Annual Scientific Meeting

Friday 7 August 2026

Kooyonga Golf Club

Program

AOA
AUSTRALIAN ORTHOPAEDIC ASSOCIATION

90TH ANNIVERSARY
CELEBRATING 90 YEARS
OF CLINICAL EXCELLENCE
AND GLOBAL ENGAGEMENT

9.00am	**Registration**	
TIME	**TITLE**	**PRESENTER**
9.40am	**Welcome to Scientific Meeting and Session 1**	
9.45am	Lumbar Foraminal Decompression Through Intrapedicular Partial Pedicle Resection: Surgical Technique and Clinical Results	Varman Gunasaegaram
9.55am	Long term Outcomes of Triple Arthrodesis in Children: A retrospective cohort trial	Tachelle Ting
10.05am	Estimated versus Actual Procedural Time in Elective Paediatric Orthopaedic Surgery: A 12-Month Audit.	Brayden Campbell
10.15am	Latissimus Dorsi muscle transfer for Subscapularis deficiency - case series in arthroplasty and rotator cuff failure.	Michael Sandow
10.30am	**Morning Tea**	
11.10am	**Welcome to Session 2**	
11.10am	Tibia Post Fractures in Posterior stabilized total knee arthroplasty: A retrospective database review	Tachelle Ting
11.20am	Hip fracture patients on Apixaban or Rivaroxaban. A prospective observational study to determine the effect of time to theatre and preoperative blood markers on bleeding.	Shoumit Mukhopadhaya
11.30am	Comparative analysis of gut microbiome, bone microarchitecture and bone turnover in hip fracture and osteoarthritis patients undergoing arthroplasty	Prathicksha Venkatesan
11.40am	Augmentation of hip abductor repair with fascia of vastus lateralis.	Sophie Ludbrook
11.50pm	**Barton's Financial**	
12.00pm	**Lunch Break**	

1.40pm	**Welcome to Session 3**	
1.40pm		
1.45pm	Vitamin D status and Body Mass Index shape pre-arthroplasty gut microbiome architecture in Australian patients with hip osteoarthritis	Tanvi Singh
1.55pm	GLP-1 Receptor Agonists in Total Hip and Total Knee Arthroplasty: A Systematic Review and Meta-Analysis	Christian Lim
2.05pm	Evaluation of the KLIC and CRIME80 Scores as Predictors of Debridement, Antibiotics, and Implant Retention (DAIR) Failure in Prosthetic Joint Infection: A Retrospective Cohort Study at the Royal Adelaide Hospital	Rudraksh Gupta
2.15pm	Immediate Ambulation Directly From Theatre Following Total Knee Replacement: A Feasibility and Safety Case Series of the SWIFT (Safely Walking Immediately From Theatre) Protocol	Sabrina Kahina
2.25pm	Predictors and Outcomes of Delayed Mobilisation Following Elective Primary Hip and Knee Arthroplasty: A Pilot Retrospective Cohort Study	Nida Awan
2.35pm	Volumetric Quantification of Acetabular Defects Encountered at Revision Total Hip Arthroplasty	Liam Matkovic
2.45pm	Radiographic Stability and Re-revision Risk of Modified Highly Porous Tantalum Acetabular Implants for the Treatment of Large Acetabular Defects in Revision Total Hip Arthroplasty	Bogdan Solomon
2.55pm	Revision Risk Following use of Hooded Versus Neutral Acetabular Liners in Anterior Approach Total Hip Arthroplasty: An AOANJRR Registry-Based Cohort Study	Alex Saies
3.05pm	Conclusion / Afternoon Tea	
3.30pm	AOA 21 Update	Jai Sungaran
3.45pm	Presidential Report	Chris Kondogiannis
4.00pm	**SA-NT Branch Annual General Meeting – Members Only**	
6.30pm	**Conference Dinner – Victoria Park Social Club**	

Lumbar Foraminal Decompression Through Intrapedicular Partial Pedicle Resection: Surgical Technique and Clinical Results

VARMAN GUNASAEGARAM, Steven Nshuti, Matthew Rackham

Spinal Surgery Unit, Royal Adelaide Hospital

Objectives:

To describe the intra-pedicular partial pedicle resection (IPPPR) technique for direct decompression of lumbar foraminal stenosis and evaluate associated clinical outcomes.

