



NEWSLETTER

OF

ASIA PACIFIC ARTHROPLASTY SOCIETY

ISSUE 05 | MARCH 2023



I. Introduction.....(2)

- Greetings from the President
- APAS ASM, Cebu 2023 update

II. Fellowship Updates.....(3)

- APAS Women in Arthroplasty Fellowship update
- APAS Travelling Fellowship update

III. Industry Insights.....(5)

- Omnibotics in primary TKA

IV. Clinical Corner.....(6)

- Management of Bone Loss in Revision TKA
- APAS Online Clinical Case Forum

V. Regional Focus.....(11)

- APAS - JSRA Collaboration



*Page - 3
Women in Arthroplasty Fellowship*



*Page - 5
Omnibotics in primary TKA*



*Page - 6
Management of Bone Loss*



Dr. Bharat Mody

Welcare Hospital, Vadodara, India

Dear APAS Members,

It gives me great pleasure to present the APAS newsletter. We offer this as a tiny stimulus towards provoking thoughts and encouraging actions which could add value in your practice as an arthroplasty surgeon. APAS is a vibrant platform and offers great opportunities for all stakeholders in the field of arthroplasty.

In this edition we bring you news about the fellowship programs, the forthcoming Annual Scientific Meetings conducted by APAS, latest developments in arthroplasty technology, and some thought provoking clinical case presentations. We bring regional interactions between professional bodies and encourage all members to become more actively participative on the APAS platform!

APAS ASM, CEBU 2023 UPDATE

This year's Annual Scientific Meeting is being held at the Shangri-La Hotel in Cebu. This will be the first APAS conference in the Philippines and we are looking forward to an excellent program and cultural experience. It shall be scheduled over 3 days from the 21st of August to the 23rd of August.

There will be many international speakers well known to APAS from over 20 countries joining local faculty from the Philippines to share current insights in the advancement and techniques of hip and knee arthroplasty. Over 60 faculty will gather to share their work and scientific endeavours with you via instructional course lectures, presentations, debates, and video technique sessions.

There will also be various small group interactions with faculty

members (limited to 10-15 delegates per group) which shall allow easy dialogue and discussion on burning questions you may have on certain topics. This is a golden opportunity to pick the brains of our talented and vastly experienced faculty members!

As is tradition, join us for the gala dinner on Wednesday night to have a relaxed and candid time with your colleagues, friends and families! It will be a festive and fitting end to the conference before parting ways.

The beautiful hotel and meeting venue is just a 20 min drive away from the Cebu International airport and a short flight away from Manila. The Shangri-La hotel is on 13 hectares of landscaped gardens with a 350 mts wide white sand beach. Moreover, the Shan- gri-La aquatic

marine sanctuary is only a 5 min walk away. Of course this will be for after you enjoy our excellent academic program!

For all members, you can submit your scientific work for presentation in the free papers sessions and, as in past years, there will be best paper awards with cash prizes for your hard work. Please find the [link here](#).

So, on behalf of the scientific committee who have been working very hard to put this together for you, please register now and start making your plans for travel so we can see you in Cebu!

**- Dr. Rami Sorial
Scientific Chairman, APAS**

**Click here to register!
Visit the APAS website for more -
www.apasonline.org**



*21-23 August 2023
Shangri-La, Cebu, Philippines*

II. FELLOWSHIP UPDATES

APAS WOMEN IN ARTHROPLASTY FELLOWSHIP UPDATE



The inaugural four APAS Women in Arthroplasty members

In 2022 at the Bali Hip Knee Summit conference, APAS initiated the Women in Arthroplasty program to support our female arthroplasty colleagues and recognize their contribution to the subspecialty of lower limb arthroplasty. Our inaugural members were A/Prof. Catherine McDougall, A/Prof Claudia di Bella, Dr Azeta Arif and Dr Karina Besinga. Each presented their scientific work and contributed significantly to the activities of the faculty.

Following discussions on how to foster and encourage our younger female colleagues to tread the path of lower limb arthroplasty, APAS is delighted to announce that with the support of Zimmer Biomet we have launched the Women in Arthroplasty Travelling fellowship program.

Two applicants working in the Asia Pacific Region who are at the conclusion of their training, or the commence-



LtoR: Mr Clarence Ngui, Ms Nicqui Chang, Dr Bharat Mody (APAS President), Ms Lauren Johnson, Dr Azeta Arif, A/Prof Rami Sorial, Dr Karina Besinga, A/Prof Claudia di Bella, A/Prof Catherine McDougall, Prof Nicolaas Budhiparama

ment of their professional career will travel to five sites across Australia and Indonesia.

After a period of observing and collaborating with surgeons in this field, the tour will conclude at the APAS ASM in Cebu Philippines. Here they will present both on their experience as well as a scientific paper on an aspect of their work. The fellowship will be fully supported with funds covering flights, transfers and accommodation, as well as a small stipend to cover meals.

The total period for the fellowship will be between four to six weeks and anticipated to run from mid-July to Aug 25, 2023. If this is of interest to you, we encourage you to apply for the fellowship with your CV, covering letter, and a letter of support from a senior arthroplasty mentor. Please forward to pharoah1@bigpond.net.au before March 15.

