



73rd  
Annual  
Congress  
(Virtual)  
16-18 June 2022

# GITING AT GALING

(COURAGE AND INGENUITY)



SOUVENIR  
PROGRAM

# GITING AT GALING

(COURAGE AND INGENUITY)

*With the theme Giting at Galing (Courage & Ingenuity), the Philippine Orthopaedic Association (POA) will hold its annual convention this June 16-18, 2022!*

*The 73rd Annual Convention has a surprising but necessary change of date from its traditional November schedule to give way to the POA's hosting on November 24-26 of the 22nd Congress of the Asia Pacific Orthopaedic Association (APOA), in celebration of the APOA's 60th Founding Anniversary. Both conventions will remain virtual with real-time online interactions among participants.*

*This annual convention aims to feature the adaptation to the COVID-19 pandemic by Orthopaedic surgeons in various subspecialties. With lectures, panel discussions, and interactive sessions, this convention promises to be educational and engaging. So mark your calendars and join us for an unforgettable experience!*

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## MESSAGES

Dear POA Fellows,

Your POA Board is working hard to ensure that the pandemic will not hamper learning and camaraderie. The 73rd Annual Convention will be held from 16-18 June 2022 via virtual platform to help guarantee our safety from Covid exposure. While we realize how much we need face to face meetings, it was decided that for now at least, the format needs to remain online. Our 73rd meeting likewise needed to be held earlier to give way to our distinction of hosting the 22nd Congress of the Asia Pacific Orthopedic Association on 24-26 November 2022.

Headed by Dr David Alagar and his scientific committee, the 73rd Annual POA Convention still promises to give you even more relevant and applicable information, sourced from Filipino experts, to speak on Filipino issues within Filipino soil. So join us as we excitedly look forward and prepare for this unique Annual Convention!

Thank you very much.

**FREDERIC JOSEPH F. DIYCO, MD, FPOA**  
*President*

## MESSAGES

Dear Colleagues and Friends,

Mapagpalayang bati sa inyong lahat!

June is the country's independence month, and as orthopedic surgeons, what better way to commemorate it than to recognize our very own orthopedic heroes who continued to treat despite the threats and restrictions of the pandemic?

On behalf of the POA Board of Trustees and the members of the organizing committee, I proudly invite everyone to our 73rd Annual Convention, with the theme "Giting at Galing", in celebration of the courage and ingenuity of our POA Fellows these past two years. We have shown that we can adjust, adapt, and innovate in the practice of our profession when confronted with restrictions, challenges, and even serious risks to one's health.

The scientific committee boasts of a wide variety of relevant topics and interesting ideas in the program, which will more than make up for the fewer sessions lined up. Aptly described as "lean and mean", innovations and novel ideas of orthopedic treatment employed during this pandemic will be thoroughly expounded on by our homegrown experts from the different subspecialty fields. All lectures will be in virtual plenary room with live case discussions at the end of each session. The free paper, podium, and residents' research presentations remain highly anticipated this year. To add to the excitement is the inaugural participation of the Philippine Board of Orthopedics, the Orthopedic Research Society, and the Orthopedic Education Council in the scientific program. I have nothing but great respect for the officers of these organizations, especially the subspecialty societies, local chapters, and training institutions, as well as gratitude for their full support and cooperation in the preparations of the convention.

Not to be upstaged is our keynote speaker who is well renowned and respected, and exemplifies the creativity, courage, and excellence in his orthopedic career. The opening and closing ceremonies will follow our traditional rites, but with added glitter and surprises for everyone's entertainment. It is our intention that we not only learn something different and new, but also have an enjoyable time with friends and colleagues despite the virtual and remote set-up. Hopefully, this will be the transition we all yearn for, as we move forward and regain our freedom to meet face-to-face again... soon.

Mabuhay ang POA!

**DAVID L. ALAGAR, MD, FPOA**  
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73RD PHILIPPINE ORTHOPAEDIC ASSOCIATION



**Edward V. A. Lim**  
Keynote Speaker

An Orthopedic Surgery practitioner specialising in hip, knee, and shoulder replacements and the current Director of the Division of Orthopedic Surgery at The Christ Hospital in Ohio, USA.

**GITING AT GALING**  
(COVERAGE AND INCENTIVITY)

EDWARD V.A. LIM, MD  
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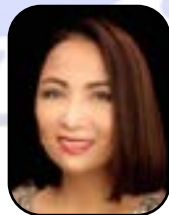
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## 16 JUNE 2022

- 8:00-10:00 Research Presentations  
Free Papers ▶  
Residents' Research Forum ▶
- 10:00-10:30 Snack Symposium: Fonterra ▶
- 10:30-12:30 Opening Ceremony ▶
- 12:30-1:00 Lunch Symposium: A. Menarini Phils. ▶
- 1:00-2:00 Philippine Society of Women Orthopedic Surgeons, Inc. ▶  
*Moderator: Dr. Ameena Tara X. Santos*
- Post-Menopausal Osteoporosis: To Treat or Not to Treat - Dr. Ma. Felma S. Rayel
  - Revisiting Conservative Management of Acute Osteoporotic Vertebral Fractures (In The Setting Of Covid-19 Pandemic) - Dr. Anne Kathleen B. Ganal – Antonio
  - Delayed Management of Osteoporotic Vertebral Compression Fractures - Dr. Ana Rosario P. Sta. Ana – Famador
  - Impact of Covid-19 Pandemic and Difficulty in Management of Neglected Osteoporotic Fragility Fractures of the Hip - Dr. Dyan F. Pangilinan – Docena
- 2:00-3:00 Philippine Orthopedic Wound Care and Diabetic Limb Society ▶  
*Moderators: Dr. Jonathan C. Ronquillo / Dr. Roberto Gabriel I. Lopez*
- Wound Care management in the time of COVID: Face to Face (A Butuan Doctor's Hospital Experience) - Dr. Jerome Anthony Asuncion
  - Impact of Telemedicine in Treating Non-Healing Wounds at University of Cebu Medical Center (UCMED) Wound Care Center During COVID-19 Pandemic - Dr. Pierre Mella
  - CocoPatch: Proudly Philippine Made - Mr. Denver O. Chicano, RN, RT, EMT
  - Management of Complex Wounds – An Interesting Case Presentation - Dr. Lendell Gatchalian
- 3:00-3:45 Snack Symposium: 3M



# PROGRAM OF ACTIVITIES

- 3:45-4:45 Philippine Spine Society ▶  
*Moderator: Dr. Richard V. Condor*
- Spine Metastasis Treatment Algorithm during the COVID-19 Pandemic :
  - A Minimally Invasive and Multi-disciplinary Approach in Addressing Spine Problem - Dr. Pierre Mella
  - Optimizing Management of Pott's Disease during the COVID pandemic - Dr. Jeffrey Arbatin
  - Spine Trauma Care During the COVID-19 Pandemic - Dr. Ryan Conrad Carnero
- 4:45-5:45 Philippine Musculoskeletal Tumor Society ▶  
*Moderators: Dr. Ivan John P. Concepcion / Dr. Marie Jeanne L. Bertol*
- COVID-19 and the Collateral Damage on Musculoskeletal Tumor Care - Dr. Rafael Claudio
  - Management Of Bone Tumors In A Military Hospital During The Covid-19 Pandemic - Dr. Dennis Abadilla
  - Management Of Orthopedic Tumor Cases During Pandemic In The Cordillera Region - Dr. Isagani Garin
  - Delayed Endoprosthetic Reconstruction in a Failed Fixation of a Pathologic Subtrochanteric Fracture of the Right Femur - Dr. Neilson Palabrica
  - Musculoskeletal Tumor Care In The Time Of The Pandemic - Dr. Albert Quintos

## 17 JUNE 2022

- 8:00-9:00 Philippine Shoulder Society ▶  
*Moderator : Dr. Albert Cesar S. Faller Jr.*
- Acute Proximal Humerus Fracture Dislocation: When is it safe to Reduce? - Dr. Patrick Dizon
  - Chronic, Locked Anterior Shoulder Dislocation in the Elderly. A Problem-Based Approach - Dr. Jonathan Ronquillo
- Moderator: Dr. Victor Felix S. Gaddi*
- A Novel JPS Technique in AcromioClavicular Joint Reconstruction - Dr. Jason Paul Santiago
  - Current Concepts in Chronic AC Joint Injuries - Dr. Carlo Angelo V. Borbon
  - *Moderator Dr. Antonio R. Puti*
  - Tendon Releases for Moderate to Large Rotator Cuff Lesions - Dr. Jeremy James C. Munji
  - Arthroscopic-Assisted Latissimus Dorsi Transfer For Massive Irreparable Rotator Cuff Tear - Dr. Chauncey Kester Lim
  - Irreparable Rotator Cuff Tears Reconstructed with Interpositional Patch (ePTFE and Fascia Lata Graft) and Superior Capsular Reconstruction - Dr. Jonathan C. Ronquillo
- Moderator: Dr. Manuel V. Pecson III*
- Distal Clavicle Fracture - Minimally Invasive Option - Dr. Juan Carlos S. Paredes
  - Distal Clavicle Fracture Fixation Using Precontoured Locked Plate and Suspension Suture Button Fixation - Dr. Kristine R. Italia
  - Hook Plate Fixation for Displaced Distal Clavicular Fracture - Dr. Janos F. Vizcayno Jr.
- 9:00-10:00 Philippine Orthopedic Trauma Society ▶  
*Moderator: Dr. Joseph Garvy L. Lai*
- Fragility Hip Fracture Management During the Covid-19 Pandemic: A Multi-Center Experience From a Country With an Emerging Economy - Dr. Bernardino Alpuerto II
  - Acute Surgical Management of Covid-19 positive Elderly Patients with Hip Fractures - Dr. Irewin Tabu
  - Multicenter Implementation of Orthogeriatrics and the FLS - Dr. Giorgio Delgado