Methods

Patients treated between 2016 and 2023 for symptomatic radiculopathy secondary to radiologically confirmed lumbar foraminal stenosis were prospectively assessed. All underwent IPPPR after failing conservative therapy. Leg pain was evaluated using pre- and postoperative Visual Analogue Scale (VAS) scores, with paired t-tests used for analysis. Complications and level-specific outcomes were recorded.

Results

Of 60 patients, 47 (78%) had complete VAS data for analysis. Mean VAS improved by 5.0 points (7.53 to 2.53; $p < 0.001$). Significant improvement (≥5-point reduction) occurred in 62% of patients; only one patient showed no meaningful improvement. Pain reduction varied by level, with L5 decompressions demonstrating smaller improvements compared with more cranial levels.

Conclusion:

IPPPR is a safe, facet-sparing, direct decompression technique that provides effective relief of radicular pain from lumbar foraminal stenosis. With appropriate patient selection and counselling, IPPPR represents an effective and reproducible non-fusion alternative to both traditional open and newer endoscopic foraminal decompression methods.

Long term Outcomes of Triple Arthrodesis in Children: A retrospective cohort trial

TACHELLE TING, Tanvi Singh, Christy Graff

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INTRODUCTION

Triple arthrodesis is a procedure from the 1920's which entails fusion of foot and ankle joints, to correct lower leg abnormalities, augment stability, and decrease pain[1]. There has been little research into the long-term outcomes of triple arthrodesis. Thus, the aim of this study is to retrospectively evaluate the long-term outcome and patient satisfaction of the triple arthrodesis procedure.

METHODS

Participants for this study were previously paediatric patients who underwent triple arthrodesis at the Women's and Children's Hospital (WCH) in Adelaide between the years of 1998 and 2012. Participants were identified through operative records from the institute. Patient reported outcomes were measured using the Foot and Ankle Ability Measure (FAAM) and Manchester Oxford Foot and Ankle Questionnaire (MOXFQ) tools. Questionnaires were completed over the phone.

RESULTS AND DISCUSSION

Qualitative results were gathered from medical students by speaking to patients and/or their guardians over the phone. Results will be discussed in a content and narrative analysis to identify recurring themes in the patients' long-term outcome and overall satisfaction with their triple arthrodesis procedure.

CONCLUSIONS

This study provides detailed insights into the long-term outcomes and patient satisfaction of the triple arthrodesis procedure. The study aims to provide results that will aid future research of managing triple arthrodesis and future surgical teams in research of alternative surgical approaches and their efficacy and long-term results.

REFERENCES

1. Tenuta, J., Shelton, Y. A, and Miller, F., 1993, Long-Term Follow-up of Triple Arthrodesis in Patients with Cerebral Palsy, Journal of Pediatric Orthopaedics: 13(6):713-716.

Estimated versus Actual Procedural Time in Elective Paediatric Orthopaedic Surgery: A 12-Month Audit.

BRAYDEN CAMPBELL, A/Prof Nicole Wiliams

Women's and Children's Hospital, North Adelaide

Background

Accurate estimation of elective procedure duration is essential for operating list planning, staffing, and theatre utilisation. At the Women's and Children's Hospital, estimated procedural time should be entered at time booking, but these estimates may not reliably reflect actual theatre requirements, potentially contributing to list overruns, cancellations, or underutilised theatre time.

Methods

This audit reviewed elective procedures performed at WCH over a 12-month period from 1 March 2025 to 28 February 2026. Ormis provided operating data, including procedure type, consultant, primary surgeon, operating time, and total theatre time, including anaesthetic time. Sunrise was used to review the booking form and extract the estimated procedural time recorded on the Request for Admission, along with the level of clinician completing the form where available. Estimated procedural time was compared with actual recorded procedural time.