MESSAGE FROM THE EDITOR'S DESK

Dear members,

It is with great pleasure that we present to you the first edition of the rejuvenated APAS newsletter. This publication will serve as a platform to keep you informed and up-to-date on the latest news, research, and developments in the field of arthroplasty in the Asia Pacific region.

Through this newsletter, we aim to provide you with valuable insights and perspectives from renowned experts in the field, highlight the work of our members, and keep you informed on upcoming events and opportunities. We hope that this newsletter will be a valuable resource for you and that it will help to foster a strong community of arthroplasty professionals in the Asia Pacific region.

We encourage you to provide feedback and suggestions for future editions and to share your own news and accomplishments with us.



Sincerely,
The Editor

Dr. Kshitij Mody
Welcare Hospital, Vadodara, India

APAS – DEPUY SYNTHES TRAVELLING FELLOWSHIP

The Asia Pacific Arthroplasty Society (APAS) Travelling Fellowship, also known as the Depuy Synthes – APAS Travelling Fellowship, was started 7 years back. Every year we select 2 Fellows from across the Asia Pacific region and they travel to four countries to visit the host surgeons and receive excellent exposure to surgery and research work.

This year the APAS Fellows got a chance to visit Malaysia, Australia, Indonesia & India. With a week spent in each country, they were hosted by Dr. David Choon in Malaysia, Dr. Rami Sorial in Australia, Dr. Nicolaas Budhiparama in Indonesia and Dr. Parag Sancheti & Dr. Vijay Bose in India. After the Fellowship in Indonesia concluded, both the Fellows were invited to attend the Combined Hip & Knee Summit in Bali where they also presented a report on their Fellowship experience.



Purpose of the Fellowship

The APAS – DePuy Synthes Travelling Fellowship is intended to foster the international exchange of knowledge and skills in the field of orthopaedic surgery. Coordinated by the APAS Traveling Fellowship Committee, the Fellowship provides the opportunity for Fellows to have the opportunity to observe hip & knee orthopaedic surgeries, discuss the surgical procedures and all aspects of patient management.



Application Requirements

Applicants must be proposed and recommended by a current APAS Member (recommendation letter required). The applicant should be 45 years of age or less and should have completed Orthopaedic formal training with up to 5 years of post-training experience.

Review Process

Applications will be reviewed and successful fellows will be called for a virtual interview.

Documents required for application:

- Application form (uploaded over the website)
- Medical School graduate certi
- MS/DNB/DOrtho/RACS or any formal orthopaedic training certificate
- Recommendation letter from APAS Member
- Medical Council registration certificate
- Fellowships (if any) documents

Fellowship Benefits

The Fellowship will cover economy-class air travel for the fellowship, a small stipend and local accommodation. APAS will waive registration fees for the APAS Annual conference.

Fellows will present a summary of the Fellowship at the APAS Annual conference.

The interview for the forthcoming APAS Depuy Synthes Travelling Fellowship will be held on 15th March 2023.

III. INDUSTRY INSIGHTS

OMNIBOTICS IN PRIMARY TOTAL KNEE ARTHROPLASTY

The Omnibotics platform is an imageless intra operative registration, mapping and planning suite designed to facilitate primary total knee arthroplasty using either the Apex Knee or Unity Knee platforms. It consists of patient mounted robotic instruments made up of the following hardware

1. BalanceBot



- a. The BalanceBot (Figure 1) is a digital joint tensioning device, consisting of two active spacing units for the lateral and medial knee compartments (Figure 1). The device applies a user specified force to the joint and collects intra-operative ligament laxity data. Different forces can be selected for flexion and extension.
- b. In a tibial first workflow, predictive gap planning software is available (Figure 3) which can virtually place the femoral component to render a post-operative gap prediction throughout flexion and then assist resection execution through the integrated robotics platform.

2. OmniBot



- a. The OmniBot (Figure 2) is mounted to the patient and executes the femoral positioning planned by the surgeon following the assessment of the soft tissue envelope.

3. Laptop and screen.



The system can be used to support any primary TKA workflow, including femur first techniques, but is most useful when performing a tibia first workflow utilising its predictive planning and balance capabilities. The surgeon retains total control of the alignment philosophy. The system allows established alignment philosophies such as mechanical alignment, measured resection and hybrid techniques as well as evolving philosophies such as Kinematic Alignment, inverse Kinematic Alignment and Functional Alignment.

Omnibotics particular strength is that the soft tissue envelope is measured objectively with pre-determined joint tension after resection of the proximal tibia and any associated osteophytes. By accessing posterior osteophytes, a truer picture of soft tissue tension can be obtained. Other systems rely on surgeon applied forces which may be subject to variability in addition to the soft tissue assessment being performed prior to osteophyte excision.

Another benefit of the system is that it does not require logistically challenging preoperative X-Ray or CT Scans. As such, there is no reliance on third party engineers or time consuming printed model production as with PSI instrumentation. Intra-operative registration and planning is undertaken by the surgeon.