10:00-10:30 Snack Symposium: The Cathay Drug ▶

## PROGRAM OF ACTIVITIES

- 10:30-11:30 Philippine Hip and Knee Society ▶  
*Moderator: Dr. Joaquin C. Pandanan*
- First Person Surgical Recording In Total Joint Replacement: Sharing the Surgeon's Perspective - Dr. Jose Antonio San Juan
  - Fragment Retaining Hip Arthroplasty for Unstable Intertrochanteric Fractures (or how we learned to save the neck) - Dr. Hermino Valenzuela
  - Ten Tips When Performing TKR - Dr. Jose Fernando Syquia
  - Direct Anterior Approach for Primary Total Hip Replacement: POC Experience - Dr. Joel V. Baron
- 11:30-12:30 Association for the Study and Application of the Method of Ilizarov ▶  
*Moderator: Dr. Juanito S. Javier*
- WALANT for Upper Extremity Ilizarov - Dr. Cosette Esmeralda C. Atutubo
  - Chronic Elbow Dislocations During The Pandemic - Dr. Gracia Cielo E. Balce
  - Untreated Orthopedic Trauma: Perspectives from Ilizarov Surgery - Dr. Daniel V. Dungca
  - Untreated Fracture Of The Tibia And Fibula - Dr. Paolo M. Ramirez
- 12:30-1:15 Lunch Symposium: Johnson & Johnson ▶
- 1:15-2:15 Association of Hand Surgeons of the Philippines ▶  
*Moderators: Dr. John Hubert C. Pua / Dr. Eugenio Brito*
- Walant For Upper Extremity Fracture Fixation: A Pandemic Local Experience - Dr. Raymar L Sibonga
  - Management of Neglected Flexor Tendon Injury (Zone 2): "The Twilight Zone" - Dr. David L. Alagar
  - Distal radius Malunion: Corrective Osteotomy Using a Rectangular-shaped Iliac Bone Graft and Volar Plating - Dr. Henry Gerard M. Calleja
- 2:15-3:15 Philippine Orthopedic Society for Sports Medicine ▶  
*Moderator: Dr. Carmelo L. Braganza*
- Arthrofibrosis of the Knee: Open versus Arthroscopic Release - Dr. Patrick Dizon
  - Arthroscopy Simulation – Coping With The Challenges In Training During The Pandemic - Dr. Patrick Dizon
  - Patellofemoral Disorders During the Pandemic - Dr. Enrique Leonardo C. Pasion

## PROGRAM OF ACTIVITIES

- Neglected Patellar Tendon Ruptures: Rebuilding Bridges - Dr. Raphael Angelo C. Jurilla
  - Coping and Scoping: Sports Orthopedics Training During the COVID-19 Pandemic - Dr. Patrick H. How
  - Knee Arthroscopy Simulation: The CHH Model - Dr. Jose Antonio G. San Juan
- 3:15-3:45 Snack Symposium: ZP Amgen ▶
- 3:45-4:45 Philippine Orthopedic Foot and Ankle Society
- *Moderator: Dr. Joana Francesca B. Visperas*
  - Ankle Fusions, What is Currently Available - Dr. Michael Thomas T. Gonzales
  - WALANT for Soft Tissue Foot and Ankle Cases - Dr. Juan Agustin Coruña
  - Dr. Sharvyl Anthony B. Cantila
  - *Moderator: Dr. Merwen Mitchel Q. Musni-Fabia*
  - Dr. Carlos H. Acuña
  - Dr. Ernest Nikole R. Hilao
- 4:45-5:45 Pediatric Orthopedic Surgeons of the Philippines ▶
- *Moderator: Dr. Nesti James B. Panopio*
  - Innovative Solutions to Ensure Continuity Of Care For Clubfoot Patients During The Pandemic - Dr. Rosalyn P. Flores
  - A Model for the Achilles Tendon Tenotomy for Clubfoot: The Adidas Solution - Dr. Carlo Emmanuel Sumpaico
  - "Managing Off Ended Distal Radial Fractures in Children; How Would You Do It? - Dr. Juan Alejandro Legaspi
  - Distal Meta-Diaphyseal Humeral Fracture - Dr. Candice Elaine C. Lim

## PROGRAM OF ACTIVITIES

### 18 JUNE 2022

- 7:00 – 8:00 Orthopedic Research Society ▶  
*Moderator: Dr. Emmanuel P. Estrella*  
Lecture 1  
Dr. Nathaniel S. Orillaza Jr.
- 8:00-9:00 Lecture 2  
*Moderator: Dr. Henry Gerald Calleja*
- Dr. Jean Anne B. Toral
- 9:00-9:30 Snack Symposium: Unilab ▶
- 9:30-10:30 Orthopedic Education Lecture: Council on Orthopedic Education ▶
- Dr. Jean Pierre F. Leung
  - Enhancing Orthopaedic Training Through Cooperation: The North Luzon Experience - Dr. Daniel V. Dungca
  - Dr. Lucille P. Detoyato
- 10:30-11:30 Orthopedic Education Lecture: Philippine Board of Orthopaedics ▶  
*Moderator: Dr. Maria Adelwisa G. Belen*
- Dr. Jose Maria R, Coruña
  - Test Construction Workshop 2022 - Dr. Isagani E. Garin
  - The Philippine Board of Orthopaedics Adaptive Changes During the Pandemic - Dr. Reynaldo V. Lopez
  - Dr. James C. Paggao
- 11:30-12:00 Lunch Symposium: Viatrix ▶
- 12:30-1:00 PBO Business Meeting
- 1:00-2:00 POA Business Meeting
- 2:30-4:30 Closing Ceremony ▶



**FACULTY**



#### DR. DENNIS PAOLO H. ABADILLA

Dr. Dennis Paolo H Abadilla completed his orthopaedic residency training at VLMC-AFPHSC and was inducted as Fellow of the Philippine Orthopaedic Association in November 2014. He finished his subspecialty training in Orthopaedic Oncology at the Philippine General Hospital under the mentorship of Dr Edward HM Wang, Dr. Cesar D. Dimayuga and Dr. Albert Jerome C. Quintos. He was inducted as Fellow of the Philippine Musculoskeletal Tumor Society in 2016. Dr. Abadilla is an active member of the Armed Forces of the Philippines Medical Corps with the rank of MAJOR and presently serves as the Training Officer of the Department of Orthopaedics and Traumatology, VLMC-AFPHSC

#### Management of Bone Tumors in a Military Hospital during the Covid-19 Pandemic

The Victoriano Luna Medical Center-AFP Health Service Command (VLMC-AFPHSC) provides the highest level of health care to the men and women of the Armed Forces of the Philippines (AFP) and their dependents and authorized civilians. The Medical Center adopted changes in its hospital operations during the pandemic to ensure operation readiness of the military personnel in support of the Government's effort to control the spread of the Covid-19 virus infection. Examples of adjustment made by the hospital senior officers were to limit civilian patient admissions, limit elective surgeries, creation of quarantine facilities and initiation of a telemedicine system. One of the distinct capabilities of the AFP health system is the capacity to continue the delivery of services thru its military satellite hospitals strategically located in the different regions of the country. The Department of Orthopaedic Surgery and Traumatology of VLMC-AFPHSC and its different services continued the delivery of services despite suboptimal circumstances brought about by the pandemic. This presentation intends to present the case a soldier's dependent diagnosed with a Giant Cell Tumor of the Proximal Tibia who was residing at Mindanao and how the Musculoskeletal Service of the Department managed the patient. The patient was given medical adjuvant at one of the military treatment facilities at Zamboanga when transportation was compromised during the infection surge. The patient eventually scheduled for surgery at VLMC.ISAG



#### DR. DAVID L. ALAGAR

The current vice president of the POA, graduated from the University of Santo Tomas, Faculty of Medicine & Surgery in 1995, and subsequently trained at the Philippine Orthopedic Center. He was inducted as a Fellow in 2003. He is a past president of the Association of Hand Surgeons of the Philippines (AHSP), an international member of the American Society for Surgery of the Hand (ASSH), the AOTrauma, and the Philippine Orthopaedic Trauma Society (POTS). Currently, he is the head of the Hand Surgery Unit of the Philippine Orthopedic Center and is practicing in Metro Manila.

