NEWSLETTER

OF

ASIA PACIFIC ARTHROPLASTY SOCIETY

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CONTENTS

APAS ASM 2023 SUMMARY

Fostering Progress and Unity: Reflecting on the Annual Scientific Meeting of the Asia Pacific Arthroplasty Society in Cebu

In the vibrant city of Cebu, Philippines, the recent Annual Scientific Meeting of the Asia Pacific Arthroplasty Society (APAS) illuminated the remarkable strides being made in the realm of Arthroplasty. With a profound commitment to scientific advancement and healthcare enhancement, APAS stands as a beacon of excellence, providing a crucial platform for medical professionals across the Asia-Pacific region and beyond to unite, exchange knowledge, and invigorate their expertise. This year's conference not only emphasized the organization's core values but also showcased the indispensable role of cross-border collaboration in elevating healthcare standards.

APAS, a stalwart advocate for scientific integrity and healthcare betterment, prides itself on fostering an environment where the confluence of cutting-edge research, innovative technologies, and clinical expertise leads to transformative breakthroughs in Arthroplasty. The Annual Scientific Meeting encapsulates this commitment by bringing together a diverse array of specialists, researchers, and young surgeons from across the Asia-Pacific region. By doing so, APAS underscores the significance of inclusivity and collaboration, demonstrating that progress in healthcare knows no boundaries.

One of the most remarkable facets of this event was the active participation of nations like the Philippines. As a developing country with a burgeoning medical community, the Philippines demonstrated its growing influence and prowess on the global stage. The APAS conference provided an invaluable opportunity for Filipino surgeons to interact with international peers, exchange insights, and learn about the latest advancements in the field. This not only bolsters the knowledge base of local practitioners but also empowers them to deliver better care to their patients.

Furthermore, the conference serves as a catalyst for inspiring young surgeons from the Asia-Pacific region to evolve and refine their skills. The presence of seasoned experts, combined with a comprehensive line-up of lectures, workshops, and presentations, ignites a sense of curiosity and enthusiasm among budding professionals. This nurturing environment encourages them to embrace innovation, challenge conventions, and become catalysts for positive change in their respective healthcare systems.

Central to APAS's ethos is the impartial evaluation of new technologies through a scientific lens. In an era where the allure of novelty can sometimes overshadow rigorous scientific assessment, APAS stands as a paragon of objectivity. By providing a platform for unbiased discussions on emerging technologies, the organization ensures that patient care

remains paramount and that the integration of novel tools is driven by evidence-based principles rather than market trends. This year's colloquium was a testament to neutral, high quality information, not outrage and sensationalism. This was reinforced by Dr Bharat Mody in his deeply profound Presidential Speech which kick-started the congress.

Moreover, APAS's commitment to fostering a global community of surgeons allows young voices to resonate within an international context. The organization's dedication to providing a platform for surgeons to voice their opinions and concerns reiterates its belief in an egalitarian approach to knowledge sharing. This openness not only promotes transparency but also fuels a two-way exchange of ideas, nurturing a culture where even the freshest perspectives can contribute to the advancement of the field.

In conclusion, the Annual Scientific Meeting of the Asia Pacific Arthroplasty Society in Cebu, Philippines, served as a resounding testament to the power of scientific collaboration, education, and dialogue. As APAS continues to champion the betterment of healthcare delivery in the field of Arthroplasty, it sets an inspiring example for medical societies worldwide. By embracing nations like the Philippines, fostering the growth of young surgeons, and upholding the principles of unbiased scientific inquiry, APAS ensures that the trajectory of Arthroplasty remains guided by innovation, integrity, and patient well-being.

FELLOWSHIP REPORT

DEPUY SYNTHES APAS TRAVELING FELLOWSHIP REPORT 2023

Our journey into this amazing fellowship began when Dr. Parag Sancheti informed us that me and Dr. Vishnu Senthil were the 'chosen ones' (after duly completing the selection process) for the year 2023. We were informed that the APAS fellowship 2023 includes traveling to Chennai, Kuala Lumpur, Sydney, Jakarta, Solo, and Surabaya over four weeks and finally attending the APAS Annual Conference at Cebu. We were asked to make all the necessary traveling arrangements according to our convenience and coordinate with the local hosts.

Chennai, India (24th - 30th July 2023)

Our first part of this fellowship began at the Asian Joint Reconstruction Institute under Dr. Vijay Bose, Dr. P Suryanarayan, and Dr. Kalaivanan. We were introduced to a new paradigm called functional 3-dimensional balancing in Total Hip Replacement by Dr. Vijay Bose. He beautifully demonstrated this philosophy in several different case scenarios that included a dysplastic hip, ankylosed hip, coxa vara, and primary hip osteoarthritis post-AVN. In knee Arthroplasty, we observed a case of total knee replacement performed with adjusted mechanical alignment principles, a fixed-bearing Unicompartment knee replacement, and a second-stage revision knee arthroplasty. Along with his fellows, we participated in detailed pre-operative planning in all of his Arthroplasty cases. Dr. Bose also presented to us some of his curated collection of scientific talks on Hip arthroplasty.

Left to Right: Dr. Kalaivanan, Dr. Vishnu (APAS fellow), Dr. Vijay Bose, and Dr. Sandesh (APAS fellow) at AJRI (SIMS), Chennai.

Kuala Lumpur, Malaysia (31th July- 6th August 2023)

With Prof. David Choon at Quill Orthopaedic Specialist Centre, Kuala Lumpur, Malaysia.

Our first international visit of this fellowship was to Prof. David Choon at Quill Orthopaedic Specialist Centre. We observed six conventional mechanical alignment total knee replacements performed with all-poly tibial components. We also visited Sunway Medical Center and observed Dr. Chua Hwa Sen perform Robotic total hip replacements using the MAKO (Stryker) system and Robotic knee replacement using the ROSA (Zimmer) system. We also visited the University Malaya Medical Center where Dr. Veenesh showed us follow-up cases of Arthroplasty visiting the public hospital. Dr. Vishnu also assisted Prof. David Choon in an interesting revision Hip arthroplasty case. Prof. David Choon took us around Kuala Lumpur city and also made wonderful arrangements for us to visit the historical city of Melaka. We also had a wonderful dinner with all these faculties arranged by Prof. David Choon.

With Dr. Chua Hwa Sen at Sunway Medical Centre, Kuala Lumpur, Malaysia.

Ipoh, Malaysia (9th – 12th August 2023)

Dr. Vishnu left by train to Ipoh to meet Dr. Vasan Sinnadurai.

Dr. Vishnu: "I was picked up by Dr. Vasan's assistant at the railway station. We went to the hotel and there was a social dinner with Dr. Vasan at a heritage club that was more than 150 years old. The next day I visited the public hospital and met Dr. Fu. There was a list of cases that included both hip and knee replacements for me to scrub in. Replacements done at the public hospital with different kind of implants and instrumentation in a low-resource setting was very interesting and informative. The next day was spent with Dr. Vasan at his outpatient clinic. We had lunch at a local Indian restaurant and dinner at a Malaysian brewery. On the last day, I embarked on my journey to Jakarta, Indonesia which included a bus journey with a scenic landscape of Malaysia from Ipoh to Kuala Lumpur."

Dinner with Dr. Vasan at the Ipoh Club and a Public hospital Visit with Dr. Fu.