The hardware consumes a small theatre footprint, taking no extra space compared to a conventional navigation system.

Each case generates an easy-to-read patient specific balance profile which is easily accessible in the post op clinic. As aggregated data, this combination of digitally captured intraoperative data and post operative patient reported outcomes becomes a powerful tool for further analytics, hopefully informing future patient specific planning strategies. As with all technology, there is a learning curve and as the device hardware is reliant on cable connections, good maintenance of the cables and BalanceBot is critical. In summary, the Omnibotics system offers great versatility when planning and executing primary TKA. It gives the surgeon total control of alignment planning, with excellent analysis of the patients own particular soft tissue envelope.



Dr. Simon Coffey
Nepean Hospital, Sydney, Australia

IV. CLINICAL CORNER

MANAGEMENT OF BONE LOSS IN REVISION TKA

60 year old female known case of hypertension, diabetes mellitus presented to our outpatient department (OPD) with complaint of pain in both knees and difficulty in ambulation for 12 months. The severity of pain increased for 3 weeks prior to presentation. Pain in right knee was worst and was associated with instability. She had a lurching gait and used walking aid for ambulation. She had history of right primary total knee arthroplasty (TKA) with all poly tibia component performed elsewhere 10 years ago. Her post-operative recovery was uneventful.



Fig.1a: Standing radiographs of AP view of both knees. Right knee shows All Poly tibial implant with severe bone loss on medial side along with stress fracture of fibula. Left knee shows features of advanced knee Osteoarthritis (OA).

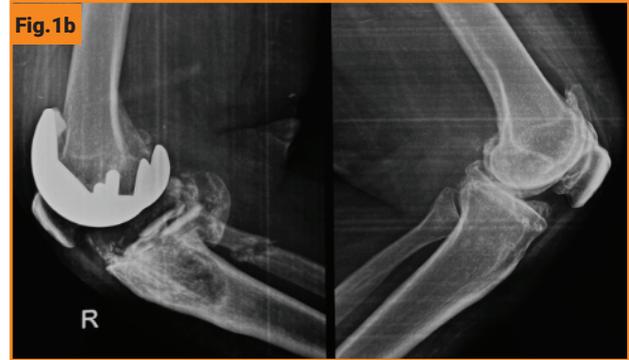


Fig.1b: Lateral view right knee shows posterior bone loss. Left knee reveals features of advanced knee OA.

EXAMINATION FINDINGS

Right knee:

- Varus stress test positive.
- Varus thrust gait.
- Overlying skin condition normal.
- Range of motion 0-120 degree.
- Distal neurovascular status was intact.

INVESTIGATIONS:

- Complete blood count (CBC)-White cell count within normal limit.
- C-Reactive Protein and Erythrocyte sedimentation rate- Within normal limit.

FINAL DIAGNOSIS:

Based on history, examination and investigation our diagnosis is right knee aseptic loosening with significant metaphyseal bone loss.

RECONSTRUCTIVE PLANNING:

- Assessment and management of bone loss.
- To achieve stability by use of appropriate constrained implant.
- It was decided to do bilateral total knee replacement and use bone from left knee in reconstruction of right tibial defect.

Left knee:

- Varus deformity.
- Range of motion 0-120 degree.
- Distal neurovascular status was intact.
- Overlying skin condition normal.

CONCEPT OF ZONAL FIXATION⁽¹⁾

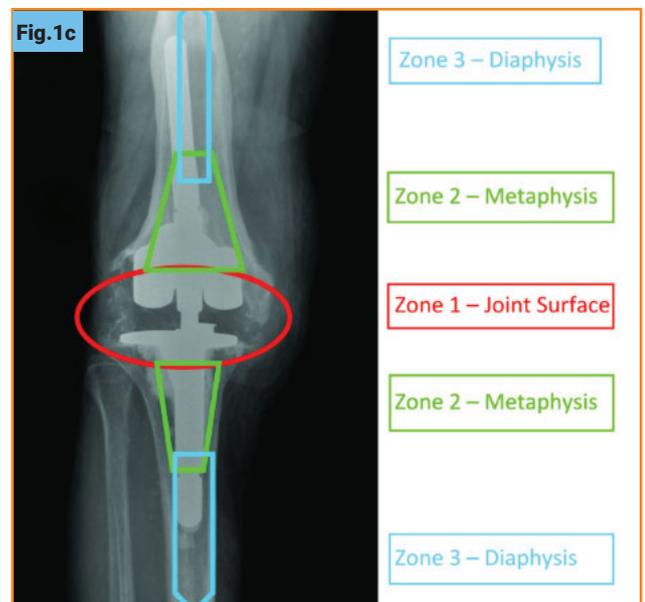


Fig.1c: Zonal Fixation Concept

■ SPECIALTY UPDATE: KNEE

Zonal fixation in revision total knee arthroplasty

R. Morgan-Jones,
S. I. S. Oussedik,
H. Graichen,
F. S. Haddad

From University
College London

Revision knee arthroplasty presents a number of challenges, not least of which is obtaining solid primary fixation of implants into host bone. Three anatomical zones exist within both femur and tibia which can be used to support revision implants. These consist of the joint surface or epiphysis, the metaphysis and the diaphysis. The methods by which fixation in each zone can be obtained are discussed. The authors suggest that solid fixation should be obtained in at least two of the three zones and emphasise the importance of pre-operative planning and implant selection.