#### Management Of Neglected Flexor Tendon Injury (Zone 2): "The Twilight Zone"

Treatment of acute zone 2 flexor tendon injury has always been difficult despite the better knowledge of the tendon anatomy and physiology, improved suture materials and techniques, and more effective and straightforward rehabilitation protocols. But more challenging than this is the management for neglected cases that have left the flexor tendon sheath scarred and collapsed and the tendon ends retracted. The 2-stage flexor tendon reconstruction popularized by Hunter and Salisbury in 1971, has remained the standard of treatment for these conditions. Unfortunately, it has not always produced the functional outcome we envisioned for our patients. Securing the artificial tendon (silicone rod) in itself is a problem in a developing country like ours. We shall review the history of this surgical method, the innovations, and the expected outcome. Cases that were seen and treated with this technique in our institution during the past two years of the pandemic will be presented. Alternative methods will likewise be touched on. Hopefully, we can prove or debunk the notion that management of these neglected cases is in the "twilight zone"



#### DR. BERNARDINO B. ALPUERTO II

- Specialty/Sub-specialty: Orthopaedic Surgery; Foot and Ankle Surgery; Hip and Knee Replacement
- Affiliations
  - Clinical Associate Professor, Department of Orthopedics, UP Philippine General Hospital
  - Head of Foot and Ankle Adult and Trauma Service, Philippine General

Hospital

- Education Committee Lead: Fragility Fracture Network Philippines (FFN Philippines)

#### Fragility Hip Fracture Management during the Covid-19 Pandemic: A Multi-Center Experience from A Country With An Emerging Economy

Introduction: Acute multidisciplinary management of elderly fragility hip fractures significantly decreases morbidity and mortality rates. However, there is little data from a developing country perspective where underlying healthcare delays and inequitable access are exacerbated by the COVID-19 pandemic. This is the first study to report on the characteristics, management, and early outcomes of fragility hip fracture patients admitted during the COVID-19 lockdown in the Philippines. Methods: A multicenter prospective cohort study was conducted involving 12 hospitals from June 16, 2020 to April 30, 2021. Patient clinical characteristics, laboratory results, treatments, and 30-day outcomes were collected. Factors associated with early mortality were analysed. Results: A total of 158 elderly patients with fragility hip fractures were included. Median age was 77 years old. The median time of injury-to-admission was at least 3 (IQR: 1.0 –

13.7) days with delays mainly due to fear of COVID-19 exposure. Eighty percent (80%) of patients underwent surgery with a delayed median time from admission-to-surgery of at least 5 (IQR: 2.5 – 13.6) days mostly due to protracted cardio-pulmonary clearance. The 30-day mortality and morbidity rate was 3.7%. All 5 patients who expired were female, had at least an ASA grade of III, had elevated neutrophils and died within 5 days of admission to the hospital without surgery. Four out of 5 of them were COVID-19 confirmed cases or suspects. Factors significantly associated with early mortality were poor pre-fracture mobility, COVID-19 infection, an abnormal chest radiograph, and conservative treatment. Conclusion: Despite treatment delays being common, short-term outcomes remain favorable for non-COVID patients with acute fragility fractures treated with surgery compared to those managed conservatively. Given the positive correlation between conservative treatment and mortality, the benefit of surgery still outweighs the risks in physiologically stable COVID-19 positive patients.



**DR. JOSE JOEFREY F. ARBATIN, JR.**

Dr. Arbatin graduated from the University of the Philippines College of Medicine in 2001 and completed his Orthopaedic Residency Training at the University of the Philippines – Philippine General Hospital Department of Orthopaedics in 2005. He was a Clinical and Research Fellow, at the International Spine Center of Sacred Heart Hospital at Hallym University Medical Center in Seoul, South Korea. Subsequently he was a Clinical Spine Orthopaedic Fellow at the Royal Adelaide Hospital in South Australia from July 2009 to June 2010. Thereafter, he went on to undergo Clinical Orthopaedic Fellowship in Hip and Knee Arthroplasty and Arthroscopy at the Joint Orthopaedic Center, in Sydney, Australia. He is a Fellow of the Philippine Orthopedic Association, the Philippine Spine Society, and the Country Leader of AO Spine Philippines. Dr. Arbatin is the Chairman of the Department of Orthopedics of Chong Hua Hospital Mandaue, Head of the Spine Section, and the Training Officer of the Spine Fellowship Program. He is partner at Spine and Orthopedics Cebu and a visiting consultant at the Vicente Memorial Medical Center and University of Cebu Medical Center

**Optimizing Management of Pott's Disease during the COVID pandemic**

The COVID-19 pandemic and lockdown measures have caused widespread disruption to tuberculosis diagnosis and service delivery at every aspect of the health care since 2020. For patients with tuberculous spondylitis, this significant delay may result in a progression of the disease resulting in extremity weakness and pain with less predictable improvement after surgery. This is a case of a 10-year-old boy who presented with bilateral paraplegia due to severe spinal cord compression at T8 and kyphotic deformity (Figure 1). Pediatric tuberculous spondylitis has been previously reported and they are often associated with greater management challenges given the technical difficulty with instrumentation in this patient population. Diagnostic modalities, surgical treatment options, and follow up studies will be presented cognizant to the realities working

in a limited resource hospital setting. Despite the limitations, spine surgeons should uphold the principles of adequate decompression, stable instrumentation, and medical management of tuberculous spondylitis.



**DR. JEROME ANTHONY S. ASUNCION**

The Director of Butuan Orthopedic Institute, Center for Minimally Invasive Fracture Surgery, Advanced Wound Care and Diabetic Limb, in Butuan Doctors' Hospital, where he is the Chairman of the Department of Orthopedics and Traumatology and the Chief of Clinics. He had his AO (Arbeitsgemeinschaft fur Osteosynthesefragen) Trauma fellowship and Minimally Invasive Osteosynthesis training at Queen Mary Hospital, University of Hong Kong, Hong Kong (2008). He had his Advanced Wound Care and Diabetic Limb Salvage course at Georgetown University, Washington DC, USA (2009). He is the founding president and a fellow of the Philippine Orthopedic Wound Care and Diabetic Limb Society



**DR. COSETTE ESMERALDA C. ATUTUBO**

**WALANT for Upper Extremity Ilizarov**

WALANT or better known as, Wide Awake Local Anesthesia No Tourniquet paired with periosteal block is a novel anesthesia technique that is slowly gaining popularity. This procedure allows for forearm surgeries to be performed under local anesthesia; thus, mitigating the risks that comes with general anesthesia. Plating of the distal radius and shaft fractures reported satisfactory outcomes using this technique. However, this is the first attempt in the treatment of infected nonunion of the radius with application of Ilizarov fixator and bone graft under WALANT. In the lecture, WALANT and its role in the treatment of infected nonunion of the radius and ulna will be discussed, its benefits, as well as the downside of using this anesthetic technique. With our case presentation, we will also be sharing our challenges and difficulties in dealing with follow-up check-ups with our Ilizarov patients during the pandemic. Best practices on how to mitigate and better manage loss to follow up will also be discussed.



**DR. GRACIA CIELO E. BALCE**

Dr. Balce is an Orthopedic Surgeon trained in Pediatric Orthopedics, and Ilizarov Fixation and Reconstruction. She is a graduate of the UP-PGH Department of Orthopedic Surgery Residency Training Program. She underwent Fellowship Training in the aforementioned subspecialties at the Korea University Medical Center - Guro Hospital, and at the Duchess of Kent Children's Hospital. She is the current Vice Chair for Training at the UP-



PGH Dept of Orthopedics, the Vice President of the ASAMI Philippines, and the Head of the Ilizarov Fixation and Reconstruction Service at the UP-PGH.

#### Chronic Elbow Dislocations During the Pandemic

During the 2020 - 2022 Covid-19 pandemic, 8 chronic elbow dislocations were surgically treated by the UP-PGH Orthopedics, Ilizarov Fixation and Reconstruction Service. These patients had a mean age of 34 (range: 15-45) and had mean chronic elbow dislocations of 11 months (range: 2-24 months), which was more than the mean pre-pandemic chronic elbow dislocations of 8 months. These patients sought delayed treatment due to lockdowns, travel restrictions, limited hospital capacities, Covid quarantine/recovery periods, or fear of getting hospital acquired Covid. They were treated with open reduction and application of hinged elbow Ilizarov fixators, which were removed at 4 weeks post-op. With this procedure, patients had a mean gain of 87° in the flexion-extension arc. The mean Mayo Elbow Performance Score at 1 month post fixator removal was 98.50. 1 patient had post-operative radial nerve palsy, which eventually recovered after 3 months. There were no redislocations or deep infections.