Sydney, Australia (7th - 13th August 2023)

With Dr. Rami Sorial and Dr. Simon Coffey at Napean Private Hospital, Penrith, Sydney.

I was pleasantly surprised to see Dr. Rami Sorial had personally come to receive me at the Sydney Airport. He took me to his magnificent home, introduced his family, and served me a delicious vegetarian home-cooked meal. The next day I visited Mater Private Hospital and observed two bilateral robotic knee replacements performed by Dr. Matt Lyons and his team using the Velys (Synthes) system. The following day, I tagged along with Dr Rami and his team at Napean Private Hospital at Penrith. I observed him perform a total hip replacement with Patient-Specific Instrumentation (PSI), two total knee replacements using the ROSA (Zimmer) system, and a mobile-bearing Oxford Unicompartment replacement. On the third day, I met Dr. Simon Coffey. He introduced me to the inverse kinematic alignment in total knee replacement and saw him perform a few cases using the OMNIBotics (Corin) robotic system. I also had some spare time to visit the spectacular wilderness of the Blue Mountains, the iconic Sydney Harbour Bridge, the Opera House, and the vibrant Bondi Beach. There was also a wonderful faculty dinner with Dr. Rami and his team members at a local Greek restaurant.

Jakarta, Solo and Surabaya, Indonesia (14th - 20th August 2023)

In Jakarta, we visited Mitra Keluarga Private Hospital and assisted Dr. Andito in a bilateral total knee replacement. We also met Prof. Dr. Nicolaas Budhiparama at Medistra Hospital. He had arranged an Indonesian Hip and Knee Surgeons meeting and allowed us to present our research work and discuss interesting clinical cases. Along with him, there was a faculty dinner with Dr. Kiki, Dr Ricky and Dr Imelda. The next day we visited Fatmawati General Hospital and observed one total hip replacement with Dr Jamot. The same day we left on a train to Solo. At Prof. Dr. R. Soeharso Orthopaedic Hospital we met Prof. Dr. Asep Santoso and faculty members of the Adult Reconstruction division. We assisted Dr. Asep in a total hip replacement surgery for a complex dysplastic hip. The next day I left for Surabaya. At Dr. Soetomo General Hospital, in a weekly Orthopaedic and Traumatology Department scientific meeting, I presented a case to the residents. I also assisted Dr. Zaim Chilmi in a total hip replacement for a complex neglected acetabular fracture. There was a wonderful faculty dinner with Dr. Kukuh and other faculty members.

Cebu, Philippines 21st-23rd August 2023

The final destination of this traveling fellowship was Cebu, Philippines where the APAS Annual Scientific Conference was organised. Besides wonderful scientific sessions, we met several distinguished faculty members and delegates from different countries who shared their experiences and knowledge with us. It was a perfect platform to forge new friendships and strengthen interpersonal and professional relationships.

Fellowship award night at Cebu, Philippines with Dr. Rami Sorial, Dr. Bharat Mody, and Dr. Parag Sancheti.

FELLOWSHIP REPORT

Women in Arthroplasty Travelling Fellowship 23-24

The Asia Pacific Arthroplasty Society (APAS) - Women in Arthroplasty (WiA) Traveling Fellowship was one of the best choices I made in life!

The Asia Pacific Arthroplasty Society (APAS) Women in Arthroplasty Traveling Fellowship is credited to Prof. Rami Sorial, current Scientific Chair of APAS 2023. The society's impetus is to bring exceptional female Orthopedic surgeons from Asia Pacific region to gain clinical advancement from various Orthopedic centers in both Australia and Indonesia. APAS's few goals that resounded with me during the whole course of fellowship were increased focus on Women in Arthroplasty, clinical exposure to different healthcare delivery systems while fostering friendships, scientific exchanges, and cultural immersion. And yes nothing beats learning while traveling and exploring new places.

I was in transit during the interview with Prof. Rami Sorial, I remember having this uneasy feeling that my interview may not be the outcome I hoped for. So it was such a peat and honor to have been selected as part of this fellowship. Especially for me: having concluded my fellowship already in 2014 and has been in private practice for 7 years now.

This traveling Fellowship opened my eyes to the practice of other Orthopedic Surgeons in the Asia Pacific region. Intercultural experiences both from clinical tours and off-hours spent with mentors and co-fellows greatly improved my global understanding of our Fellowship journey. When we began our Fellowship, we were just co-fellows, but not even towards the end of August, the WiA Fellowship team formed a bond that surpassed professional relationship but long-lasting friendship.

During our stay in Australia we were fortunate to see a variety of robotic cases- from Rosa to Omnibot to Mako, Naviswiss and OPS. I am amazed with how greatly robotics assists any surgeon during surgery. Like what they say- we measure twice and cut once, making things a bit easier for surgeons.

In Indonesia, we were exposed to familiar cases (as those seen in Australia) but with different surgical techniques.

I had the best mentors from the different cities, namely, Prof Catherine McDougall, Prof Claudia Di Bella, Prof Rami Sorial, Dr Karina Besinga and Dr Azeta Arif. Special mention as well to the other surgeons in the different hospitals we visited. They guided me personally and professionally to immerse me completely in Orthopedics and most especially in Arthroplasty. It solidified my belief that the space you work in, the community you live in, the coworkers and our healthy relationship with them, is very important for the smooth functioning of my work.I am hoping that my experience can help encourage more female Orthopedic Surgeons to go into Arthroplasty as a subspecialty.

And lastly, To Dr Antonio San Juan and the Philippine Hip and Knee Society, Prof Rami Sorial and Asia Pacific Arthroplasty Society for entrusting this wonderful opportunity to me. I am grateful for the chance of learning more on Arthroplasty across diversity in health and medical systems and culture.

- Dr Joyce Garcia

ZIMMER BIOMET WiA FELLOWSHIP REPORT 2023

I am delighted to reflect on the completion of my Women in Arthroplasty Fellowship and share what this invaluable experience has meant for my career and the significant gains I have achieved.

This fellowship has been a transformative journey that has enriched my professional life in numerous ways. It provided me with a unique platform to collaborate with and learn from accomplished women in the field of Arthroplasty. The mentorship and guidance I received during this fellowship have been instrumental in shaping my skills and knowledge.

Through this program, I had the privilege of orking on cutting edge technology and participate in complex surgical cases, further enhancing my expertise in Arthroplasty.The exposure to diverse perspectives approaches has broadened my horizons and allowed me to develop innovative solutions to challanging clinical scenarios. Moreover, this fellowship has fostered a strong sence of camaraderie among women in Arthroplasty. The connections I have formed with my co fellow and all my mentors will undoubtedly continue to be a source of inspiration and support throughout my career.

The generous sponsorship from Zimmer Biomet has empowered me with access to the best mentors and training provided to us. Your support has facilitated collaboration with leading Arthroplasty experts from around the world. I firmly believe that your belief in the value of fellowship in Arthroplasty is shaping the future of this field.

I want to take a moment to share a few words of encouragement with those considering applying for a fellowship in Arthroplasty. Asia Pacific Arthroplasty Society gives you a career choice ; its a transformative journey that holds immense value. During your time as a fellow, you will gain unparalleled education and you will be at the forefront of innovation, contributing to advancements in surgical techniques. This global exposure not only enriches your knowledge but also opens doors to international collaboration and networking. It's a journey that will not only shape your career but also enable you to make a lasting difference in the lives of others.

