ¹Department of Orthopaedics, University Hospital Limerick, St Nessa’s Road, Dooradoyle, Limerick, V94 YVHO, Ireland  
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   ³Graduate Entry Medical School, University of Limerick, Castletroy, Limerick, Ireland

6. **12.20** Comparison of functional outcomes of the ATTUNE total knee arthroplasty system versus its five closest competitors
   
   **Darren Patrick Moloney**, Cillian Keogh, James Harty  
   Department of Trauma & Orthopaedics, Cork University Hospital, Wilton Road, Wilton, Cork, Ireland

7. **12.30** Negative pressure wound therapy versus conventional wound dressings in total hip and total knee arthroplasty – A systematic review of the literature
   
   **Ara Francis**, Geoffrey Crozier Shaw, Eanna Ryan, Patrick Kenny  
   Dept of Trauma & Orthopaedics, Connolly Hospital, Blanchardstown, Dublin 15, Ireland

8. **12.40** A comparison functional outcomes after total knee arthroplasty with the attune knee prosthesis and its predecessor matched for surgeon, surgical technique
   
   **Darren Moloney**, Cillian John Keogh¹, Emma O’Shea², James Harty³  
   ¹Trauma and Orthopaedics, Cork University Hospital, Wilton, Cork, Ireland  
   ²School of Nursing and Midwifery, Dublin City University, Glasnevin, Dublin 9, Ireland

9. **12.50** Bone cement implant syndrome awareness
   
   **Orna Ní Bhroin**, Colin Murphy  
   Department of Orthopaedics, Galway University Hospital, Newcastle Road, Galway, Ireland
AB138. 10. A report of 8 cases of polyethylene spinout/dislocation in the ATTUNE mobile-bearing rotating-platform total knee arthroplasty

Cillian John Keogh, James Hepburn, James Harty, Declan Reidy, Darren Moloney, David Mulcahy

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Background: The low contact stress (LCS) mobile bearing (MB) rotating platform (RP) knee system has an excellent clinical track record and proven survivorship. The advantage of RP knees is that the bearing can rotate as the knee flexes, this allows for a more natural motion and may reduce the stress and wear on the implant. The Attune MB RP knee system was designed to provide better range of motion and address the unstable feeling some patients experience during everyday activities, such as stair descent and bending. Spinout/dislocation is a known complication of MB RP total knee arthroplasty (TKA). Aim: To discuss the aetiology, prevention, incidence, and possible risk factors for spinout in Attune knee.

Methods: A retrospective multicenter review of 8 cases of spinout/dislocation in the Attune TKA system. A radiological review comparing pre and post-operative AP and lateral knee X-rays.

Results: Patient factors associated with spinout included female sex (75%) (male-to-female ratio, 1:3) and obesity (50%). The mean age at time of TKA for spinout patients was 69.6 (range, 53–84) years. Spinout was associated with the valgus knee (62.5%) and most occurred within the first month. In 5 (62.5%) patients the direction of spinout was posterolateral. Mean posterior slope angle (PSA) was 7.375° preoperatively and 7.25° postoperatively. The mean posterior condylar offset (PCO) was 27.25 mm preoperatively and 28 mm postoperatively.

Conclusions: The surgical technique used for LCS knee when applied to Attune could potentially lead to spinout/dislocation problem. Post-operative XRs confirmed that the knees were loose in extension leading to posterior spinout/dislocation.

Keywords: Attune; total; knee; arthroplasty

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AB139. 204. Surgeons’ and anaesthetists’ knowledge of direct oral anti-coagulants in trauma

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Background: Direct oral anti-coagulants (DOACs) have changed the management of patients with atrial fibrillation and venous thrombo-embolic disease. The directly anti-coagulated trauma patient presents a challenge to orthopaedic surgeon, which is a common cause of delay to theatre. We aimed to review the literature on perioperative management of DOAC and audit the knowledge of surgeons and anaesthetists using this up-to-date data.

Methods: PubMed central was searched for articles on perioperative DOAC management. Papers included were reviewed and guidelines for management noted. A questionnaire was distributed to surgeons and anaesthetists and data analysed.

Results: Fifty (n=50) responded to the survey. Respondents included consultant anaesthetists, consultant surgeons, surgical and anaesthetic registrars and senior house officers. Respondents typically encountered DOACs on a weekly basis, and knowledge of basic pharmacology and perioperative safety was sufficient across all subgroups. Five respondents (n=5, 10%) were aware of the emergency reversal agents for direct thrombin inhibitors and the novel emergency reversal agent for factor Xa inhibitors (still undergoing phase three clinical trials).