#### DR. JOEL V. BARON

- Fellow of Philippine Orthopedic Association, Philippine Hip and Knee Society
- Diplomate of Philippine Board of Orthopedics
- Active Consultant, Philippine Orthopedic Center, Providence Hospital, Delos Santos Medical Center
- Fellowship training in Adult Hip and Knee Joint Reconstruction: Singapore

General Hospital, Singapore

- Residency training in Orthopedics: Philippine Orthopedic Center, Quezon City, Philippines
- Doctor of Medicine, De La Salle University-Health and Sciences Campus, Dasmariñas, Cavite City, Philippines

#### Direct Anterior Approach for Primary Total Hip Replacement: POC Experience

Similar to other approaches to the hip, the DAA has advantages and disadvantages. It is a true intermuscular approach providing its utmost benefit. Patients may be allowed to ambulate without restriction as soon as the anesthesia effect has worn off. For its complications, fractures of the proximal femur are most common during the learning curve stage but may be avoided with proper guidance. Historically, the HANA table was a necessity in the anterior approach, but credit to the surgeons who developed the technique on adequate soft tissue release, DAA may now be done even on a regular table with the use of conventional instruments.



#### DR. CARLO ANGELO V. BORBON

Dr. Carlo Angelo V. Borbon completed his Orthopaedic residency training at the Makati Medical Center for which he topped the Board examinations and was given an Outstanding Resident Award by the Philippine Board of Orthopaedics. He underwent extensive fellowships in Sports Medicine and Hip, Knee, Foot and Ankle Surgery; and another program in Shoulder and Elbow Arthroscopy and Arthroplasty at the ATOS Klinik Heidelberg, Germany.

He was also part of the Association of Southeast Asia Nations Junior Travelling Fellowship in 2014. He is currently the president of the Philippine Orthopaedic Foot and Ankle Society. His local and international professional memberships include the Philippine Orthopaedic Association, Philippine Orthopaedic Society for Sports Medicine, Philippine Shoulder Society, American Academy of Orthopaedic Surgeons, International Society for Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine, Societe Internationale de Chirurgie Orthopedique et de Traumatologie, Asia-Pacific Society for Foot and Ankle Surgeons, Asian Federation of Foot and Ankle Surgeons and American Orthopaedic Foot and Ankle Society. He worked as a member of the ISAKOS Leg, Ankle and Foot Committee and previously a council member of the Philippine Orthopaedic Society for Sports Medicine. He is currently a member of the Executive Council of Asian Federation of Foot and Ankle Surgeons, also a member of the Executive Committee of the Asia Pacific Orthopaedic Association - Foot and Ankle Section and an editor of the Journal of Foot and Ankle Surgery (Asia Pacific). He has published a number of papers in international peer review journals and has been very active in giving lectures for both local and international conferences and serving as surgical instructor for a number of international courses. He is a consultant at the Makati Medical Center and the Philippine Orthopaedic Institute. He is also affiliated with the Cardinal Santos Medical Center, Medical Center Manila, De La Salle University Medical Center, Capitol Medical Center, Victor R. Potenciano Medical Center, Providence Hospital, Philippine National Police General Hospital and a teaching consultant at Armed Forces of the Philippines Medical Center and Batangas Medical Center.

#### Current Concepts in Chronic AC Joint Injuries

Injuries to the acromioclavicular (AC) joint are getting more common in the recent years with the surge of motorcycle riders and cycling enthusiasts in the country. Majority of AC joint dislocations can be treated nonoperatively with a trial of immobilization and physiotherapy. There are, however, patients that do not respond well to conservative management. Treatment varies depending on the chronicity of these injuries. Most of these patients present to the clinic with a long-standing injury. Previously, studies have focused on the restoration of the coracoclavicular ligament complex. Recent papers have shown the importance of the acromioclavicular complex and restoration of both the vertical and horizontal instability has been emphasized. This presentation aims to provide the audience with an overview of current treatment strategies and the presenter's surgical preferences.



#### **DR. HENRY GERARD M. CALLEJA**

Dr. Henry M. Calleja graduated from the St. Luke's College of Medicine in 2005 and completed his Orthopedic residency Training at the St. Luke's Medical Center Institute of Orthopedics and Sports Medicine in 2010. He was awarded PBO most outstanding resident in 2010 and topped the 2011 PBO diplomate exams. He had his Joint Replacement fellowship at the Desert Orthopedic Center, Las Vegas, Nevada, USA (2011) and his Hand and Microsurgery fellowship at the Kleinert Institute, University of Louisville, Kentucky, USA (2012-13). He has several international publications and is an international member of the American Society for Surgery of the Hand. He is currently an active consultant at the St. Luke's Medical Center Quezon City and Global City and serves as the head of the training and research committees of the Institute of Orthopedics and Sports Medicine.

#### **Distal radius Malunion: Corrective Osteotomy Using a Rectangular-shaped Iliac Bone Graft and Volar Plating**

Distal radius fractures are one of the most common injuries seen by orthopedists. Severity and configuration may vary, and therapeutic options are broad, but regardless of the course of treatment, all cases can potentially lead to malunion. When malunion requires surgical correction, the surgery can be technically demanding. In this lecture we discuss distal radius malunions and we demonstrate an alternative technique to perform corrective osteotomies for extra-articular or minimally displaced articular distal radius malunion. We provide simplification of the distal radius osteotomy, allowing the surgeon an easy means to access the osteotomy gap and apply a tricortical iliac bone graft.



#### **DR. RYAN CONRAD A. CARNERO**

Dr. Carnero obtained his medical degree from the University of Santo Tomas Faculty of Medicine and Surgery. He finished his residency training at the Philippine Orthopedic Center. After which he completed his first post-graduate fellowship training for degenerative spine conditions at the Nanoori Hospital Seoul, South Korea. He then underwent a clinical fellowship for pediatric and adult spine deformities at the Meijo Hospital Nagoya, Japan under the tutelage of Professor Noriaki Kawakami. At present, he is the head of the Spine Surgery Unit of the Philippine Orthopedic Center. Ryan is a member of the residency training committee and sits as the Spine Fellowship training officer at The Medical City. He is the Consultant Intern's Monitor for Orthopedics at the Ateneo School of Medicine and Public Health and is part of the clinical faculty of the said institution. Since 2019, he sits as a member of the Board of Trustees of the Philippine Spine Society.

#### **Spine Trauma Care During the COVID-19 Pandemic**

We present a case of a 24-year-old construction worker who complained of back pain and bilateral lower extremity weakness after being pinned by metal bars in a hyper-flexed position. He was diagnosed as having an incomplete spinal cord injury resulting from a 3-column injury at L1 (TLICS score of 10). He underwent posterior decompression and instrumented fusion from T11-L3. Neurologic improvement was noted immediately post-operatively and almost full recovery 2 weeks after the surgery. The COVID-19 pandemic presented plenty of challenges for everyone. It affected the management of spine trauma through various ways. From the patient's standpoint, the economic impact of the pandemic made healthcare a lesser priority. This resulted in delays in consult and treatment, even for spinal trauma. Lockdowns and lack of transportation also affected the timeframe wherein spine trauma patients reach the hospitals. For the healthcare providers, COVID-19 also made things difficult. The delay in consults resulted in more difficult and complicated surgeries. The surgeries themselves were made doubly difficult because of the safety protocols and personal protective equipment needed to be used by the surgical team. There were also numerous instances wherein the health workers were themselves patients stricken with COVID leading to manpower shortages and further delays in treatment.



#### **DENVER O. CHICANO, RN, RT, EMT** **CocoPatch**

Cocopatch is an innovative wound care material composed of coco cellulose – a locally produced variant of microbial cellulose impregnated with monolaurin. Cocopatch is a highly absorbent dressing medium which acts as a mechanical barrier against environmental pathogens while providing a moist environment for optimal wound healing. Cellulose, the base material of Cocopatch is a novel Philippine variation of microbial cellulose. *A. xylinum* is cultured in a medium of coconut water, water and sugar instead of synthetic mediums used in microbial cellulose production elsewhere. Cocopatch also contains monolaurin (glyceryl laurate), yet another coconut derived product. This compound is a potent wide spectrum antiviral, antifungal and antibacterial used to treat a wide variety of infections. Cocopatch produces a moisture-balanced dressing to wounds. The hydrophilic nature of the product absorbs wound exudate and transudate from the wound bed while exchanging water particles in the dressing onto the wound surface. This creates a moist wound environment ideal to wound healing while at the same time removing pus and debris from the site of injury. The nanoporous matrix of Cocopatch also acts as to its unique microfibrillar structure that conforms to any wound bed surface. Cocopatch is one of the few materials that comply to all parameters of an ideal wound dressing.



#### **DR. RAFAEL S. CLAUDIO**

A graduate of the University of the Philippines College of Medicine. He had his general orthopedic surgical training at the Philippine Orthopedic Center. He further trained in Orthopedic Oncology with the University of Gothenburg-Sahlgren Hospital (Sweden), with further surgical observership at the Rizzoli Institute (Bologna). He earned his master's degree in business administration and health from the Ateneo Graduate School of Business.