- Dr. Neha Patel

SCIENTIFIC PAPER PRESENTATIONS AT ASM '23

A Randomised controlled trial assessing the effect of Tranexamic acid on post-operative blood transfusions in patient with intra-capsular hip fractures treated with hemi or total hip arthroplasty

The study conducted by A/Prof Yasser Khatib and his team at Nepean Hospital focused on assessing the impact of Tranexamic Acid (TA) on post-operative blood transfusions in patients with intracapsular hip fractures treated with hemi or total hip arthroplasty. Hip fractures are common among the elderly, and they often require surgery, which can lead to significant blood loss and the need for blood transfusions. The study aimed to determine if TA could reduce the need for blood transfusions in these patients. The results showed that patients who received TA had significantly fewer blood transfusions and smaller drops in haemoglobin levels post-surgery. Additionally, there was a trend toward fewer complications, with no increase in venous thromboembolic events. However, the study had some limitations, including a short follow-up period and a lack of blinding, which should be considered when interpreting the results. Overall, the findings suggest that TA may be beneficial in reducing blood transfusions and complications in hip fracture surgery.

This article, addresses a critical issue of minimising blood loss in orthopaedic surgery. Here is an appraisal of the article:

Strengths:

1. **Clear Objective:** The article presents a well-defined research question: to evaluate the impact of Tranexamic Acid (TA) on post-operative blood transfusions in patients undergoing hip arthroplasty for intracapsular hip fractures. This objective is of clinical significance and relevance to the field.
2. **Ethical Approval and Registration:** The study adheres to ethical standards by obtaining approval from the institution's Health Research and Ethics Committee and registering the trial protocol with the Australian New Zealand Clinical Trials Registry, ensuring transparency and accountability.
3. **Randomised Controlled Trial (RCT):** The study design, a randomized controlled trial, is a robust method for evaluating the efficacy of TA in this specific patient population. Randomisation helps minimise bias and enhance the reliability of the results.
4. **Sample Size Calculation:** The article justifies the sample size calculation, which is essential for the validity of the study results. Adequate sample size improves the study's power to detect significant differences.
5. **Detailed Methodology:** The article provides a comprehensive description of the study methodology, including patient recruitment, treatment allocation, and administration of TA. This transparency enhances the study's reproducibility and allows other researchers to replicate the study.
6. **Statistical Analysis:** The statistical analysis conducted in the study is appropriate, including intention-to-treat analysis and multivariable regression analysis to explore factors associated with blood transfusion. The use of IBM SPSS software is standard practice.

Dr. Gobind Bal

Weaknesses:

1. **Limited Follow-up:** One of the significant limitations of the study is the short follow-up period, which is limited to the immediate surgical admission. A longer-term follow-up would have provided valuable insights into patient outcomes and complications beyond the acute postoperative period.
2. **Lack of Blinding:** The article mentions that investigators were not blinded to the treatment group, which could introduce bias into the decision-making process regarding blood transfusions. Blinding could have strengthened the study's internal validity.
3. **Dehydration and Fluid Resuscitation:** The article acknowledges that haemoglobin values can be falsely elevated due to dehydration or under-resuscitation. This confounding factor should have been addressed more comprehensively in the discussion, as it can affect the interpretation of results.
4. **Limited Generalisability:** The study's patient population may not be representative of all hip fracture patients, as it excludes those with extra-capsular fractures or those treated by internal fixation. Therefore, the generalisability of the findings may be limited.

Conclusion:

This article presents a well-structured randomized controlled trial addressing an important clinical question regarding the use of Tranexamic Acid in hip fracture surgery. While it has several strengths, such as clear objectives, ethical considerations, and appropriate statistical analysis, it also has notable limitations, including a short follow-up period and the lack of blinding. Researchers and clinicians should consider these limitations when interpreting the study's findings and applying them to their practice. Further research with longer follow-up periods and broader patient populations may be needed to confirm and generalise the results.

MESSAGE FROM THE EDITOR'S DESK

Reflections on the APAS Annual Scientific Meeting in Cebu

Dear Colleagues,

I want to share my reflections on the recent APAS Annual Scientific Meeting in Cebu, Philippines. The event showcased the remarkable progress in Arthroplasty and the spirit of collaboration in our field.

This year, the active participation of nations like the Philippines highlighted the global influence of APAS. It allowed Filipino surgeons to learn from international peers and improve patient care.

Moreover, APAS's commitment to fostering a global community of surgeons ignites young voices to resonate within an international context. The organization's dedication to providing a platform for surgeons to voice their opinions and concerns reiterates its belief in an egalitarian approach to knowledge sharing. This openness not only promotes transparency but also fuels a two-way exchange of ideas, nurturing a culture where even the freshest perspectives can contribute to the advancement of the field.

Dr. Kshitij Mody

Furthermore, in an era where the allure of novelty can sometimes overshadow rigorous scientific assessment, APAS stands as a paragon of objectivity. By providing a platform for unbiased discussions on emerging technologies, the organization ensures that patient care remains paramount and that the integration of novel tools is driven by evidence-based principles rather than market trends. This was reinforced by Dr. Bharat Mody in his deeply profound Presidential Speech which kick-started the congress.

In conclusion, the event reaffirmed the power of collaboration, education, and dialogue in Arthroplasty. APAS continues to set an inspiring example for medical societies worldwide!

SCIENTIFIC PAPER PRESENTATIONS AT ASM '23

Intra- and inter-rater reliability of spinopelvic measurements in functional positions for total hip arthroplasty

Prosthesis dislocation or instability is the most common reason for hip arthroplasty revision according to the most recent Australian national joint replacement registry. Dislocation typically occurs secondary to impingement and is much more likely with abnormal spinopelvic motion. Lewinnek described a "safe zone" for positioning of the acetabular component based on static imaging. However, this does not take into consideration of the dynamic positions of usual range of motion with standing and sitting in patients, thus impingement can happen at such extremities, causing dislocation. In Lewinnek's own paper there was a number of patients who dislocated their hips despite the components being in the "safe zone". Current literature explores functional positions and spinopelvic motions to prevent dislocation.

Our study looks at the reliability of spinopelvic measurements performed by three raters of different experience levels in functional positions (standing, seated, and flexed-seated) in 70 patients prior their total hip arthroplasties. 5670 total measurements were completed by our raters over three different occasions spaced two-weeks apart.

With intra-rater reliability, spinopelvic tilt (SPT) had excellent intraclass correlation coefficient (ICC) among measurements by more experienced raters (prevocational trainee ICCs : 0.69-0.94; vocational trainee ICCs: 0.94-0.96; consultant ICCs: 0.93-0.95). Sacral slope (SS) had good-to-excellent ICC in the flexed-seated and seated position (ICCs: 0.84-0.95). Anterior pelvic plane tilt (APPt) had moderate-to-good reliability (ICCs: 0.65-0.97).

With inter-rater reliability, reproducible good-to-excellent ICCs were observed in the flexed-seated and seated positions for SPT (ICCs: 0.90-0.93) and SS (ICCs: 0.82-0.92). SPT and SS measurements in the standing positions had lower inter-rater reliability (ICCs: 0.58-0.88). APPt measured in all three positions had poor inter-rater reliability (ICC<0).