Results

A total of 436 records were identified. After excluding unusable records, 425 cases remained. Of these, 182 cases (42.8%) had no procedural time entered on the booking form, leaving 243 cases with a recorded estimate for comparison. Theatre time was underestimated in 184 cases, meaning the booked time was less than ultimately required. 56 cases had overestimated theatre time. The remainder showed no difference in time.

Conclusion

This audit demonstrates variability in elective theatre time estimation, including a high proportion of missing booking estimates and frequent underestimation when estimates were provided. These findings support evidence-based booking guidelines by procedure type and clinician level to improve list efficiency, reduce overruns, minimise cancellations, and optimise theatre utilisation.

Latissimus Dorsi muscle transfer for Subscapularis deficiency - case series in arthroplasty and rotator cuff failure

MICHAEL SANDOW

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Introduction

Subscapularis deficiency can occur following shoulder arthroplasty, failed rotator cuff repair, or in large or massive rotator cuff tears. The latissimus dorsi (LD) muscle has anatomical characteristics that make it a very suitable transfer option.

Methods

Cases:

Arthroplasty:

1.62 y.o. aTSA for glenoid dysplasia with failed SSC following physiotherapy manipulation.

2.68 y.o. aTSA for OA. SSC tear following fall at 6 months. LD transfer at 18 months following failed re-repair.

3.58 y.o. aTSA. Primary LD transfer for deficient SSC due to multiple anterior open procedures for instability.

4.65 y.o. female with SSC rupture at 3 month following fall.

Rotator cuff deficiency:

5.58-year-old - LD transfer following 3 failed attempted subscapularis/supraspinatus repair.

6.68-year-old rotator cuff retear following 10-year satisfactory function following initial successful repair. LD transfer as SCC deficiency on MRI.

7. 73-year-old with subscapularis and supraspinatus tears. Primary LD transfer due to SSC severely atrophic on MRI as SSC not repairable at arthroscopy.

Results

All patient noted improvement in pain at minimum 12 months follow-up, and all gained at least 90 degrees of forward elevation and good external rotation power. Belly press weakness was slow to improved despite pain and function improvements and palpable LD muscle engagement. Two patients experience short term partial sensory loss in the hand. There was no persistent neurological loss.

Conclusion:

LD transfer can address irreparable subscapularis muscle dysfunction to salvage a failing anatomical TSA or in the situation of a primary or secondary irreparable subscapularis muscle tear.

Tibia Post Fractures in Posterior stabilized total knee arthroplasty: A retrospective database review

TACHELLE TING, Isaac Wangai, Brent Lanting

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Introduction:

Tibia post fractures are relatively uncommon complication of posterior stabilized total knee arthroplasty and due to this, there is paucity of data on the prevalence and risk factors associated with this complication. The few studies that have been done on this subject have pointed to the type of polyethylene insert material used, whether conventional or highly cross-linked and the position of the femoral and tibia implants as being associated with the risk of tibia post fractures in posterior stabilized TKA. To our knowledge, this will be the first study of a large multi-surgeon knee arthroplasty database to study the different risk factors involved in tibia post fractures in posterior stabilized total knee arthroplasty.

Methodology

A retrospective cohort study of all patients enrolled in the IRAL knee database between January 1, 1994, to June 30, 2023 who received a total knee arthroplasty with posterior stabilized implants and had revision surgery for tibia post fracture done at London School of Health Sciences, Western University, Ontario, Canada.

Purpose

To compare baseline characteristics, the Student T-test will be used for continuous variables and Chi-Square for categorical variables. Univariate analysis will be used to compare the data on component variables, type of polyethylene implant characteristics, femoral component position, tibia component position, knee range of motion, presenting, mean time from primary TKA to revision surgery and type of revision done. Multivariate analysis will be used to control baseline characteristics.

Hip fracture patients on Apixaban or Rivaroxaban. A prospective observational study to determine the effect of time to theatre and preoperative blood markers on bleeding.