He served as Adult Reconstructive consultant and founding head of the Musculoskeletal Tumor Unit of the Philippine Orthopedic Center. He became the first chairman of the Department of Orthopedics of the Medical City and until recently served as its Chief Medical Officer. He is a past president of the Philippine Society of Oncologists and of the Philippine Musculoskeletal Tumor Society. He is currently senior consultant in orthopedic oncology in TMC and an assistant professor at the Ateneo School of Medicine and Public Health. He sits as a member of the international advisory board of the Asia-Pacific Musculoskeletal Tumor Society.

#### **COVID-19 and the Collateral Damage on Musculoskeletal Tumor Care**

The harmful effects of the COVID-pandemic on the care of patients with non-communicable diseases (NCD's) are well established. Cancer patients, in particular, suffer not only from the direct effects of COVID illness but more commonly from the consequences of neglect or delayed treatment. The profile and experience of musculoskeletal tumor patients follow the same pattern. Primary bone and soft tissue cancer malignancies with concomitant COVID infection have shown poorer results with surgical treatment. Delayed diagnosis and initiation of management have resulted in higher stages of illness on presentation, which often compromise or outrightly preclude the safe conduct of limb-sparing surgery. Systemic malignancies, on the other hand, are more predisposed to pathologic fractures, epidural spine compression, and other skeletal-related events (SREs). The full extent of collateral damage inflicted by the COVID pandemic on musculoskeletal tumors is yet to be seen and thoroughly evaluated, especially in the Philippine setting. More importantly, we need to develop local guidelines for the safe, timely, and appropriate delivery of both local and systemic management and future-proof orthopedic oncologic care in the setting of devastating pandemics.



#### **DR. JUAN AGUSTIN D. CORUÑA IV**

Dr. Chinkin Coruña graduated medicine from the University of the East Ramon Magsaysay Memorial Medical Center and completed Orthopaedics and Traumatology at Corazon Locsin Montelibano Memorial Regional Hospital (CLMMRH). Chinkin finished fellowship training with some of the world's best in foot and ankle surgery: Prof. Hong-Geun Jung at Konkuk University Medical Center in South Korea and Prof. Yasuhito Tanaka at Nara Medical University in Japan. He is directly involved with comprehensive lower extremity

management for Western Visayas as Medical Specialist III, Chief of Foot and Ankle Service in CLMMRH. Dr. Coruña also serves as Chairman of the Department of Orthopedic Surgery and Wound Care at The Doctors' Hospital in Bacolod. Chinkin represents the country consistently as international faculty for foot, ankle, and wound care topics in multiple global events.

#### **WALANT for Soft Tissue Foot and Ankle Cases**

The lecture covers a sample library of non-osseous conditions of the lower extremity benefiting from local anesthesia and epinephrine infiltration. It builds on educational strands for foot and ankle surgery principles presented in previous POA annual meetings and frequent webinars sponsored by POFAS. New content will update the audience on the urgency, and practicality of managing acute and chronic lower extremity conditions. The centerpiece of the presentation features a number of cases and their distinct preoperative planning. The endpoint is to familiarize young trainees with their intended subspecialty and involve them in the future growth of orthopaedics in the country.



#### **DR. GIORGIO D. DELGADO**

Dr. Delgado trained and further served as Chief Resident in the Department of Orthopedics, UP-PGH. He took his first fellowship training in Hip & Knee Preservation, Replacement and Revision Surgery in Brisbane Private Hospital, Australia. Afterwards, he went to ENDO-Klinik Hospital, Hamburg, Germany for Revision Arthroplasty of the Hip & Knee. He practices in The Medical City Ortigas, Diliman Doctors Hospital and Manila Doctors Hospital. He

is currently a Clinical Associate Professor and Arthroplasty consultant of the UP-College of Medicine and UP-PGH.

#### **Multicenter Implementation of Orthogeriatrics and the FLS**

Since 2017, the Orthogeriatrics and the Fracture Liaison Service has been running in the UP-PGH. With the lessons and challenges encountered along the way, it is still trying to improve the outcomes. Nevertheless, it has partnered with the FFN Philippines and the DOST for a 2-year pilot study including 14 hospitals nationwide to help set-up similar- or even better- models of care and help spread the concept of Orthogeriatric care. Eventually this will hopefully translate into the formulation of a future Hip Fracture Registry.

**DR. PATRICK DIZON**

Patrick Dizon did his Orthopedic residency training at the University of the Philippines - Philippine General Hospital. He pursued his first fellowship in Hip and Knee Arthroplasty at the St. Vincent's Hospital in Sydney, Australia. He then did his second fellowship in Sports and Arthroplasty at the St. John of God Hospital in Ballarat, Australia, training in Arthroscopy of the Shoulder, Elbow, Knee and Ankle, as well as treatment of Shoulder Arthritis with Reverse Total Shoulder Arthroplasty. His third fellowship was on Shoulder

and Upper Extremity at the Queen Elizabeth Hospital in Adelaide, Australia, with extensive training in Shoulder Arthroscopy, as well as training in Anatomic and Reverse Total Shoulder Arthroplasty for trauma and arthritis. Currently, Dr. Dizon is a Clinical Associate Professor at the University of the Philippines Philippine General Hospital under the Department of Orthopedics, He is part of the Sports and Arthroscopy Service and the head of the Shoulder Service. He is the Head of Sports and Arthroscopy at the Medical City. He is also a board member of the Philippine Orthopedic Society for Sports Medicine and the Philippine Shoulder Society.

**Acute Proximal Humerus Fracture Dislocation: When is it safe to Reduce?**

Acute shoulder dislocation and proximal humerus fracture are common injuries of the shoulder. However, acute proximal humerus fracture-dislocation is a very rare condition with only a few cases reported. In the case series published, attempt to do closed reduction at the ER has led to displacement of the proximal humerus fracture leading to immediate surgical intervention. Treatment algorithm proposed by Wronka in 2017 is to perform the closed reduction in the operating room under general anesthesia and muscle relaxation or do the ORIF/ Hemiarthroplasty with reduction of the shoulder. Here we present a 25F who suffered an acute proximal humerus fracture with a shoulder dislocation/subluxation. Attempt to do closed reduction in the ER was deferred and she was brought to the OR for closed reduction versus ORIF with plates and screw with reduction under GA. After GA induction and muscle relaxation, it was noted that the shoulder was reduced under C-arm. The ORIF was deferred, and patient did well post-reduction.

**Arthrofibrosis of the Knee: Open versus Arthroscopic Release**

Arthrofibrosis of the knee is one of the complications seen after fractures around the knee, ligament reconstruction or knee arthroplasty. Ankylosis in extensions is more commonly seen with these conditions. There are many forms of release which include open quadricepsplasty or arthroscopic release. Here we present 2 cases of arthrofibrosis following a fracture. First is a case of a 45M who sustained a very comminuted distal femur fracture which was treated with an Ilizarov knees spanning fixator. After release of the Ilizarov fixator, the patient had arthrofibrosis with knee range at 0-10 degrees. Open quadricepsplasty was performed using the Thompson technique. OR took 2 hours with blood loss requiring transfusion. The patient was able to do 0-100 degrees

at 1 year follow up. The second case was also of a 45M who sustained a comminuted patellar fracture. ORIF with cerclage wiring was done. With the pandemic, post op rehabilitation became a challenge and only tele-PT was done. His range of motion was only 0-30 degree and at 7 months post op, the patient underwent Arthroscopic release of arthrofibrosis. The surgery only had a few portals and the blood loss was less than 50cc. Patient was able to do 0-90 degree range at 6 months post op. Arthroscopic release of arthrofibrosis has been shown to be effective and safe in literature and can be considered especially with the challenges of doing rehabilitation during this pandemic.

**Arthroscopy Simulation – Coping with the Challenges in Training during the Pandemic**

The pandemic has significantly affected the amount of surgery being performed in any orthopedic training institution. Looking for alternative teaching activities to boost the training of our orthopedic residents has become a challenge. Arthroscopic Simulators has been proven to be effective in improving surgical skills when performing arthroscopy based on meta-analysis. This is where we devised the Arthroscopy Box Simulator. These are readily available plastic boxes from your hardware store and a pen scope which was purchased from Lazada. The Box Simulator were fashioned with multiple holes on all sides. Learning activities created were fashioned to simulate triangulation, cutting, grasping and suture passing. We also developed a grading system to evaluate the residents at the end of their rotation. To further progress our simulation activities, we also performed arthroscopic simulation with cadaver. This enhanced the learning experience of our residents.