There are several caveats identified that could impact measurement reliability. They include difficulty to locate anatomical landmarks, use of non-midline landmarks, and previous spinal pathology or operations the patients have had. Another limitation is our study's retrospective study design with potential selection bias where patients who considered arthroplasty but had not followed through with the procedures were not included. EOS scans may be more accurate for identifying anatomy but do not allow the patient to take a flexed-seated position. These caveats can be addressed by a prospective study design, where not only every patient who considered hip arthroplasty can be included, but also further repeated radiographs can be taken until they reach best quality for performing spinopelvic measurements.

In essence, our study is a first step to understand the spinopelvic measurements and its intra- and inter-rater reliability at functional positions. We showed that both SPT and SS had far superior intra- and inter-rater reliability than APPt. We recommend the use of SPT and SS over APPt but recognise that even these two measurements are not perfect and care should be taken when imaging quality or anatomy affects the measurements. Future research can use this information to study changes of SPT and SS with different functional positions, and correlate these with dislocation to ultimately identify at-risk patients to help reduce dislocation post arthroplasty.

Dr. Liao Kuan-Chou

Effective treatment of one-stage revision using non-contact low frequency ultrasonic debridement in treating periprosthetic joint infections: a prospective clinical study

The fundamental principle for treating periprosthetic joint infections (PJI) is thorough debridement, especially for one-stage revision. Traditional mechanical debridement can only remove visibly infected tissue and is unable to completely clear all the biofilm that hides within muscle crevices, vital blood vessels and nerves. In this study, the author presents an innovative debridement method during operation to enhance the efficacy of one-stage revision.

After mechanical debridement, they used an 8-mm handheld non-contact low-frequency ultrasound probe for ultrasonic debridement in the whole surgical area at a frequency of (25±5) kHz and power of 90% for 5 minutes. Each ultrasound lasted 10 seconds with 3-seconds intervals. The probe was repeatedly sonicated among all soft tissue and bone interface in the surgical area. The femoral canal of the hip joint, the distal femoral canal and the posterior capsule of the knee were fully sonicated with a special right-angle probe. Before and after ultrasonic debridement, 20 ml of liquid was extracted from each operation area and injected into aerobic and anaerobic culture bottles, respectively, for pathogen culture. Chemical debridement was then performed to irrigate the whole operative area.

They prospectively collected 45 patients since August 2021. Forty-three of the patients (95.6%) were free of infection at a mean follow-up time of 16 months (12 to 20). There were no intraoperative complications related to ultrasonic debridement (neurovascular and muscle injury, poor wound healing and fat liquefaction). The culture-positive rate of wound liquid before ultrasonic debridement was 40.0%, which significantly increased to 75.6% after ultrasonic debridement. The median number of colonies 24 hours after ultrasonic debridement was 2372 CFU/ml, which was significantly higher than that before debridement.

The first mechanism of ultrasonic debridement is cavitation effect. The cavitation bubbles explode in contact with the biofilm and expose bacteria that within the biofilm. The second mechanism is that the ultrasound can increase the porosity of cell membrane and weaken the protective effect. Additionally, the microbubbles can reduce the release of inflammatory cytokine and promote the proliferation of fibrous tissue. Lastly, ultrasound with a certain intensity has good penetration and can remove the biofilm in the distant muscle space of the joint.

Aiming at the problem of inadequate debridement in the treatment of chronic PJI, the study has used a novel non-contact low-frequency ultrasonic debridement technique. The cavitation bubbles could cover all bone and soft tissue surfaces within the surgical area, overcoming the challenge of distinguishing infected tissue from healthy tissue. Furthermore, the results demonstrate that this technique does not cause damage to human tissue and can be safely applied around important blood vessels and nerves, as well as ligaments, to improve debridement effectiveness. Additionally, the good penetration of ultrasound allows for the disruption of biofilms in remote muscle interstices. By disrupting residual biofilms after mechanical debridement, more planktonic bacteria are exposed, thereby improving the effectiveness of subsequent chemical debridement and enhancing infection control rates.

Dr. Baochao Ji

The non-contact low frequency ultrasonic debridement is a novel technique with favorable short-term results, although the evidence supporting the effectiveness of this technique is limited, further evaluation of this new idea as a potential way to improve infection control rates is worth looking forward to.

SCIENTIFIC PAPER PRESENTATIONS AT ASM '23

Efficacy of Intrawound Vancomycin in Prevention of Periprosthetic Joint Infection After Primary Total Knee Arthroplasty: A Prospective Randomized Control Trial

Periprosthetic Joint Infection (PJI) constitutes a significant and formidable complication following primary total knee arthroplasty (TKA), often resulting in dire consequences for patients. Despite the proven efficacy of intrawound vancomycin powder in reducing infection rates in spinal surgery, its suitability and effectiveness in arthroplasty remain a subject of controversy. To address this ongoing debate, we embarked on a prospective randomized controlled trial (RCT) aimed at providing a comprehensive evaluation of the efficacy and safety of intrawound vancomycin in the prevention of PJI after primary TKA.

This RCT, approved by the National Trial Registry, enlisted a cohort of patients scheduled for primary TKA. A total of 1022 patients were eligible for final evaluation among whom, 507 were randomized to the study group, wherein 2g of intrawound vancomycin powder was judiciously administered just prior to the closure of the arthrotomy. In contrast, the remaining 515 patients were designated as the control group and did not receive local vancomycin. All cases, without exception, adhered to a standardized perioperative protocol inclusive of a conventional antibiotic prophylaxis regimen involving 3 perioperative intravenous doses of 1.5g of Cefuroxime. The surgical procedure itself consisted of a medial para-patellar approach, performed using a tourniquet, which remained inflated from the start of incision until the cement was set after final implantation. Importantly, all cases received bone cement devoid of antibiotic impregnation. All patients were followed up for a minimum duration of 12 months. The primary aim of this study was to determine the prevalence of PJI or Surgical Site Infection (SSI) that required revision surgery, while secondary objectives included determining the occurrence of wound-related complications such as persistent wound drainage, stitch abscess or delayed suture removal; and incidence of medical complications including myocardial infarction, DVT, and nephrotoxicity.

The overall infection rate in this study was 0.66%. Importantly, there was no statistically significant difference in the PJI rate between the study group (0.2%) and the control group (0.58%) ($p<0.264$). Likewise, reoperation rates in the study group (4 cases, 0.78%) and control group (5 cases, 0.97%), as well as SSI rates in the study (1 case, 0.2%) and control groups (2 cases, 0.38%), demonstrated comparable outcomes.

It is imperative to highlight that the cohort receiving intrawound vancomycin displayed a markedly higher incidence of minor wound-related complications, amounting to 13.2% (N=67), in contrast to the control group's 7.5% (N=39)($p<0.05$). Crucially, sub-group analysis, focusing on high-risk patient populations including those with diabetes and obesity, did not unveil any discernible disparities in PJI/SSI rates. Additionally, there were no documented incidences of nephrotoxicity in the study.

In conclusion, the findings of this study indicate that the administration of intrawound vancomycin powder does not confer a reduction in the incidence of PJI/SSI following primary TKA, even when assessing high-risk patient populations. While this intervention remains safe from a renal perspective, it is linked to an elevated occurrence of postoperative aseptic wound complications, including persistent wound drainage. Therefore, it is imperative to undertake large-scale, multicenter RCTs before considering its incorporation into routine primary total knee arthroplasties.