SHOUMIT MUKHOPADHAYA, Yasith Edirisinghe, Peter Smitham, Bianca Wong, Daniel George, Teik Chan

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Background

Hip fractures present a significant health system burden, and early surgery (24-48 hours) is recommended to reduce patient morbidity and mortality. However, for patients presenting on direct oral anticoagulants (DOACs), current clinical practices often delay surgery for more than 48 hours, despite emerging evidence suggesting that such extended delays may be unnecessary. Furthermore, there is a distinct lack of prospective studies correlating preoperative time to surgery and DOAC levels with transfusions, postoperative wound complications and mortality.

Aims

This multicentre prospective observational cohort study aims to determine the effect of time to theatre—measured from the last DOAC dose—and preoperative blood markers on bleeding and perioperative complications in hip fracture patients.

Methods

This study has been conducted across 3 centres in Adelaide since November 2023, aiming to recruit 200 patients. Eligible participants include individuals over 60 years of age who require surgery for hip fractures while actively taking Apixaban or Rivaroxaban. Patient care has not been altered from standard medical practices, with an additional preoperative blood test at the time of anaesthetic induction to measure haemoglobin and DOAC levels. The primary hypothesis is that time to surgery does not influence transfusion rates. Secondary objectives evaluate haemoglobin drops (including pre and post op changes), wound complications, infection rates, return to theatre rates, and overall mortality.

Results

Here we present the results from the first 100 patients, with the aim to support timely surgical interventions, alleviate clinical anxiety regarding early operations on patients taking DOACs, and ultimately improve targeted patient care.

Comparative analysis of gut microbiome, bone microarchitecture and bone turnover in hip fracture and osteoarthritis patients undergoing arthroplasty

PRATHICKSHA VENKATESAN, Boopalan Ramasamy, Rishikesh Dash, Augustine Horman, Gerald J. Atkins, L. Bogdan Solomon, Chloe Furst, Stuart A. Callary, Deepti K. Sharma, Balamurugan Ramadass

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The gut microbiome regulates bone homeostasis through immune, metabolite, and endocrine pathways. However, clinical evidence linking microbiome composition to bone microarchitecture and strength remains limited. We compared gut microbiome diversity between patients with neck of femur fracture (NOF) and osteoarthritis (OA) undergoing hip arthroplasty, and assessed associations with bone microarchitecture, hip geometry, and bone turnover markers. This nested case-control study included 30 NOF patients (median age, 83 years; 83% female) and 28 OA patients (median age, 70 years; 43% female). Stool samples were collected preoperatively in OA and on postoperative days 1–3 in NOF. Microbiota were analysed using 16S rRNA sequencing (V3–V4 region). Trabecular bone microarchitecture was assessed using micro-computed tomography of intraoperative bone cores. Hip geometry and bone mineral density (BMD) were measured using dual-energy X-ray absorptiometry with Advanced Hip Analysis. Bone turnover markers were measured from fasting blood samples. NOF patients demonstrated significantly higher alpha diversity than OA patients (observed OTUs: 353±40.6 vs 315.7±52.4, $p=0.005$; Shannon: 3.81±0.28 vs 3.55±0.44, $p=0.0087$; Pielou's evenness: 0.65±0.05 vs 0.62±0.07, $p=0.022$), despite significantly lower hip BMD and weaker geometric parameters (all $p<0.001$). Beta diversity did not differ between groups. After adjustment for age, sex, and BMI, higher alpha diversity in NOF was associated with reduced bone strength, explaining up to 70% of variance in hip geometry measures. Conversely, in OA, higher observed OTUs were associated with improved bone outcomes, including higher BMD and improved trabecular microarchitecture. Gut microbiome diversity demonstrates contrasting relationships with bone health in NOF and OA, suggesting disease-specific gut–bone interactions. These findings are exploratory and require validation in larger cohorts.

Augmentation of hip abductor repair with fascia of vastus lateralis.