AORI BONE LOSS CLASSIFICATION

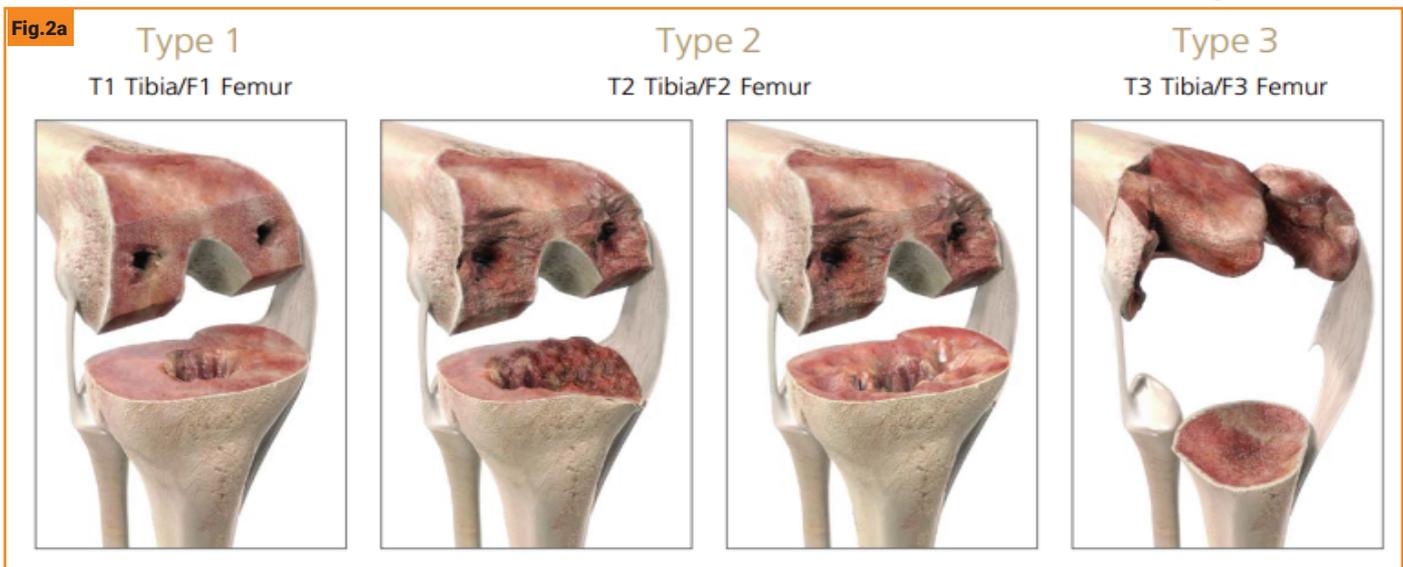


Fig 2a: AORI Bone Loss Classification

LEFT PRIMARY TKA

- Primary left total knee replacement was done first by using PS implant. Bone was preserved and used for reconstruction of right tibia defect.

RIGHT REVISION TKA

- Standard midline longitudinal incision with medial para-patellar approach was used. Tibial component was loose and easily removed. Synovial fluid and deep tissue were taken for culture and sensitivity.
- Medial and postero-medial wall was deficient and there was significant metaphyseal bone loss.
- Tibial platform was reconstructed using metaphyseal sleeve and stem. Postero-medial bone loss was restored with impaction bone grafting.
- Coronal and sagittal plane stability was restored by using PS type implant.

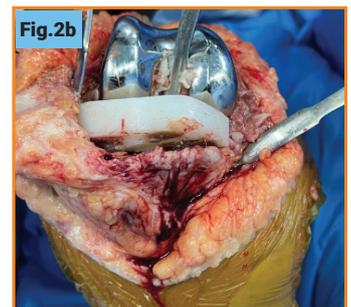


Fig.2b: Medial para-patellar arthrotomy was performed for removal of previous implant. INTRA-OPERATIVE ASSESSMENT & RECONSTRUCTION:

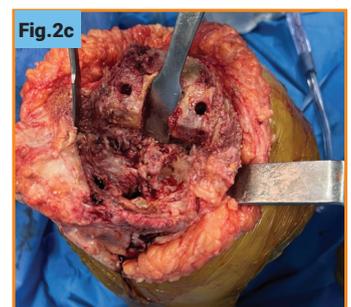


Fig.2c: After removal of femoral and tibial component, assessment of bone loss was performed and was classified according to AORI classification.