Dr. Tarun Jayakumar

SCIENTIFIC PAPER PRESENTATIONS AT ASM '23

Impact of change CPAK on outcome of TKA: A retrospective study

Total knee arthroplasty (TKA) has been a cost-effective treatment for arthritis of the knee since decades, however 7-10% patients still remain dissatisfied with the surgical outcome even without an obvious cause. Mechanical alignment (MA) is considered the gold standard and has shown good survivorship. Recently, subtle changes in limb alignment and joint line obliquity have been quoted as reasons for dissatisfaction amongst patients. This led to the development of the kinematic alignment (KA) philosophy by Dr. Stephen Howell. This alignment strategy replicates native lower limb alignment with minimal soft tissue releases.

Dr. Sam MacDessi proposed the Coronal Plane Alignment of the knee classification which classifies knee into nine phenotypes based on Joint Line Obliquity and arithmetic Hip Knee Ankle angle (aHKA). This classification helps in determining, which patient would benefit from MA or KA. We, therefore, analyzed the impact of change in CPAK classification in our cohort of patients who underwent robot-assisted TKA.

We retrospectively analyzed first 175 patients who underwent TKA using Zimmer ROSA, between December 2019 to August 2021. Patients pre-operatively underwent long leg X-rays, from which JLO and aHKA was calculated. Patients were then classified into CPAK categories pre-operatively. All patients underwent surgery, which was tourniquet-less, using the medial parapatellar approach, by a single surgeon and utilizing the Zimmer Persona cementless prosthesis. The aim of the surgery was mechanical alignment with an HKA od 0 degrees. At 6 weeks post-surgery, patients underwent CT scan using Perth protocol and patients were again classified into CPAK categories post-operatively. Patients were followed up for a minimum of 1 year and at 1-year mark, an independent investigator called up the patient and asked "Are you happy with the outcome of your knee replacement surgery". A binary response "YES" or "NO" was recorded.

We included 134 patients in our study after applying inclusion and exclusion criteria. In our study, the most common CPAK pre-operatively was Type 2 and post-operatively was Type 5, as we aimed for MA. 116 out of 134 patients changed their CPAK categories postop and 18 patients retained their CPAK. 111 out of 116 patients who had a change in CPAK and 14 patients out of 18 who retained their CPAK responded that they are happy with the outcome of surgery (p value = 0.016). We reported no complications or revision for tibial or femoral component in our patient population.

We conclude that, a change in CPAK classification of the knee post-surgery doesn't impact the outcome of the surgery. Rather, a well-balanced knee, done by any alignment philosophy leads to a good outcome. A recent meta-analysis comparing outcomes post-TKA using KA and MA also concluded that there was significant difference in complications, knee ROM, VAS score and objective clinical scores between the two groups. This infers that a change in CPAK does not alter the outcome of TKA surgery.

Dr. Sarang Agarwal

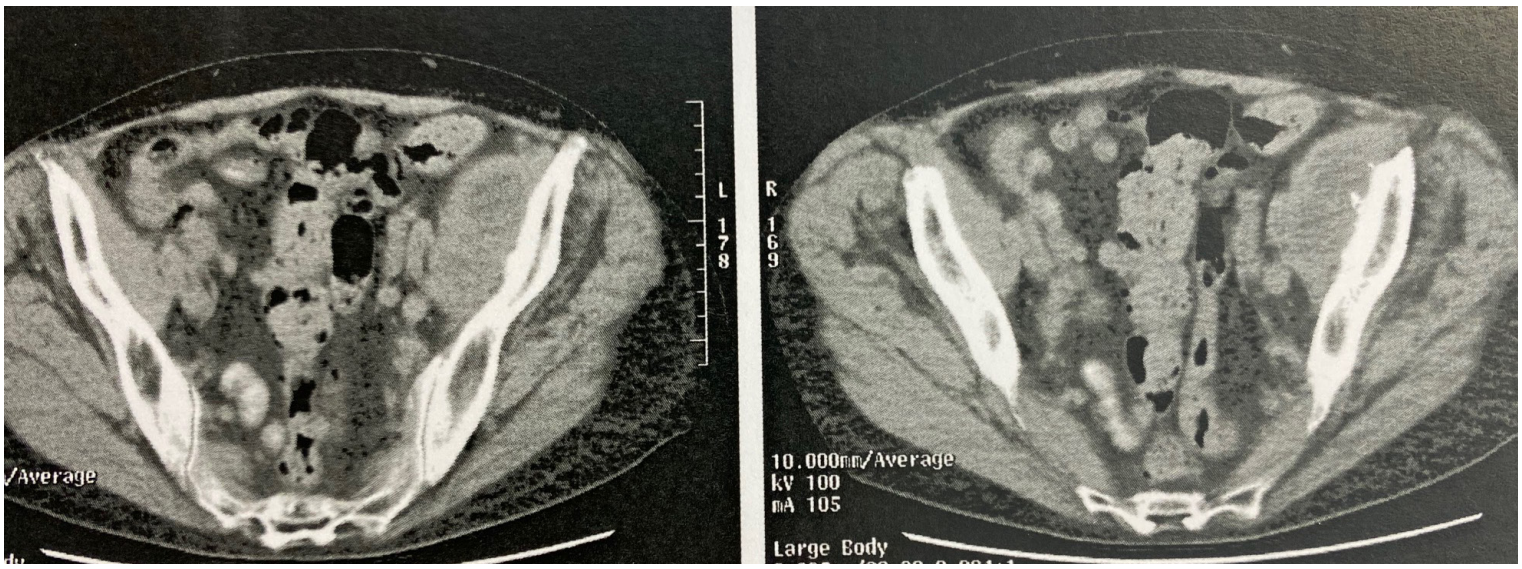
CLINICAL CASE

Hole in the wall

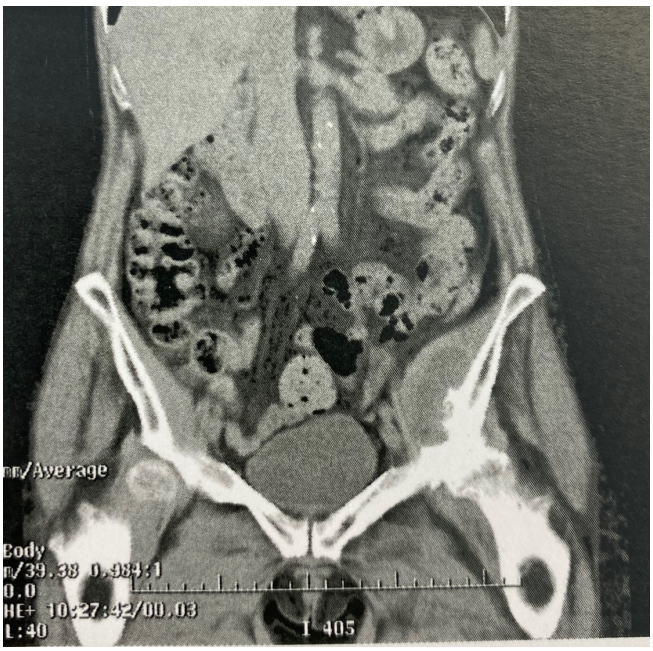
Clinical History

- 74-year-old female
- Complaints of pain and stiffness in buttock and groin of left hip
- History of a fall some few months back which exacerbated the pain, but patient remained ambulatory
- History of left sided sciatic pain which was relieved by 2 corticosteroid injections
- H/O corticosteroid injections in left hip with no relief.
- No H/O any septic process in the hip