Conclusions: DOACs present challenges to surgeons and anaesthetists in the management of trauma. Knowledge of DOAC pharmacology is sufficient. There is a notable gap in relation to knowledge on reversal agents; Idarucizumab is licenced for urgent reversal of direct thrombin inhibitors such as Dabigatran. Andanexet alfa is currently undergoing promising phase three clinical trials for reversal of factor Xa inhibitors such as Rivaroxaban and Apixaban. We aim to organise local education sessions with Haematology specialists and re-audit our respondents.

Keywords: Anticoagulation; hip fractures; orthopaedics; trauma

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AB140. 6. Do British randomised controlled trials influence Irish clinical practice?

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Background: The Distal Radius Acute Fracture Fixation Trial (DRAFFT) was a randomised controlled trial performed in the United Kingdom (UK). The authors concluded that there was no difference between locking plate versus Kirschner-wire (k-wire) fixation in fractures of the distal radius. This trial had a significant impact on clinical practice in the UK. The number of patients treated with plate fixation fell from 75% to 48% before and after publication of the trial. The number of patients treated with k-wire fixation rose from 12% to 42%. Our aim was to assess whether DRAFFT affected clinical practice in Ireland.

Methods: Data was obtained from the Hospital Inpatient Enquiry system (HIPE). It was grouped into annual intervals from 2012 until 2017. All in-patient episodes involving emergency surgery for fractures of the distal radius were included.

Results: In 2012, before publication of DRAFFT, 38% of patients in Ireland were treated with plate fixation versus 49% with k-wire fixation. In 2017, after publication of DRAFFT, the proportion of patients who underwent plate fixation rose to 62% with a concurrent fall in the number who underwent k-wire fixation to 30%.

Conclusions: It appears that surgeons in Ireland do not change their practice in response to randomised controlled trials performed in the UK. National randomised controlled trials performed in the UK have a significant impact on practice in the UK, however they do not appear to influence practice in similar international populations.

Keywords: Distal radius; Distal Radius Acute Fracture Fixation Trial (DRAFFT); evidence-based medicine; randomised controlled trial

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AB141. 99. Ladder injuries presenting to a major trauma centre

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Background: Ladders are present in most households, with users rarely considering the associated dangers. Unintentional falls are the leading cause of nonfatal injury in nearly all age groups, with ladders the tool most frequently involved. There is some data available on the demographic most associated with ladder falls, but little regarding the factors that influence the risk of a ladder fall.

Methods: This was a retrospective, cohort study involving adult patients referred to Cork University Hospital Fracture Clinic, following a ladder fall over a 12-month period. A questionnaire gathered data regarding demographics, ladder characteristics, and task details. Injury details were obtained from clinic records.

Results: Forty-five patients were included. On average, patients were predominantly male (86.7%), aged 52.36 years (±4.36), overweight (BMI 26.81), falling in domestic settings (64.4%). 53.3% were aged 46–65 years. The most common ladder types were step, straight, and extension (37.8%, 28.9%, and 22.2% respectively). Patients mostly injured their extremities (76.9%). 55.6% of injuries were upper body. About 24.4% of patients suffered vertebral injuries, predominantly lumbar (61.5%).

Conclusions: The highest risk group in ladder falls are middle-aged men, especially when overweight. People most frequently fell from step-ladders in domestic settings. Overall, injuries were mostly to the hand and wrist. Almost a quarter of injuries affected the vertebrae.

Keywords: Ladder falls; fracture; vertebral fracture

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AB142. 105. Platelet-rich plasma injections in hip osteoarthritis: a review

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Background: Osteoarthritis is a significant cause of chronic pain in the elderly population with hip osteoarthritis one of the main causes of functional disability and joint pain in adults older than 55 years. Intra-articular injections are commonly used to alleviate symptoms, with steroid and hyaluronic acid injections used most frequently. Recently, platelet rich plasma (PRP) injections have been introduced for treatment of osteoarthritis. PRP has previously been shown to be effective in the treatment of tendinopathies and muscle tears. The goal of this study is to assess its effectiveness in the management of hip osteoarthritis.