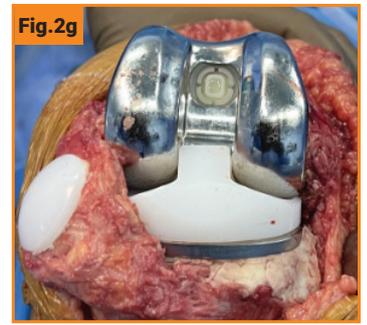
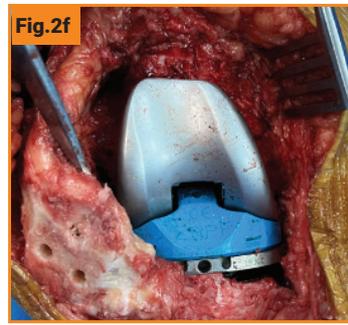
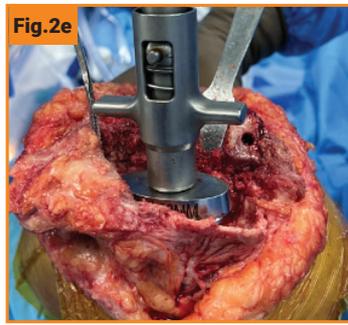
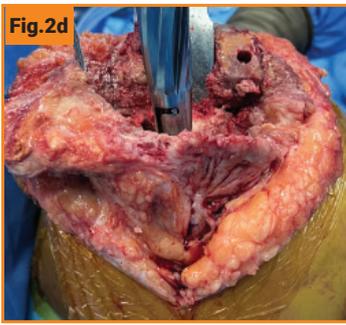


Fig.2d, 2e, 2f, 2g: Canal preparation followed by implant trial and final implantation.

IMMEDIATE POST-OPERATIVE RADIOGRAPHS



Fig. 3a & 3b: AP and Lateral view of PS type implant with stem and metaphyseal sleeves in tibia.

POST-OPERATIVE RADIOGRAPHS OF LEFT KNEE



Fig 3c, 3d: AP and lateral view of left knee showing PS type implant

POST-OPERATIVE MOBILIZATION AND RAHABILITATION

- Patient is mobilized full-weight bearing immediately post-operatively using walker frame and under supervision of physiotherapist.
- Knee range of motion exercises was started immediately.
- At one month post-operatively patient was pain-free and was mobilizing without any assistance. Her gait had improved significantly.

POST-OPERATIVE RADIOGRAPHS AT 3 MONTHS



Fig. 3e & 3f: At 3 months post-operatively.

DISCUSSION

The number of TKA is increasing by every passing year. Because of excellent long-term survivorship, TKA is nowadays recommended procedure even in relatively younger age group (2). As a result; surgeons are encountering more and more revision knees. Modern-day TKA prosthesis are designed keeping in view the concept of zonal fixation. In simple primary knee, there is little or no bone loss near the joint line so after routine cuts; ample bone stock is available for a solid bone-implant fixation. Hence, it is the zone 1 (epiphysis) of tibia or femur, where the fixation of component takes place in simple primary TKA (3). This is not the case in AORI type II or III bone loss. In such cases, metaphyseal sleeves and trabecular metal cones are one of few options. The goal in such cases is to achieve fixation in metaphysis and diaphysis of bone (zone II and III, respectively). Metaphyseal sleeves are porous coated that initiates bone ingrowth in metaphyseal part of bone. Moreover, these sleeves fill the bone loss (AORI types II and III) (4). Metaphyseal sleeve also avoids stress shielding; hence, it improves bone quality. There are several studies that demonstrated good bony ingrowth in the metaphyseal region because of porous coated sleeves. According to Fedorka CJ et al. (5), out of 74 cases, bone ingrowth was confirmed radiologically in 69 cases. Studies worldwide have shown excellent survivorship of metaphyseal sleeves ranging from 98% to 100%. In the study by Alexander et al. (6), Agarwal et al. (7), not a single revision surgery was done because of aseptic loosening.

CONCLUSION

Metaphyseal sleeves are excellent and feasible option for the management of bone metaphyseal defects in revision TKA (AORI type II and III). There are chances of intra-operative complications like iatrogenic fracture which if addressed properly, has no negative effect on outcome.

REFERENCES

1. Morgan-Jones R, Oussedik SI, Graichen H, Haddad FS. Zonal fixation in revision total knee arthroplasty. *The bone & joint journal*. 2015 Feb;97(2):147-9.
2. Lee JK, Choi CH (2011) Management of tibial bone defects with metal augmentation in primary total knee replacement: a minimum five-year review. *J Bone Joint Surg* 93:1493–1496
3. Chalmers BP, Desy NM, Pagnano MW, Trousdale RT, Taunton MJ. Survivorship of metaphyseal sleeves in revision total knee arthroplasty. *The Journal of Arthroplasty*. 2017 May 1;32(5):1565-70.
4. Graichen H, Scior W, Strauch M (2015) Direct, cementless, metaphyseal fixation in knee revision arthroplasty with sleeve: short term results. *J Arthroplasty* 30(12):2256–2259
5. Fedorka CJ, Chen AF, Pagnotto MR, Crossett LS, Klatt BA (2017) Revision total knee arthroplasty with porous-coated metaphyseal sleeves provides radiographic ingrowth and stable fixation. *Knee Surg Sports Traumatol Arthrosc* 26(5):1500–1505
6. Alexander GE, Bernasek TL, Crank RL, Haidukewych GJ (2013) Cementless metaphyseal sleeves used for large tibial defects in revision total knee arthroplasty. *J Arthroplasty* 28:604–607
7. Agarwal S, Azam A, Morgan-Jones R (2013) Metal metaphyseal sleeves in revision total knee replacement. *Bone Joint J* 95:1640–1644