GP ordered CT – Reported a pelvic tumor



Patient more concerned regarding tumor in pelvis



On examination – Left hip

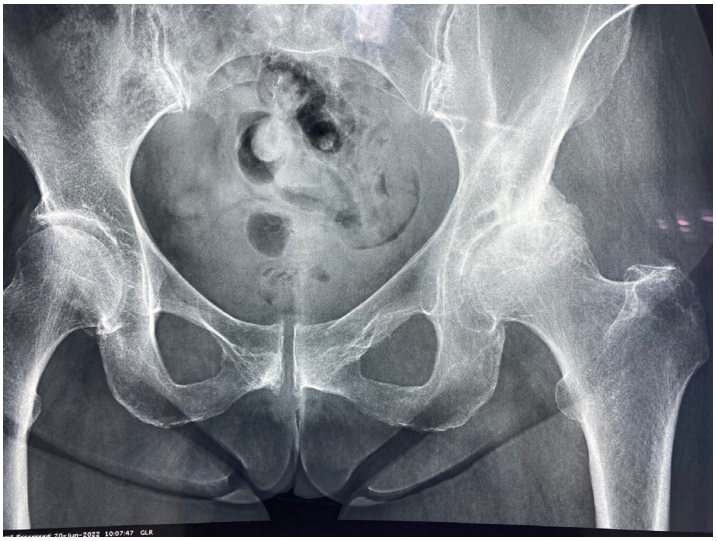
- Fixed flexion deformity of 25 degrees with range of motion to 60 degrees with groin irritability
- Fixed external rotation deformity of 20 degrees with pain on further rotation

X-rays

- Decreased hip joint space.
- Postero-superior osteophytes formation on left hip.
- Deformed left femoral head
- Advanced osteoarthritis of the left hip joint with early osteoarthritis of right hip.

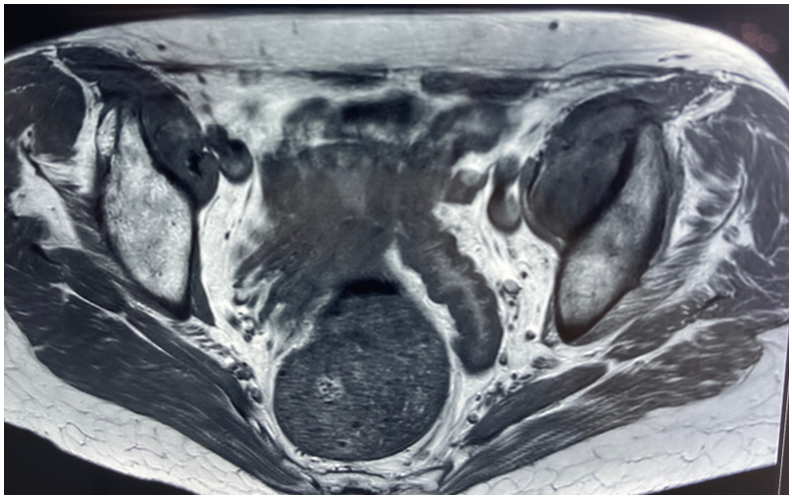
What to do next?

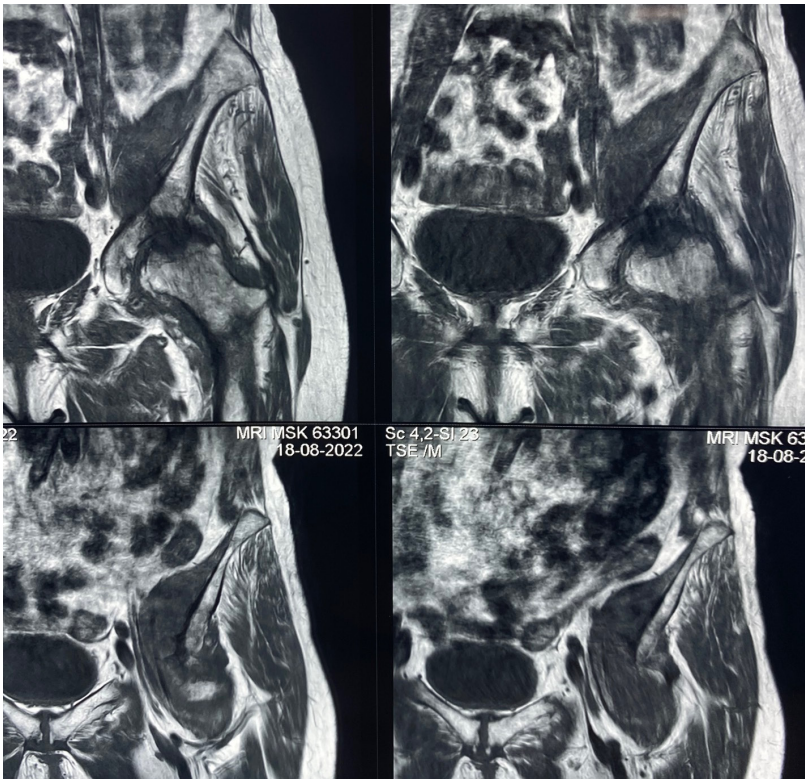
- Does the x-ray justify clinical findings:
  1. Order any other investigation?
  2. What about the tumor?