S LUDBROOK 1, Y Caplash 2, S Thwaites 1,3, S A Callary 1,3, L B Solomon 1,3, B Ramasamy 1,3

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Background

Hip abductor tears are common and can cause severe limp and pain. Repair of gluteal tears often requires augmentation. Although current methods of gluteal augmentation have good reported outcomes, as they rely on non-autologous materials they can be costly and add additional levels of complexity if they get infected. Based on the below case series, we report an alternative technique to augment gluteal tendon repair that uses vastus lateralis fascia.

Methods

Between 2022 and 2025 we performed 24 hip abductor repairs augmented with a vastus lateralis fascia flap, following a primary or revision hip replacement. A functioning gluteus medius was confirmed intraoperatively using a superior gluteal nerve stimulator prior to repair. Patients were weight-bearing as tolerated postoperatively and commenced abductor strengthening exercises at six weeks.

Results

Preoperatively, all but the two patients who presented with a neck of femur fracture, had severe pain and an abductor power ≤2/5. At their last post operative follow-up, all patients denied pain, and 22 had abductor power ≥3/5. Four patients underwent subsequent reoperations, during which, good healing of the repair was observed. Of the 2 patients whose abductor power remained <3/5 post operatively, 1 has since undergone a gluteal reconstruction with the other awaiting the same.

Conclusion

Augmentation of hip abductor repair with vastus lateralis fascia flap is a cost-effective autologous technique with encouraging early outcomes. To prevent performing gluteal repairs in patients that should undergo a gluteal reconstruction we now test the functionality of the gluteal muscles with a nerve stimulator intra-operatively prior to every repair.

Vitamin D status and Body Mass Index shape pre-arthroplasty gut microbiome architecture in Australian patients with hip osteoarthritis

Tanvi Singh, Boopalan Ramasamy, Deepti Sharma, Rishikesh Dash, Stuart A. Callary, Javad Parvizi, Lucian Bogdan Solomon, Gerald J. Atkins, Balamurugan Ramadass.

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Background

Osteoarthritis (OA) has traditionally been regarded as a degenerative musculoskeletal disease; however, increasing evidence suggests that systemic metabolic and microbiome-related factors contribute to disease pathogenesis and surgical outcomes. We characterised the preoperative gut microbiome–immune phenotype of patients undergoing primary hip arthroplasty for OA.

Methods

Preoperative stool samples were collected from 30 patients undergoing primary hip arthroplasty for OA. Gut microbial profiling was performed using 16S rRNA gene sequencing. Serum 25-hydroxyvitamin D [25(OH)D], neutrophil-to-lymphocyte ratio (NLR), faecal calprotectin, and body mass index (BMI) were recorded. Alpha and beta diversity, together with differential taxa abundance, were assessed according to vitamin-D status, BMI, faecal calprotectin, and NLR.

Findings

The gut microbiome was enriched with short-chain fatty acid–producing taxa, including Anaerobutyricum hallii, Blautia obeum, and Collinsella aerofaciens. Obese participants demonstrated greater abundance of C. aerofaciens than healthy-weight individuals ($p=0.028$), while Enterococcus faecalis was enriched in obese compared with overweight participants ($p=0.039$). Phocaeicola vulgatus was significantly more abundant in overweight individuals than healthy-weight controls ($p=0.039$) and in vitamin D–deficient participants compared with those with normal vitamin D levels ($p=0.0009$). Elevated faecal calprotectin was associated with significantly greater alpha diversity across observed operational taxonomic units, Shannon diversity, Simpson diversity, and Pielou's evenness (all $p<0.05$). No significant differences in beta diversity were observed across groups.

Interpretation

Among Australian OA patients undergoing hip arthroplasty, intestinal inflammatory status and metabolic factors are associated with selective alterations in gut microbial composition. These findings establish a baseline pre-implant microbiome and support a potential gut–bone–implant axis relevant to arthroplasty outcomes.