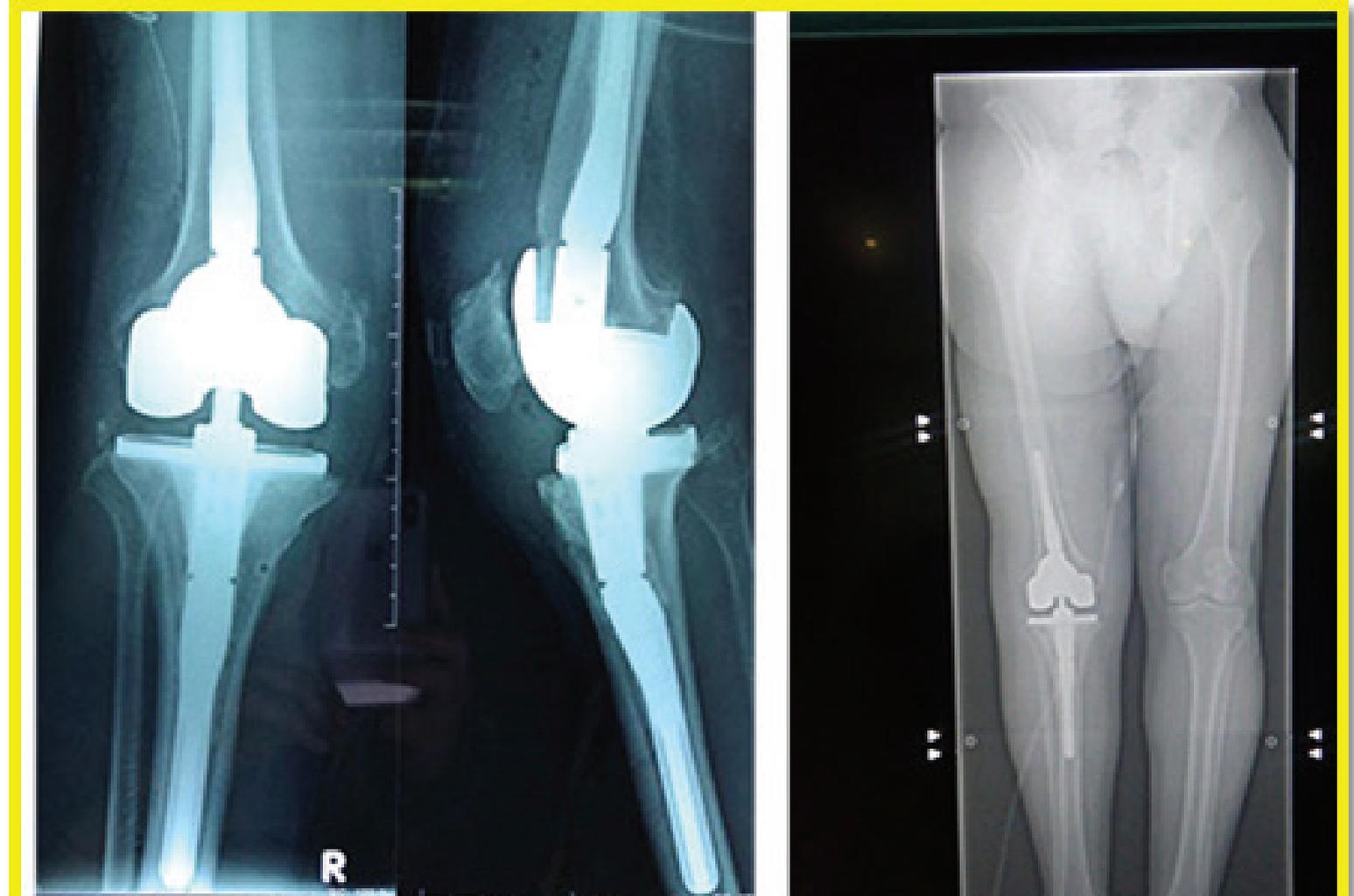
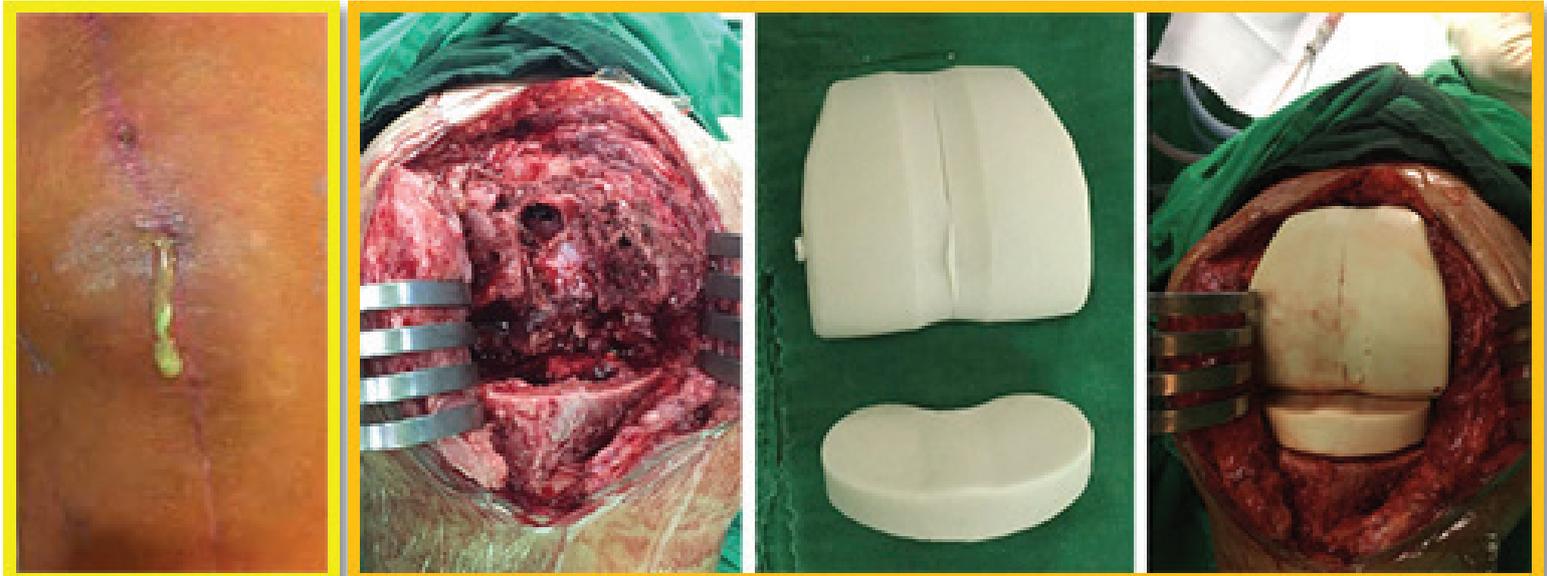
CLINICAL CASE FORUM ON APAS WEBSITE