Blood inv

- Hb: 13.5 mg/dl
- WBC: 5.4
- ESR: 1mm/h
- CRP: 1.4mg/L





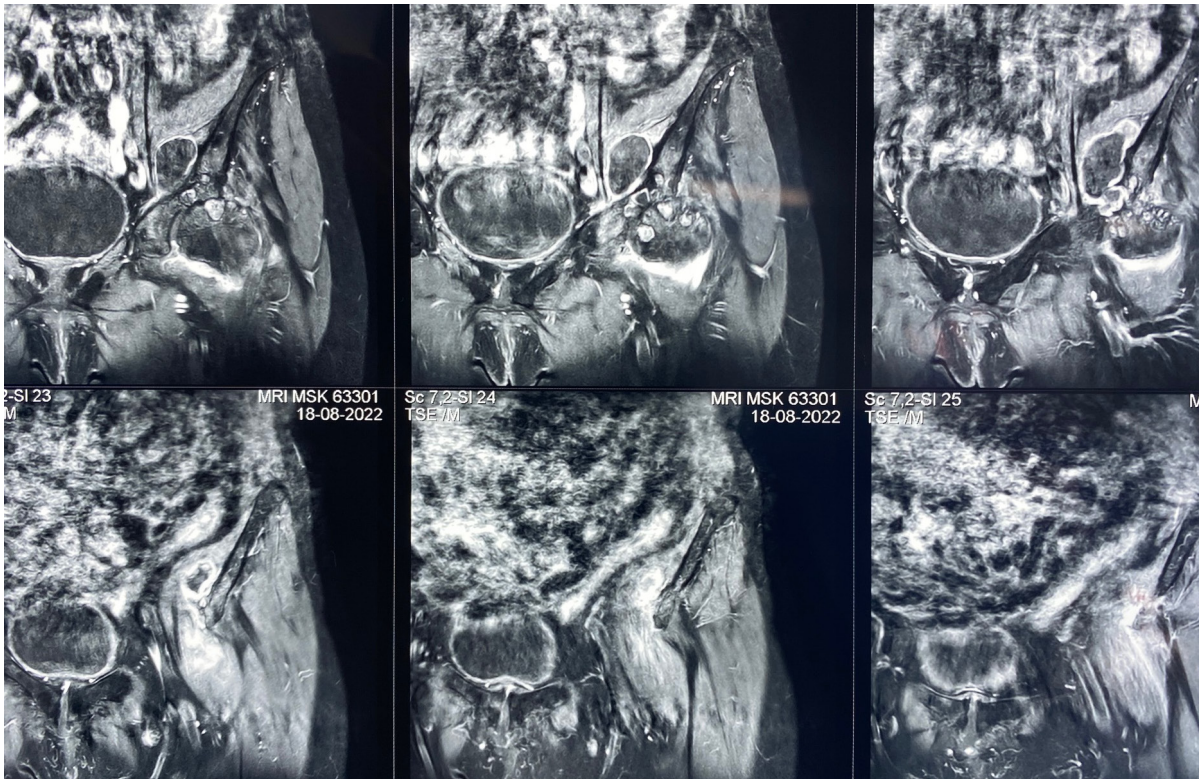


Image guided aspiration of the cyst

- Reported occasional histiocytes in the background of mononuclear inflammatory cells and proteinaceous material without any malignant cells.
- There was on growth on culture of burial fluid after 48hrs of incubation.

Provisional diagnosis

- Advanced osteoarthritis of left hip with communicating iliopsoas cystic ganglion

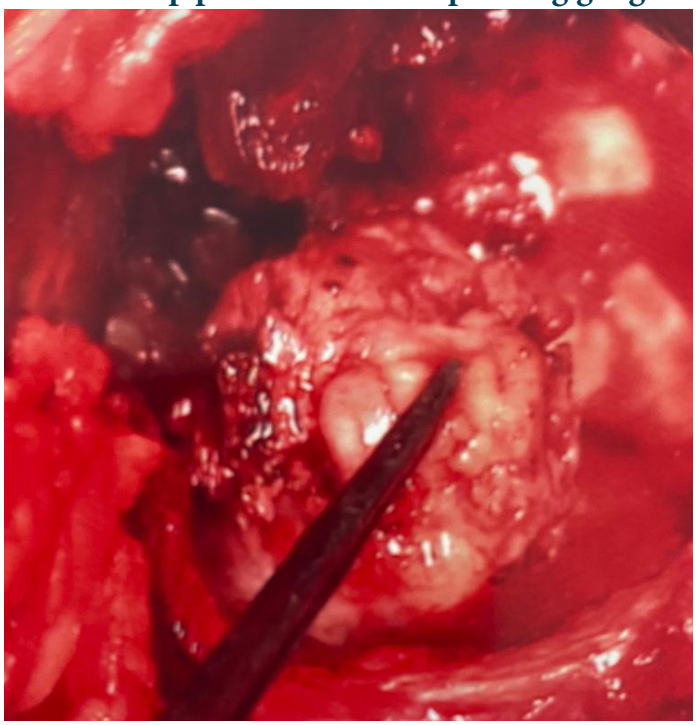
Question ?

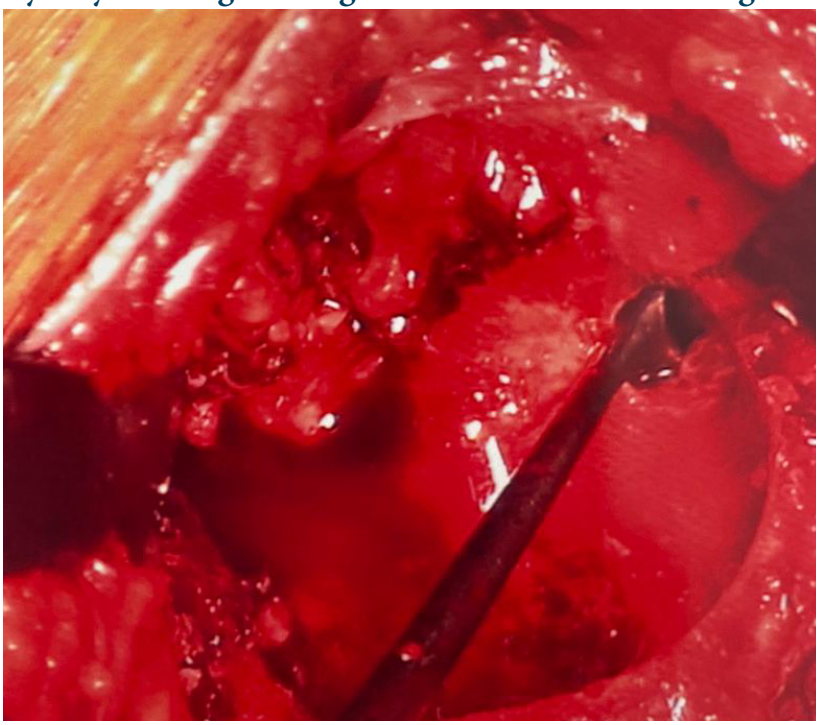
1. Should we treat it conservatively and let the cyst resolve?
2. Should we go ahead with THA with complete excision of cyst and reconstruct acetabulum with cup-cage construct?

Our Management

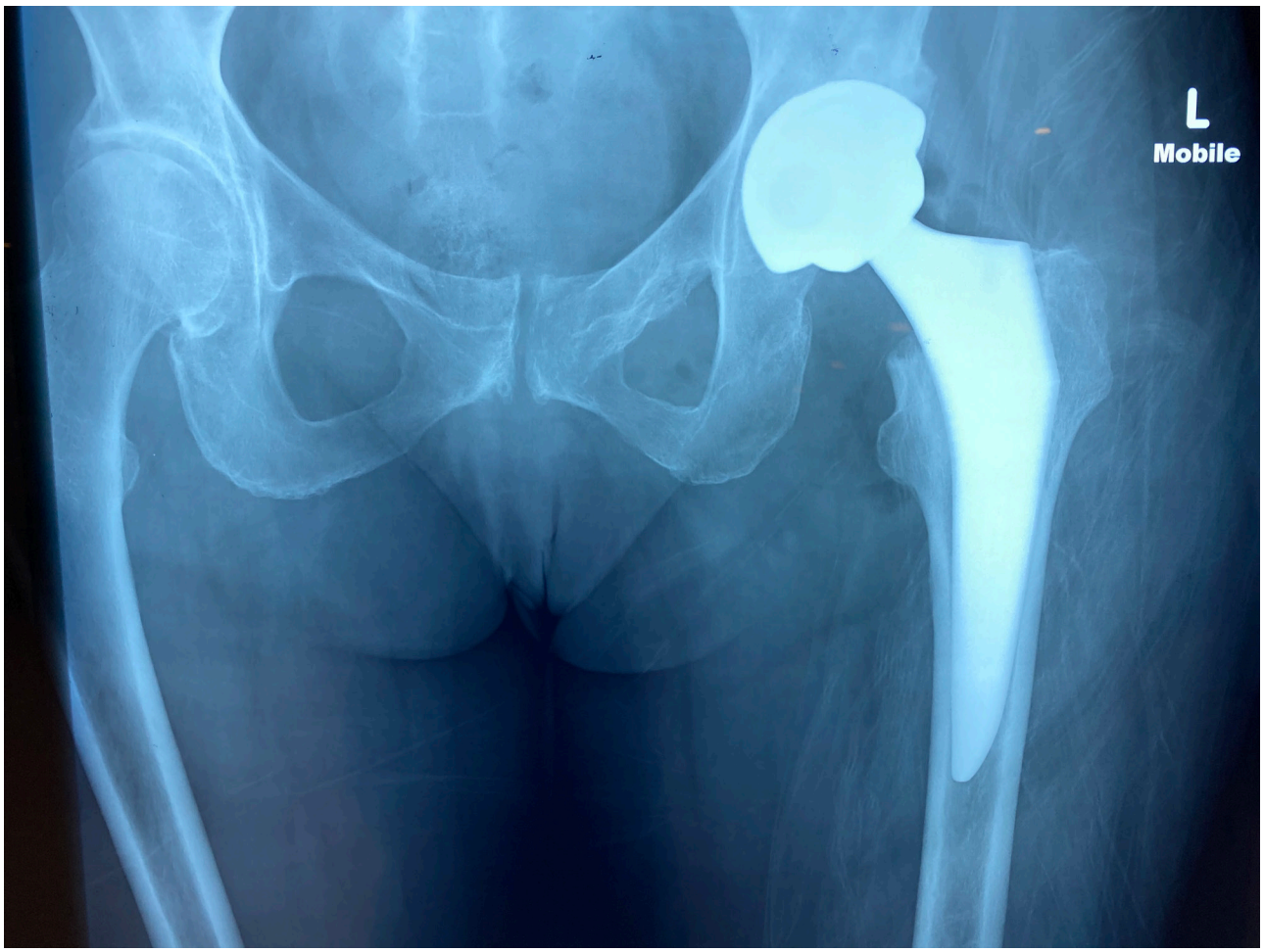
- We proceeded with Total hip Arthroplasty using the posterior approach.
- After exposure of acetabulum, the ganglion cyst was identified after curetting a subchondral cyst that opened into the large ganglion, and curettage done.
- Material was sent for histopathological examination and culture.
- Acetabular reaming was done and cavity in acetabulum was packed with cancellous bone graft before implantation of the cup.