**DR. DANIEL V. DUNGCA**

- Doctor of Medicine, University of the Philippines College of Medicine
- Orthopedic Residency, UP-Philippine General Hospital
- Fellowship in Ilizarov and Limb Deformity Surgery, UP-Philippine General Hospital
- Fellowship in Paediatric Orthopaedics, KK Women's and Children's Hospital, Singapore
- Travelling Fellowship, Paediatric Orthopaedics, Seoul, South Korea
- Travelling Fellowship, Paediatric Orthopaedics, Fukuoka, Japan
- Medical Specialist III PT, Jose R Reyes Memorial Medical Center, Manila
- Medical Specialist IV PT, Jose B Lingad Memorial Government Hospital, San Fernando, Pampanga
- Vice-President, Paediatric Orthopaedic Society of the Philippines
- President, Association for the Study and Application of the Methods of Ilizarov – Philippines

**Untreated Orthopedic Trauma: Perspectives from Ilizarov Surgery**

Management of orthopedic trauma has been side-lined by the current pandemic. The postponement of elective surgeries, as well as the quarantine and lockdown situations have led to delays in the treatment of fractures and dislocations. Neglected fractures and

dislocations have created additional problems in management apart from the original injury. Soft tissue contracture, muscle wasting, disuse osteoporosis, and infection are challenges that have to be considered in the formulation of treatment strategies. We will be presenting several situations where we employed different strategies using the Methods of Ilizarov in the management of untreated fractures and dislocations

#### **Enhancing Orthopaedic Training Through Cooperation: The North Luzon Experience**

While the pandemic shut down the regular hospital conferences, examinations, and physical mentoring sessions that we were used to, it also opened up other opportunities to enhance the training of our orthopaedic residents. The introduction of virtual meeting platforms created a great opportunity for synchronization of teaching and training opportunities among different training institutions. In Northern Luzon, four orthopaedic training institutions accredited by the PBO explored this opportunity by conducting synchronized case discussions, pre and post-op as well as mortality and morbidity conferences, subspecialty lectures, and joint written and oral exams. We will be presenting our experiences and sharing the lessons learned from this endeavor.



#### **DR. ROSALYN P. FLORES**

Dr. Rosalyn Flores completed her orthopaedic residency training at the University of Santo Tomas Hospital, Manila and was awarded as an outstanding resident by the Philippine Board of Orthopaedics during her 2nd to 4th year levels of training. She had her fellowship training for Pediatric Orthopaedics at the National University Hospital, Singapore, and for Ilizarov and Limb Deformity Surgery at the University of the Philippines – Philippine General Hospital. She underwent several trainings pertaining to clubfoot management, including a Clubfoot Ponseti Mentorship Program at the Ponseti Clubfoot Treatment and Research Center at the University of Iowa, USA. She is currently affiliated with the following institutions: as an Orthopaedic Consultant at the University of Santo Tomas Hospital, St. Luke's Medical Center – Global City, and Rizal Medical Center; as an Assistant Professor at the University of Santo Tomas – Faculty of Medicine and Surgery; and as a consultant to non-profit organizations dealing primarily with clubfoot treatment – MiracleFeet, the Philippine National Clubfoot Program, and the Philippine Clubfoot Resource Center.

#### **Innovative Solutions to Ensure Continuity of Care for Clubfoot Patients During the Pandemic**

The unprecedented nature of the pandemic presented clubfoot clinics with unique challenges that hindered the initiation as well as the continuity of care for clubfoot patients. The lecture will discuss the different ways by which clubfoot clinics in different regions of the country were able to overcome these challenges in order to ensure the delivery of quality service by the health care practitioners, thereby mitigating the

complications brought about by the delay and disruption of clubfoot treatment in children.



#### **DR. ANNE KATHLEEN B. GANAL – ANTONIO**

Anne Kathleen B. Ganal-Antonio, a Trustee of the POA, graduated from the University of the Philippines, College of Medicine and subsequently trained for Orthopedic Surgery at the Philippine General Hospital. She was inducted as a Fellow in 2007. She further trained for Spine Surgery at the Duchess of Kent Children's Hospital, The University of Hong Kong. Currently, she is practicing in Metro Manila and is the Section Head for Orthopedic Spine Surgery at the Quirino Memorial Medical Center. She also is affiliated in Makati Medical Center, the Philippine Orthopedic Institute, The Medical City, Manila Doctors' Hospital and Cardinal Santos Medical Center. An assistant professor of the Ateneo School of Medicine and Public Health, she teaches Musculoskeletal Anatomy and Orthopedics. She has been a recipient of several fellowships, including the AOA Traveling Fellowship, SRS Global Outreach Fellowship Program, and the APSS De-Puy Synthes Fellowship. She is one of the trustees of the Philippine Spine Society and is the current vice president of the Philippine Society of Women Orthopaedic Surgeons, Inc. She is also a member of the Asia Pacific Spine Society and the AO Spine.

#### **Revisiting Conservative Management of Acute Osteoporotic Vertebral Fractures (In the Setting of Covid-19 Pandemic)**

Osteoporosis is a major global health issue, with acute vertebral fractures as a frequent sequelae. The main goals of treatment include alleviation of pain, return to function, and prevention of subsequent fracture. Of special interest is the management of OVCFs during the COVID-19 pandemic. A recent study demonstrated that individuals with thoracic vertebral fractures appear to have an increased risk of severe COVID-19. During this time, we are challenged to continue providing the best care possible for our patients, considering the logistical challenges that we face. This pandemic has made us revisit the role of non-operative management of OVCFs without neurological deficits. Generally, non-operative management has favourable outcomes, and with good pain control, early mobilisation of the patient is possible, preventing further loss of bone mass and muscle strength, pressure ulcers, and deep vein thrombosis. However, consider these adverse effects in older patients, including the complications of prolonged use of pain medications. Osteoporotic vertebral fractures (OVCFs) may also lead to chronic back pain, which is debilitating to the patient and result to an overall decreased physical activity. Recognising risk factors for delayed or non-union, which may lead to persistent pain, progressive kyphotic deformity, and neurologic deficits, is an integral part in determining management of the patient. Furthermore, osteoporosis treatment is fundamental in the prevention of subsequent fractures and should be continued. In our current setting, considering the challenges we face, conservative management plays a vital role in treating acute OVCFs.

**DR. ISAGANI E. GARIN**

Place of Practice: Baguio-Benguet, Cordillera Administrative Region  
 Fellowship Training: Orthopedic Oncology 2006-2007 – UP-PGH, Manila  
 2007-2008 – Royal Adelaide Hospital, Adelaide, South Australia  
 Current Status: Baguio General Hospital and Medical Center Medical Specialist III  
 Section Head, Orthopedic Oncology and Reconstruction Unit Philippine  
 Board of Orthopaedics, Inc 2019-2020 PBO Trustee, North Luzon  
 Representative 2021 PBO Trustee, Secretary 2022 PBO Trustee, Vice Chair

**Management of Orthopedic Tumor Cases During Pandemic in the Cordillera Region**

1. A case of 22y/o, male with a chief complaint of pain right knee. The patient underwent simple curettage plus application of bone cement. Three months later, there was a noted resurgence of pain, and a follow-up radiograph revealed recurrence. 2. A case of 24y/o, male with a chief complaint of gradually enlarging mass left thigh. The patient was a Covid positive. He underwent neoadjuvant chemotherapy and underwent limb salvage surgery. 3. A case of 72y/o, male, who was referred due to progressive pain on his right hip and enlarging mass. The patient was a covid positive and underwent a needle biopsy.

**Test Construction Workshop 2022**

Every year, the Philippine Board of Orthopaedics, Inc, in cooperation with the Philippine Orthopaedic Association-Council for Orthopedic Education (POA-COrE), conducts test question workshops for all the training programs.

This year we tapped the services of the National Teacher Training Center for the Health Professions spearheaded by Dra. Melflor Aldovino Atienza MHPEd, FPCP, FPSG, FPSDE, the Dean of NTTCHP UP Manila.

The workshop was a two-week lecture series held via zoom platform with approximately 158 participants from different institutions. The first week was lecture sessions about Overview of Outcome-based Assessment and Formulating multiple-choice questions.

Participants were grouped under the supervision of two faculties—one each from the POA-COrE and PBO. Twelve groups were tasked to formulate their test questions according to a category and subcategory topics randomly assigned to them based on the PBO's Test Blueprint. A week later, these formulated questions were evaluated, held via Zoom's breakout rooms.

The second week was lecture sessions on setting the Minimum Passing Level, Item analysis, and online written examination, followed by consultation and awarding certificates.

**LENDELL JOHN Z. GATCHALIAN**

Education:

- University of the Philippines, College of Medicine – 1998
- Orthopedic Residency – East Avenue Medical Center, Department of Orthopedics - 2007
- Masters in Management, Major in Hospital Administration – Philippine Christian University (2014)

Present Positions:

- Adventist University of the Philippines, College of Medicine o Department of Anatomy, Faculty
- East Avenue Medical Center, Department of Orthopedics o Section of Trauma - Visiting Consultant o Research Committee – Member
- Philippine Orthopedic Association, South Luzon Chapter: o Vice President (2022) o Scientific Officer (2020-2021) o Chapter Secretary (2011-2019)
- Philippine Orthopedic Wound Care and Diabetic Limb Society (POWC-DLS) o Public Relations Officer (2019-present)

Current Practice:

- Sta Rosa Hospital and Medical Center
- Carmona Hospital and Medical Center
- Unihealth Southwoods Hospital and Medical Center
- East Avenue Medical Center

**Management Of Complex Wounds – An Interesting Case Presentation**

This is will a presentation of an interesting case of a complex wound, how it was managed, followed by reactions from a panel of wound experts on how they would have managed the case differently.