Dear Members,

We invite you to visit the online Clinical Case forum on the APAS website. Here, you can explore fascinating cases posted by senior arthroplasty surgeons from all corners of the globe and participate in active discussions. With a wealth of knowledge and experience at their fingertips, our esteemed colleagues are sure to showcase some of the most interesting and challenging cases in the field. Don't miss out on this invaluable opportunity to learn and engage with fellow experts!

Case - 1

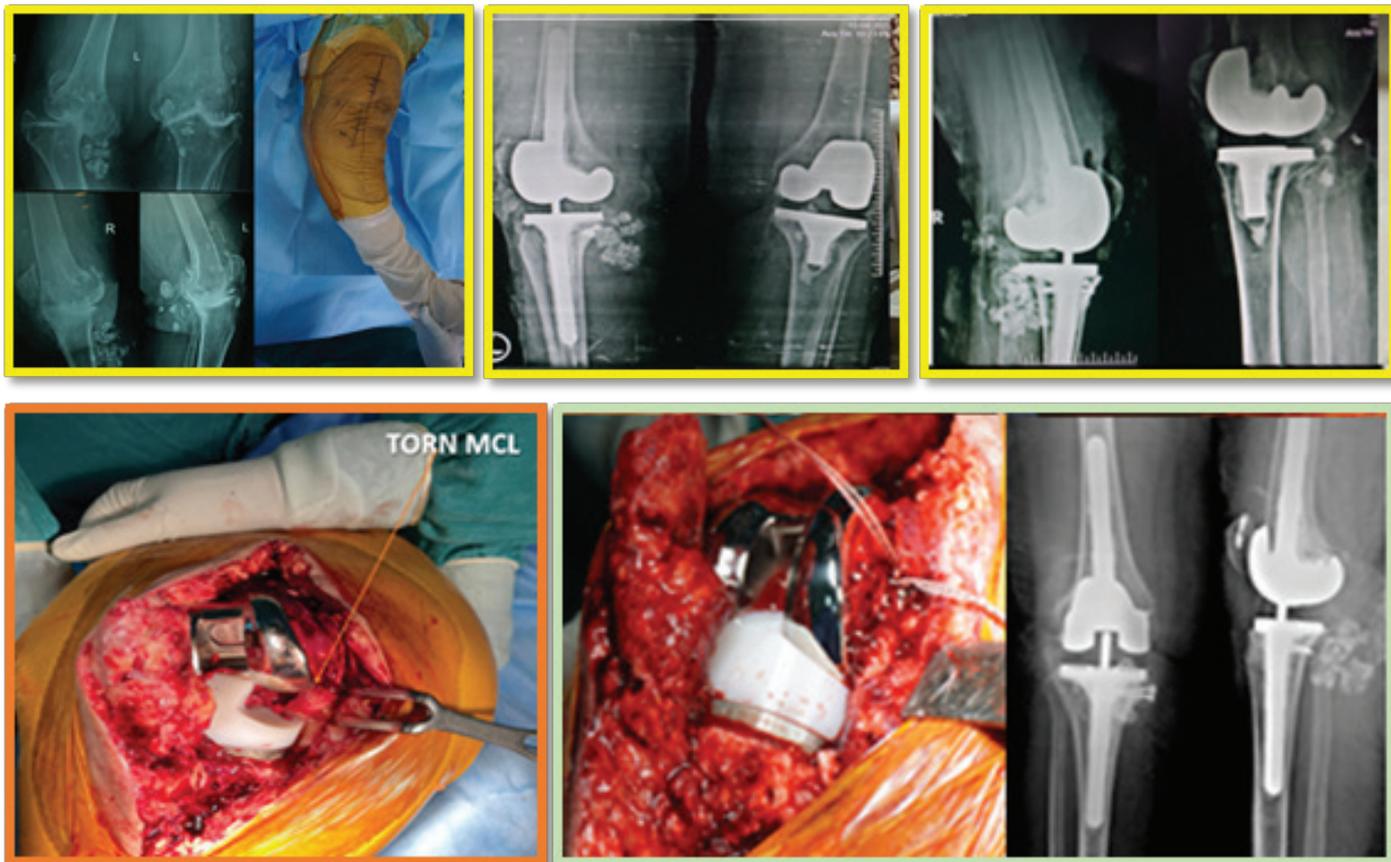
Last month, **Dr Azeta Arif** from Indonesia published an interesting case of Septic Revision TKA - Staged approach. Post-TKA patient presented with discharge from surgical site. Gold standard 2-stage revision was done successfully using mobile antibiotic spacers in first stage and revision implant in second stage.