Methods: We performed a search of PubMed and Excerpta Medica database (EMBASE) for published randomised-controlled studies that assessed the effectiveness of PRP injections in the treatment of hip osteoarthritis, with a minimum follow up of six months. Primary outcome measures were Western Ontario and McMaster Universities Arthritis Index (WOMAC) and Visual Analogue Scale (VAS) scores.

Results: Five trials were identified with 185 patients undergoing treatment with ultrasound-guided intra-articular injections of PRP, compared to patients treated with hyaluronic acid alone (n=148) or hyaluronic acid combined with PRP (n=31) in one study. PRP was shown to improve patient outcome scores at follow up at 6 and 12 months compared to baseline, however there was no significant difference seen between patients treated with PRP or hyaluronic acid alone.

Conclusions: Platelet-rich plasma injections appear to offer a safe and effective treatment for hip osteoarthritis with improved patient outcomes up to 12 months following treatment.

Keywords: Arthritis; orthopaedic; osteoarthritis; platelet rich plasma (PRP)

doi: 10.21037/map.2019.AB142

AB143. 9. Comparison of functional outcomes of the ATTUNE total knee arthroplasty system versus its five closest competitors

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Background: Total knee arthroplasty (TKA) system success is guided by validated patient reported outcome measures (PROMs). It is essential to continually innovate TKA to ensure an excellence of care for the vast numbers of prospective patients. Techniques and implant designs have evolved as a result of the strong evidence behind them. The primary outcome of this study is to analyse differences in PROMs after TKA comparing the ATTUNE knee system to its 5 closest competitors. Secondary outcome measures were to analyse rates of venous thromboembolic events (VTE), periprosthetic infection (PJI) and noninfective reoperation rates.

Methods: This study is a multi-centre prospective comparative study across six common implant systems between the dates of May 2011 and July 2016. PROMs included 12 item Short Form health survey (SF-12) and knee specific scores included were the Oxford Knee Score (OKS) and the Knee injury and Osteoarthritis Outcome Severity Score (KOOS). Post-operatively scores were recorded at 6 weeks, 6 months to 1 year and 2 years.

Results: Over the 5-year period there were 1,737 TKAs performed on 1,475 patients. The Attune® prosthesis performed better than LCS® in KOOS at 6 months (P=0.006) (mean = 81.9 vs. 76.1). Attune® performed better than LCS® in KOOS at 2 years (P=0.002) (mean = 85.5 vs. 78.1). Attune® performed better than LCS® in OKS at 6 months (P=0.009) (mean = 38.2 vs. 32.4). The VTE rate was 1.76%, the PJI rate was 0.81% and the noninfective reoperation rate was 1.04%.

Conclusions: The Attune® performs superiorly in knee specific scoring at 6 months to 1 year and 2 years compared to LCS®. The Attune® prosthesis performs similarly to other implant designs at 2 years in both PROMs and side effect profile.

Keywords: Total knee arthroplasty (TKA); patient reported outcome measures; attune; low contact stress; triathlon; press fit condylar

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AB144. 228. Negative pressure wound therapy versus conventional wound dressings in total hip and total knee arthroplasty—a systematic review of the literature

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Background: Surgical site infections post hip and knee arthroplasty are relatively rare but can have potentially devastating complications such as progression to periprosthetic joint infection. This study aimed to compare Negative Pressure Wound Therapy versus Conventional Dry Dressings and their impact on surgical site infections using data from Randomised Controlled Trials only. Secondary aims evaluated the incidence of other wound complications e.g. blistering, readmission and reoperation

Methods: A systematic literature search was performed through PubMed/MEDLINE, Embase and the Cochrane Central Register of Clinical Trials to identify randomised controlled trials (RCTs) that compared patients getting NPWT versus Conventional Dry Dressings after undergoing total hip or knee arthroplasty. Data extraction was performed according to the guidelines and recommendations from the preferred reporting items for systematic reviews and meta-analyses checklist (PRISMA). The methodological quality of the included studies was assessed systemically (GRADE criteria) and a meta-analysis was conducted.

Results: After removal of duplicates and unsuitable studies—five RCTs were identified from 106 potential studies. The analysis included 1,073 patients of which 387 (36%) had NPWT. Overall, there was a significantly lower incidence of surgical site infections in those who had NPWT (RR 0.35; 95% CI: 0.17–0.75; P=0.006). Reoperation rates in the NPWT group were significantly lower (RR 0.38; 95% CI: 0.15–0.95; P=0.04) however there was no difference observed in other wound complication rates (RR 0.65; 95% CI: 0.19–2.22; P=0.49) and readmission to hospital (RR 0.89; 95% CI: 0.31–2.59; P=0.84).