Intra-op pictures – Decompressing ganglion cyst by curettage through acetabulum after reaming





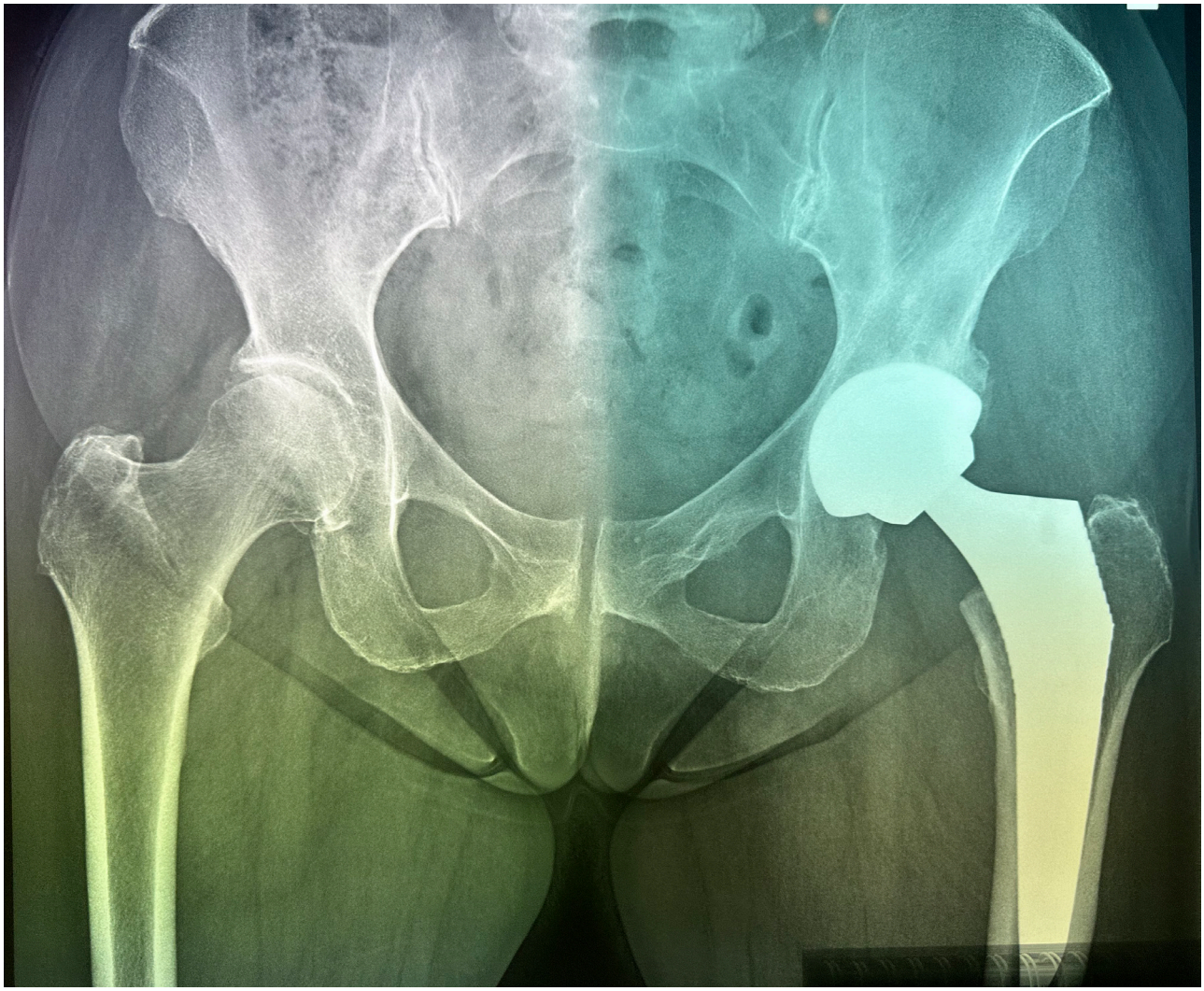
Post-op Xray



Post-Op

- Patient was allowed weight bearing on day 1 with crutches
- Histopathological examination of the curetted sample reported myxoid and fibrinoid debris including degenerate material, suggestive of left hip ganglion
- At 6 weeks follow up, patient is walking pain-free and can do her household chores.

6 Months post op – Pain free and very active



Summary

- A plain radiograph of the pelvis is useful for showing underlying hip joint disorders, but sagittal CT scan or MRI should be performed when symptoms cannot be easily explained by the radiographic findings.
- Therapeutic approaches to cystic lesions of the hip depend on the location, size, symptoms, existence or non-existence of local compression and the suspected pathological nature

Literature Review

- Botchu et al.(2013) reported two cases of ganglion cyst arising from transverse acetabular ligament which were managed by ultrasound guided aspiration and injection of bupivacaine and triamcinolone. He reported complete resolution of symptoms in both patients at 6 month follow-up.
- Gokhale et al.(2021) reported a case with ganglion arising from the psoas tendon, which was managed by excision. There was complete resolution of symptoms at 12 months follow-up.
- Choi et al. (2022) presented a case of left hip joint ganglion extending into the intrapelvic cavity and compressing the sciatic nerve. Patient was managed with laparoscopic excision of cyst with good outcome.
- A number of authors have reported ganglions around the hip, but there is no report or series of patients with large ganglion arising from iliopsoas bursa connecting to the hip joint and associated with osteoarthritis.

- Dr Sarang Agarwal, A/Prof Rami Sorial