Case - 2

Dr Rajeev Sharma and team published an interesting case on "Management of post-TKA compromised extensor mechanism & deficient medial collateral ligament" in a 73 y/o female with gross varus deformity and severely osteoporotic bones. Patient was successfully treated with adequate varus release using semi-constrained implant on right side.

Patient had a fall 15 days after primary surgery and presented with fractured patella and ruptured MCL on right side. Repair of proximal pole of patella with anchor suture and fibre wire along with repair of MCL using 5mm suture anchor was done.



Patient suffered another fall 4 months later and subsequently ruptured her quadriceps tendon. Quadriceps repair was performed along with augmentation using peronei graft passed through double tunnel trans-osseus passage in patella.



Click here to join the discussion!



V. REGIONAL FOCUS

APAS AND JSRA COLLABORATION AND INVITATION TO JOIN JSRA ASM IN YOKOHAMA

Back in 2021, I was asked by Shuichi Matsuda, the President of The Japanese Society for Replacement Arthroplasty (JSRA) during my presidency for APAS to be the guest society for the 53rd annual meeting of JSRA.



Previously they have invited AAHKS and European Hip Society-Knee Society, and this year APAS had the privilege to be the guest society for 2023.

They requested to have two hip surgeons and two knee surgeons from APAS to share our knowledge in this collaboration. It was an honor to collaborate in this JSRA-APAS Instructional Course. It was a great opportunity to strengthen the relationships APAS has with other societies in the Asia Pacific region. The good relationship we have with Japan can also be seen through several international representatives that APAS already has from Japan, namely Shuichi Matsuda as the president of JSRA, Shinro Takai, and Kazutaka Sugimoto who are all part of the JSRA.

I ended up selecting some of APAS best surgeon representatives. For the Hip symposium, we had Rami Sorial from Sydney, Australia and Yixin Zhou from Beijing, China. For the Knee symposium along with me was Chun Hoi Yan from Hongkong.

The 2 years of preparation brought us all together to Yokoha-

ma on February 16th, 2023 where we were introduced at the Presidential Banquet Dinner. The following day each of the 4 members delivered an instructional lecture and then participated in the hip and



Dr Nico and Dr Rami Sorial with Prof Shuichi Matsuda (President, JSRA) and Dr Ken Okazaki

knee symposia with each delivering another presentation and panel discussion. The meeting was great, but meeting with some of our old friends and colleagues to learn and update ourselves was the height of the event. Japan has been known as one of the best in its advancement of arthroplasty. During this meeting, we also brought up the possibility of having exchange programs

between APAS and JSRA in the future to further strengthen our relationship. I believe future collaborations and projects would be to the benefit of both societies.

At the conclusion of the days academic activity, we were invited to an APAS Welcome Dinner hosted by the President of Congress, Prof. Takuya Otani, and the President of JSRA, Prof. Shuichi Matsuda along with the board of JSRA. At first, we were confused as to why they invited us to dine at a Chinese restaurant while in Japan, but later on, we found out that this is the best Chinese food that we have ever had. We are grateful for the hospitality of our friends in JSRA.



Dr. Nicolaas Budhiparama
Jakarta, Indonesia
Past President, APAS