GLP-1 Receptor Agonists in Total Hip and Total Knee Arthroplasty: A Systematic Review and Meta-Analysis

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Background

Glucagon-like peptide-1 (GLP-1) Receptor Agonists are increasingly prescribed for obesity and type 2 diabetes mellitus. Obesity is associated with higher complications rates following total hip arthroplasty (THA) and total knee arthroplasty (TKA). This systematic review and meta-analysis evaluated whether perioperative GLP-1 use influences outcomes following THA and TKA.

Methods

A systematic search of MEDLINE, Embase, PubMed and Cochrane CENTRAL was performed from database inception to May 2026. Studies comparing patients undergoing THA or TKA prescribed GLP-1 versus controls (No GLP-1) were included. Primary outcomes were post-operative infection. Secondary outcomes included revision surgery, periprosthetic fractures, deep vein thrombosis (DVT) and acute kidney injury (AKI). Data on both early (within 90 days) and late (1-2years) outcomes were collected. Meta-analysis was performed using a random-effects model, with relative risk (RR) and 95% confidence intervals (CI) reported.

Results

13 total studies met inclusion criteria, with 10 reporting on the primary outcomes). GLP-1 use was associated with a lower rate of overall infection (RR 0.83, 95%CI 0.72-0.96, p=0.010). No significant differences were identified for late revision (RR 0.93, p=0.36), overall fracture rates (RR 0.95, 95%CI 0.69-1.33, p=0.87), early DVT rates (RR 0.90, p=0.54) or early AKI rates (RR 1.04, p=0.77).

Conclusion

GLP-1 use in THA and TKA appears to reduce overall infection rates without affecting rates of other post-operative complications including fracture, AKI and DVT.

Evaluation of the KLIC and CRIME80 Scores as Predictors of Debridement, Antibiotics, and Implant Retention (DAIR) Failure in Prosthetic Joint Infection: A Retrospective Cohort Study at the Royal Adelaide Hospital

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Introduction

Prosthetic joint infection (PJI) is a devastating complication of total hip and knee arthroplasty, often requiring multiple surgical interventions. While revision arthroplasty remains the gold-standard treatment, it is invasive, costly, and associated with significant morbidity. Debridement, antibiotics and implant retention (DAIR) offers a less invasive alternative that preserves prostheses and bone stock while reducing recovery time. However, DAIR success varies according to patient and infection factors, and failed DAIR may delay definitive revision surgery. The KLIC and CRIME80 scores were developed to predict DAIR failure, but their utility has not been evaluated in an Australian population.

Methods

Patients undergoing DAIR for hip or knee PJI at the Royal Adelaide Hospital over a 12-month period were retrospectively identified. Clinical records were reviewed, and KLIC and CRIME80 scores calculated for each patient. Score performance was assessed by comparing predicted and observed DAIR failure rates and evaluating discriminatory ability.

Results

Approximately 150–250 patients are anticipated to be included. Based on published validation studies, increasing KLIC and CRIME80 scores are expected to correlate with higher DAIR failure rates. The KLIC score is anticipated to demonstrate modest predictive ability (AUC 0.60–0.65), with similar performance expected for CRIME80 (AUC 0.55–0.65). Predictive performance is expected to be lower than that reported in the original derivation cohorts and consistent with contemporary international validation studies.

Discussion

This study will provide the first Australian evaluation of the KLIC and CRIME80 scores and help define their role in guiding clinical decision-making between DAIR and revision arthroplasty for PJI.

Immediate Ambulation Directly From Theatre Following Total Knee Replacement: A Feasibility and Safety Case Series of the SWIFT (Safely Walking Immediately From Theatre) Protocol

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Background

Early mobilisation is a cornerstone of Enhanced Recovery After Surgery (ERAS) pathways following total knee replacement (TKR), contributing to reduced complications and shorter hospital stay. While mobilisation within 24 hours is well established, ambulation immediately following surgery has not previously been well described. The SWIFT (Safely Walking Immediately From Theatre) protocol is a novel approach designed to facilitate ambulation directly from the operating theatre to recovery following TKR.

Purpose

To evaluate the feasibility and safety of the SWIFT protocol in primary TKR.