**DR. MICHAEL THOMAS T. GONZALES**

Michael Thomas T. Gonzales is an Orthopedic Surgeon subspecializing in Foot and Ankle Surgery. He is a consultant in the Philippine Orthopedic Center. He is also affiliated as an Active Consultant in both The Medical City and Cardinal Santos Medical Center. He Graduated from the College of Medicine, University of the Philippines and took his residency in Orthopedic Surgery in the Philippine Orthopedic Center. He then trained in Queen Mary Hospital under HongKong University as a Foot and Ankle fellow. He is also a AOTrauma fellow, with training in Shonan Kamakura Hospital, Japan.

**Ankle Fusions, What is Currently Available**

Ankle fusion is indicated for end-stage ankle arthritis, severe ankle trauma, post traumatic arthritis and other arthropathies. Implant options in the Philippines are limited and total ankle replacement is not locally available. This forces us to adapt and find other implants not designed for fusion. Fusion can be done via open or arthroscopic techniques depending

on the severity of the deformity. Most locally would require open techniques. The implants available include and are not limited to screws, tibia nails, plates not designed for fusion and recently, an anterior fusion plate.



#### DR. PATRICK H. HOW

Board certified Doctor of Medicine and fellow of the Philippine Orthopaedic Association who practices Orthopedic Surgery at The Philippine Orthopedic Center, Delos Santos Medical Center and Cardinal Santos Medical Center; with subspecialties of Orthopedic Trauma and Sport Medicine & Arthroscopy. He had his pre-medicine of B.S. Chemistry in U.P. Diliman. He earned his medical degree from University of the East, Ramon Magsaysay Memorial Medical Center (UERMMMMC) He completed his residency training in Orthopedic Surgery at the Philippine Orthopedic Center and was a Philippine Board of Orthopaedics - Novartis "Outstanding Resident". He did take his Orthopaedic Sports Surgery Fellowship in Tan Tock Seng Hospital, Singapore.

#### Coping and Scoping: Sports Orthopedics Training During the COVID-19 Pandemic

The COVID 19 pandemic had a severe impact on all of our personal and professional lives. Sports Orthopedics training was affected negatively for several reasons: a drop-in elective surgery census, decreased emergency and out-patient volume, restrictions on lectures and conferences, and a general interruption of specialty rotations to prioritize emergency services and contamination prevention. The Philippine Orthopedic Center Sports Unit continued the training of residents when possible, attempting to address each impediment. We adapted the now ubiquitous online platforms, as well as other novel methods of instruction.



#### DR. KRISTINE R. ITALIA

An orthopedic surgeon subspecializing in shoulder surgery. She finished her Orthopedic residency at St Luke's Medical Center. She had her sports medicine fellowship in Kuala Lumpur, Malaysia, and fellowship in shoulder arthroscopy and arthroplasty in Brisbane, Australia. She is currently a consultant in St. Luke's Medical Center QC and Global City.

#### Distal Clavicle Fracture Fixation Using Precontoured Locked Plate and Suspension Suture Button Fixation

Distal clavicle fractures are less common than the midshaft clavicular fractures, accounting for 10-30% of all clavicle fractures. However, 30-45% of the non-union of clavicle fractures are seen distally. Despite this, there is no gold standard treatment for these kinds of fractures. Main principle is to treat stable fractures conservatively and unstable types surgically. This lecture will present a case of comminuted distal clavicle

fracture treated with a pre-contoured anatomic locking plate augmented with coracoclavicular fixation using a suspension suture button fixation device.



#### DR. RAPHAEL ANGELO C. JURILLA

CURRENT STATUS: Consultant, Philippine Orthopaedic Center-Orthopaedic Trauma, Sports Surgery, Hip, Knee, Foot & Ankle Surgery Consultant, Cardinal Santos Medical Center, MVP Sports Institute A hardworking medical professional who's very passionate in the field of orthopaedics. Versatile, adaptive, and capable of working under a pressured environment. Dedicated to the service of his countrymen as his experience in a government medical institution has exposed him to the demands of specific healthcare services.

#### QUALIFICATIONS AND EXPERIENCE:

- Treasurer and Board of Trustees Member, Philippine Board of Orthopedics (2020-present)
- Vice President, Philippine Orthopedic Society for Sports Medicine (2020-present)
- International Sports Medicine Fellow, Center for Hip, Knee, Foot, and Ankle and Sports Traumatology, ATOS Klinik Heidelberg, Germany (2012-2013) – trained and actively participated in sports medicine and arthroplasty cases. Surgeries included arthroscopic techniques of the hip, knee, and ankle, ligament/tendon reconstructions, articular cartilage restorative/reparative techniques, meniscus repair/transplantation, joint replacement surgeries of the hip, knee, and ankle, endoscopic achilles tendon repair/debridement techniques, and various corrective osteotomy procedures of the hip, knee, and foot.
- Local Sports Medicine Fellow, Philippine General Hospital, Cardinal Santos Medical Center under Dr. Edgar Eufemio (2010) – trained and actively participated in sports medicine cases. Surgeries included mostly involving the knee and ankle such as arthroscopic and open techniques in ligament/tendon reconstructions, as well as articular cartilage restorative techniques.

#### Neglected Patellar Tendon Ruptures: Rebuilding Bridges

Rupture of the patellar tendon is a devastating injury to the knee, requiring immediate surgery and extensive rehabilitation. Patient's loss of follow ups and delayed surgeries are some of the obstacles that we as orthopedic surgeons have encountered during the pandemic lockdown. This lecture's aim is to discuss the pearls and pitfalls of restoring normal biomechanics to the knee 's extensor mechanism in a delayed setting.

**DR. JUAN ALEJANDRO V. LEGASPI**

Graduated from De La Salle University College of Medicine. Finished his residency training in Orthopedic Surgery from Jose R. Reyes Memorial Medical Center. He had his Fellowship training in Pediatric Orthopedics at the Duchess of Kent Children's Hospital under the Dept of Orthopedics, University of Hong Kong. Currently the Vice Chairman, Department of Orthopedics and Section Chief of Pediatric Orthopedics at Jose R. Reyes Memorial Medical Center. He is the incumbent President of the Pediatric Orthopedic Society of the Philippines.

Managing Off Ended Distal Radial Fractures in Children; How Would You Do It?

Fracture of the distal radius is one of the most common long bone fractures suffered by active children. With the occurrence of the pandemic, there has been an increase in incidence of delay in the presentation and consult for these injuries. The lecture will focus on the management of untreated or late presenting distal radial fractures and the tolerance for acceptability of reduction of this fracture in the pediatric patient.

**DR. CANDICE ELAINE C. LIM**

Dr. Candice Elaine C. Lim graduated from the medical school of the University of the East Ramon Magsaysay Memorial Medical Center in 2005 and finished her post-graduated internship in The Medical City. She finished her orthopedic residency training in The Medical City, after which she did her post-graduate training abroad. She had her fellowship training in Pediatric Orthopedics from the Seoul National University Children's Hospital and also underwent a pediatric orthopedics observership in the Center for Children of the New York University Hospital for Joint Diseases. She also accomplished an AO Trauma Fellowship in the Hospital for Special Surgery in New York. At present, she serves as the residency training officer of the Department of Orthopedics in The Medical City, where is an active member of the Pediatric Orthopedics Section. She is also the Chairman of the Department of Surgery of the Pasig Children's Hospital (Child's Hope). She is one of the site coordinators of The Medical Clubfoot Clinic and serves as a member of the Technical Working Group of the Philippine National Clubfoot Program.

**Distal Meta-Diaphyseal Humeral Fracture**

An 11-year-old boy sustained a displaced distal meta-diaphyseal humeral fracture, for which care was immediately sought but surgical management was delayed due to uncontrollable circumstances.

**DR. CHAUNCEY KESTER L. LIM**

Graduated from medical school at St. Lukes's College of Medicine. Underwent residency at St Lukes's Medical center institute of orthopedics and sports medicine. Shoulder fellowship at Clinique La Châtaigneraie Clermont Ferrand, France.

**Arthroscopic-Assisted Latissimus Dorsi Transfer for Massive Irreparable Rotator Cuff Tear**

Several treatments for massive irreparable rotator cuff tears have been described with variable results regarding pain relief, functional recovery, and dynamic stabilization of the glenohumeral joint. Tendon transfer is one of the options for such cases. Latissimus dorsi muscle tendon transfer is performed to replace the irreversibly lost contractile elements in patients with irreparable tears of the posterosuperior aspect of the rotator cuff. This case presentation aims to show the different techniques in doing an Arthroscopic assisted Latissimus dorsi transfer.