Conclusions: This meta-analysis demonstrates that NPWT used after Total Hip and Knee Arthroplasty can reduce the incidence of surgical site infections and rate of reoperation. NPWT is also as safe to use as Conventional Dry Dressings with no difference seen in other wound complications.

Keywords: Arthroplasty; hip; knee; negative pressure; infection

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AB145. 1. A comparison functional outcomes after total knee arthroplasty with the attune knee prosthesis and its predecessor matched for surgeon, surgical technique

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Background: Total knee arthroplasty (TKA) success is guided by patient reported validated outcome measures (PROMs). Implant design is continually evolving. It is of utmost importance to study new designs to ensure an excellence of care for the forecasted increases in patients undergoing TKA.

Methods: This study is a multi-centre prospective comparative study. The study compares the Attune® knee prosthesis and its predecessor PFC®. This study focuses on operations performed by a single surgeon with a single surgical technique. The primary outcome of this study is to analyse differences in patient reported outcomes after total knee arthroplasty. Secondary outcome measures are to analyse rates of venous thromboembolic events (VTE), periprosthetic joint infection (PJI) and non-infective reoperation rate. Inclusion criteria were patients who had TKA between March 2011 and June 2016 performed by a single surgeon with posterior stabilised designs and concurrent patellar resurfacing. PROMs measures included SF-12 for general wellbeing and knee specific scores included were the OKS and KOOS. Data was prospectively recorded in a dedicated arthroplasty clinic pre-operatively. Post-operatively they filled out scores six months and two years.

Results: The Attune® prosthesis performed better than PFC® in KOOS at 6 months (mean =81.9 vs. 77.85, P=0.014). The Attune® prosthesis performed better than PFC® in KOOS at 2 years (mean =85.54 vs. 81.77, P=0.043). There were no significant differences in PROMs between designs at any time points otherwise. Over the 5-year period there were 773 TKAs performed on 703 patients. The infection rate was 0.8%, non-infective reoperation rate was 0.6% and there was 1.9% rate of thromboembolic events. There were no differences between rates of VTE or PJI between designs. There was a trend toward statistical significance linking the PFC prosthesis to non-infective reoperation rate (P=0.051).

Conclusions: The Attune® prosthesis performs superiorly to the PFC® in terms of knee specific scoring systems when matched for surgeon and surgical technique. There is a trend toward increased prosthesis malfunction with PFC® however further study is required to establish significance.

Keywords: Attune press fit condylar; patient reported validated outcome measures; total knee arthroplasty (TKA); total knee replacement (TKR); Oxford knee score (OKS); knee injury and osteoarthritis outcome score (KOOS)

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AB146. 238. Bone cement implant syndrome awareness

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Background: Bone cement implant syndrome (BCIS) is a risk for patients who undergo cemented hip arthroplasty, and its prevalence remains high, in particular for cemented hemiarthroplasty following neck of femur fracture. The establishment of a grading system for BCIS in 2009 allows for measurement and its use has demonstrated the severity of this syndrome and its implications for patients and surgical teams. The ability of the surgical and anesthetic team to manage this potentially fatal condition hinges on awareness and preparation. The goal of the study was to determine the levels of awareness of BCIS in a cohort of orthopaedic and anesthetic teams.

Methods: A survey was conducted which consisted of 10 questions, each aimed at determining the surgeons’ and anesthetists’ familiarity with BCIS its clinical management. 65 surveys were completed, with responders ranging from intern to consultant level. Results are presented as percentage of total cohort surveyed as well as percentage of subgroup surveyed (Intern, SHO, Registrar and Consultant).

Results: The results highlight a concerning disparity in awareness of the condition among trainees and consultants. All the consultants surveyed were aware of BCIS and reported previous first-hand experience with it. Many of the lower grades were much less aware both of the condition itself and of practical steps to manage the syndrome if encountered. For those who had patients who experienced BCIS following cemented hip arthroplasty, many remarked that there was significant morbidity frequently associated with its presentation in their experience. Those who reported a direct first-hand experience reported a significant morbidity associated with the syndrome.

Conclusions: This survey highlighted the need for increased formal training of Orthopaedic and Anaesthetic trainees with respect to the awareness and management of BCIS. Adequate training could reduce the frequently catastrophic patient outcomes associated with BCIS.

Keywords: Arthroplasty; orthopaedics; anaesthetics

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