Methods

This case series included 180 patients undergoing primary TKR between August 2022 and December 2025 at a single institution. The SWIFT protocol incorporates optimised anaesthesia, multimodal analgesia, robotic-assisted surgery, and immediate supervised mobilisation. Patients underwent mobilisation assessment and guided gait training in theatre. Those meeting predefined criteria then ambulated directly from theatre to recovery under supervision, walking up to 40 metres.

Results

All 180 patients completed immediate postoperative ambulation. 140 patients ambulated 40 metres directly to recovery, while 40 completed shorter distances prior to transfer. No adverse events occurred, including no falls, orthostatic events, or termination of mobilisation due to symptoms.

Conclusion

The SWIFT protocol is feasible and safe within an ERAS pathway. To our knowledge, this is the first case series describing ambulation directly from theatre to recovery after TKR. The protocol extends early mobilisation from hours to minutes after surgery. Further analysis will assess effects on opioid use, thromboembolism, length of stay, and recovery outcomes compared with conventional pathways.

Predictors and Outcomes of Delayed Mobilisation Following Elective Primary Hip and Knee Arthroplasty: A Pilot Retrospective Cohort Study

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Background

Early mobilisation following total hip arthroplasty (THA) and total knee arthroplasty (TKA) is a key component of enhanced recovery pathways and has been associated with improved patient outcomes and reduced healthcare utilisation. Despite increasing emphasis on mobilisation on the day of surgery, the proportion of patients achieving this target and the factors associated with delayed mobilisation remain incompletely understood.

Aims

To determine the rate of Day 0 mobilisation following elective primary THA and TKA, identify factors associated with failed Day 0 mobilisation, and evaluate the effect of delayed mobilisation on hospital length of stay.

Methods

A pilot retrospective cohort study was performed of consecutive patients undergoing elective primary THA or TKA at a single tertiary private hospital during February 2026. Patient demographics, procedure type, anaesthetic technique, theatre finish time, time to mobilisation, length of stay, discharge destination, and reasons for delayed mobilisation were recorded. Patients were stratified according to mobilisation on the day of surgery versus postoperative Day 1 or later.

Results

Forty-four patients were included, comprising 21 THAs and 23 TKAs. The mean age was 72 years and 66% were female. Overall, 26 patients (59%) mobilised on Day 0, 17 (39%) on Day 1 and 1 (2%) on Day 3. Theatre finish time was the strongest factor associated with mobilisation success. Patients whose surgery finished after 1 pm rarely mobilised on Day 0 (1/15, 7%), whereas mobilisation rates were substantially higher for procedures completed before 10 am (80%) and between 10 am and 1 pm (89%). Delayed mobilisation was associated with an increased mean length of stay (5 versus 4 days).

Conclusion

Only 59% of patients achieved Day 0 mobilisation. Theatre finish time was the predominant determinant of mobilisation success, suggesting delayed mobilisation is primarily a system-level issue.

Volumetric Quantification of Acetabular Defects Encountered at Revision Total Hip Arthroplasty

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Introduction

Preoperative evaluation of acetabular bone loss and defect severity is critical for surgical planning of revision total hip arthroplasty (rTHA). Advances in AI-based image segmentation enable time efficient 3D quantification of acetabular defect volume and location, thereby better informing surgical planning.

Aim

To compare quantified preoperative acetabular defect volumes generated via human-refined AI segmentation against traditional Paprosky gradings.

Method

65 rTHAs performed at Royal Adelaide Hospital between 2010 and 2023 were considered for inclusion in the study. An automated computational modelling framework utilising AI-based segmentation and statistical shape modelling (SSM) was employed to generate reconstructions of the native and preoperative hemipelvis (1). The AI-generated hemipelvis was manually refined and compared with the SSM native hemipelvis, resulting in a 3D acetabular bone-defect model. Acetabular defect volumes were calculated and compared against surgeon-assessed Paprosky grades, both overall and regionally.

Results

The absolute mean acetabular defect volumes were 27.1 (2A), 49.9 (2B), 56.6 (2C), 70.7 (3A) and 90.0 cm3 (3B) ($p<0.001$). Contrary to expectations, there was no statistically significant difference in mean defect volume between adjacent Paprosky grades, except for in the superior region between 2C and 3A defects. Pairwise comparisons showed statistically significant differences between 2A and 3B ($p=0.0022$), 2B and 3B ($p<0.001$), 2C and 3B ($p<0.001$).

Conclusion

AI-assisted, human-refined segmentation provides more accurate and efficient preoperative volumetric quantification of acetabular defects. Our findings suggest a revised grading system based on defect volumes may improve acetabular defect subcategorization.

Radiographic Stability and Re-revision Risk of Modified Highly Porous Tantalum Acetabular Implants for the Treatment of Large Acetabular Defects in Revision Total Hip Arthroplasty

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Revision total hip arthroplasty (rTHA) for severe acetabular defects often requires large components which may protrude beyond the residual acetabulum, risking muscle and nerve impingement resulting in persistent pain, and dysfunction. Highly porous tantalum trabecular metal acetabular implants (TMAI) can be modified intra-operatively by removing any proud portion to minimise protrusion, while enabling enhanced orthogonal fixation with long screws into the dome, ischial tuberosity, and superior pubic ramus.

This study evaluated the radiographic stability and re-revision risk of all TMAI used in rTHA at our institution from the inception of intra-operative component modification (2013). All acetabular reconstructions with TMAI performed between 2013 and 2023 were included. Serial pelvic radiographs were assessed using Ein-Bild-Roentgen-Analyse (EBRA), with radiographic loosening defined as migration >3mm.

Of 246 rTHAs, 83 (34%) received modified TMAI and 163 (66%) non-modified TMAI. Modified TMAI treated more severe defects (71% Paprosky 3 and 43% pelvic discontinuity, versus 28% and 11%). Migration >3mm occurred in 2.8% (2) of modified and 8% (11) of non-modified cases. The cumulative incidence of cup re-revision for any cause did not differ between groups at two years (modified 4.8% [95% CI 0.2–9.5] versus 7.4% [95% CI 3.3–11.4]) or five years (6.3% [95% CI 0.9–11.6] versus 8.6% [95% CI 4.3–13.0]; Gray's test, p=0.596).

Intra-operative modification of TMAI is an encouraging strategy for large acetabular defects, allowing customised defect management, optimal screw fixation, and reduced protrusion. Despite higher defect complexity, modified TMAI demonstrated good radiographic stability and a very low re-revision risk for loosening and all cause.

Revision Risk Following Use of Hooded Versus Neutral Acetabular Liners in Anterior Approach Total Hip Arthroplasty: An AOANJRR Registry-Based Cohort Study

ALEXANDER SAIES, Tom Gieroba, Peter Lewis and Madeline McCaul

Background

Hooded acetabular liners are intended to improve joint stability following total hip arthroplasty (THA). However, the clinical benefit in the context of modern anterior approach THA remains uncertain. This study evaluated revision rates and causes of revision following anterior approach THA comparing hooded versus neutral (non‐hooded) acetabular liners in a large national cohort.

Methods

This study used data from the Australian Orthopaedic Association National Joint Replacement Registry (AOANJRR). All primary THAs performed for osteoarthritis between 2014 and 31 December 2024 using an anterior approach were included. THA performed with cemented acetabular components, non-XLPE liners, constrained and dual mobility prostheses or unknown acetabular types were excluded from the analysis. Cumulative percent revision (CPR) was calculated using Kaplan–Meier estimates. Cox regression compared revision risks.

Results

A total of 65,981 THAs were included. There was no significant difference in all-cause revision between hooded and neutral liners following anterior approach THR. Revision for dislocation was significantly higher in hooded liners compared with neutral liners when performed via an anterior approach (HR 1.67, 95% CI 1.22–2.27, p = 0.001).

Conclusion

Hooded liners were associated with increased revision risk for dislocation in anterior approach THA

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