**DR. REYNALDO V. LOPEZ**

He graduated from UERMMMC with a degree of Doctor of Medicine in 1978 ranked 5 out of 283 graduates. He finished his residency in orthopaedic surgery at the Department of Orthopaedics, UP-PGH Medical Center in 1983 and had a fellowship training in the University Department of Orthopaedic Surgery, Singapore General Hospital, Singapore in 1984. He has been the Dean of the College of Medicine at AUF from 1992-1998, President, NLPOA in 2008, Luzon Representative to POA in 2011, ASEAN Senior Travelling Fellow from July 26 to August 9, 2015, Luzon Representative to PBO in 2018, Member, Board of Trustees, PBO in 2020 and Vice-Chairman and Head of the Accreditation Committee of PBO in 2021. At present, he is a Professor in the Departments of Anatomy and Surgery, School of Medicine at Angeles University Foundation, an Active orthopaedic consultant in various hospitals in Pampanga and the Chairman of the Philippine Board of Orthopaedics for 2022.

**The Philippine Board of Orthopaedics Adaptive Changes During the Pandemic**

The year 2020 literally started with a bang. The annual workshop conducted by the Board for our stakeholders pushed through despite the havoc on flights because of the eruption of Taal Volcano. Little did we know a virus would throw the world into a lock down which would last almost two years. The PBO is mandated to accredit the various orthopedic training programs in the country and conduct examinations for all levels of trainees and graduates of these programs. After the lockdown, the Board had to shift from actual



visits to virtual visits, using the Zoom platform generally. All the programs were visited, and the usual evaluations were meted out. By the second year of the lockdown, in 2021, many assessment tools were not available, therefore the Board switched from summative to formative evaluations. Many of these adaptive changes were adequate, but one has to realize there will always be limitations. In 2020, the Board was not able to conduct examinations because of the strict lock down rules. For 2021, we planned to conduct on-line examinations in chosen centers. However, the PMA-IATF sent out a memorandum, reminding us that even though these exams would be on-line, examinees still had to gather in testing centers, and together with invigilators the PMA-IATF considered these as “limited face to face”, disallowing such endeavors. The Board decided on a rather radical and difficult solution, we will continue with our on-line examinations, this time home-based. Difficulties were encountered, but most of these were surmountable. The Board also removed the long-standing Part 3 of the Diplomate Exam – the practical examinations – were permanently removed. The training programs were encouraged to perform assessment of their trainees, allowing their trainees to be evaluated more frequently and by more persons instead of a “one-time, big-time pass or fail” practical exam. Many assessment and educational tools were encouraged to allow a semblance of normal education even with health concerns and lock down. Training, despite suffering significantly, did continue for many of our programs and we hope once Covid issues are better addressed, we inevitably move on and a return to normalcy will be the rule.



#### **DR. PIERRE M. MELLA**

Year Inducted: 2015 PBO Institution: PGH Chapter: POA-CEV Med School: CIM '08 Subspecialty Societies: PSS; POWCDLS

Impact of Telemedicine in Treating Non-Healing Wounds at University of Cebu Medical Center (UCMED) Wound Care Center During COVID-19 Pandemic

Management of non-healing wound is difficult and was made more difficult during the peak of the pandemic. The Wound Care Center of UCMED quickly adapted to the pandemic and started to screen and follow-up patients through telemedicine. Major amputations were avoided because the wounds improved even with the hybrid set-up of online and face-to-face management.

#### **Spine Metastasis Treatment Algorithm during the COVID-19 Pandemic: A Minimally Invasive and Multi-disciplinary Approach in Addressing Spine Problem**

During the peak of Covid-19 Pandemic, a lot of patients with weakness and back pain did not seek consultation due to the effects of lockdown and due to the fear of contracting covid-19 pneumonia in the hospitals. As an effect, we got the patients at the end stage spectrum of the disease. Telemedicine was adapted to coordinate

consultations, admissions, surgeries and even follow-ups. A multi-disciplinary approach was still followed and was mostly done through telemedicine. All surgical procedures were aimed to decrease hospital stay and decrease possible disease transmission in the operative theater.



#### **DR. JEREMY JAMES C. MUNJI**

Our speaker today finished his medical school at the University of Santo Tomas Faculty of Medicine and Surgery. He had his Orthopedic training from the same institution back in 2010 after which he went to Alps Surgery Institute in Annecy France in 2015 for Specialty in Shoulder Arthroscopy and Reconstruction. He is a current fellow of the Philippine Orthopedic Association and Vice President of the Philippine Shoulder Society. He now practices in UST Hospital as an Active Consultant and member of the residency Training committee. He also practices in Delos Santos Medical Sports Center, Cardinal Santos Medical Center, AFP General Hospital, and is a new consultant in St. Luke's Global City.

#### **Tendon Releases for Moderate to Large Rotator Cuff Lesions**

Acute rotator cuff lesions are more straightforward in terms of attempting to reduce the tendons back to the footprint on the humeral head. Unfortunately, especially in our local setting; patients do not get treated expeditiously and surgeons encounter pitfalls and difficulties in bringing the rotator tendons back to their original insertions to ensure adequate tension and potential for healing. Various surgeons have utilized tendon sliding techniques, releases for cuff capture on the undersurface of the acromion and various soft tissue release techniques to be able to slowly return the torn segments into their footprints.



#### **DR. NEILSON G. PALABRICA**

Yr. Inducted as Fellow: 2010 PBO Institution: POC Chapter: POA-NMC Med School: JPRCM 2000 Subspecialty Societies: PSS; PMTS

#### **Delayed Endoprosthetic Reconstruction in a Failed Fixation of a Pathologic Subtrochanteric Fracture of the Right Femur**

Limb Preservation has been around for several decades now and since the introduction of endoprosthetic reconstruction in the 1980's limb salvage surgery continues to evolve pushing the limits of limb reconstruction to provide tumor patients a better functioning customized endoprosthesis. There remain however challenges like affordability, availability and accessibility of these implants to patients in developing countries like Philippines. To date, modular

types of endoprosthesis has been one of the many choices of orthopedic oncologist in their armamentarium for limb salvage surgery because their modularity really makes a big difference intraoperatively. This case of CM 28 yo male, single office clerk who sustained a pathological fracture of the right subtrochanteric area of the femur highlights 2 interesting situations. First, the case was a diagnostic dilemma for everyone in the management and second the road to its final management was painstakingly long and arduous due partly to the impact of the pandemic and financial concerns. The long-awaited reconstruction was performed 11 months after removal of the PFN after a failed fixation. Presently, the patient is happily walking, pain free and is back on his duties as a clerk.



#### **DR. DYAN F. PANGILINAN – DOCENA**

Dyan F. Pangilinan-Docena graduated from the University of Santo Tomas Faculty of Medicine and Surgery and had her orthopaedic residency at St Luke's Medical Center. She continued her subspecialty training in Orthopaedic Surgery, Joint Replacement and Sports Medicine at The Christ Hospital at Cincinnati, Ohio USA. She is currently practicing in Pampanga and is a Medical Specialist at Jose B. Lingad Memorial General Hospital. She is a fellow of Philippine Orthopaedic Association and a member of the Philippine Hip and Knee Society and Philippine Society of Women Orthopaedic Surgeons.

#### **Impact of Covid-19 Pandemic and Difficulty in Management of Neglected Osteoporotic Fragility Fractures of the Hip**

Hip fractures in elderly patients are serious injuries that can lead to immobility and permanent dependence, negatively impacting patients' quality of life and resulting in a financial burden for health systems and societies. The outbreak of Coronavirus disease 2019 (COVID-19) was declared a pandemic by the World Health Organization (WHO) on March 11, 2020. Many countries, including the Philippines, have implemented lockdown and its impact has greatly affected the management and treatment of osteoporotic fragility fractures of the hip. Suspension of surgical intervention of non-emergency cases, closure of outpatient clinics, and constantly changing protocols resulted in difficulty in management of neglected fractures of the hip and significant delay in post-operative rehabilitation recovery. This lecture will give you an overview of how a tertiary regional hospital adapted to this pandemic and will show you some of the cases done during the past 2 years.



#### **DR. JUAN CARLOS S. PAREDES**

He graduated Cum Laude with a Degree of Doctor of Medicine from University of Santo Tomas in 2004 and Bachelor of Physical Therapy from University of Santo Tomas in 2000. He then took up his Orthopedic Residency Training at St. Luke's Medical Center, Institute of Orthopedics and Sports Medicine. He was awarded Outstanding Orthopedics Resident for 3 consecutive years. He finished his Shoulder Surgery Fellowship Training at Mount Sinai Medical Center, New York in 2011. He also has a number of local and international publications in the field of shoulder and sports medicine. He is the Sports Medicine Director and Orthopedics Section Head –Center of Minimally Invasive Surgery of the University of Perpetual Help DALTA Medical Center, He is an active consultant in St. Luke's Medical Center BGC, Asian Hospital Medical Center and Assoc. Professor and Chairman of the Department of Anatomy and Histology at LPU-Cabrini College of Medicine.

#### **Distal Clavicle Fracture - Minimally Invasive Option**

Case-based discussion on minimally invasive option for distal clavicle fracture with recent evidence and comparison with other surgical options.



#### **DR. ENRIQUE LEONARDO C. PASION**

##### **Patellofemoral Disorders During the Pandemic**

The pandemic brought a lot of restrictions to athletes and non-athletes alike, disrupting sports routines especially those done in teams and outdoors. Some tried to compensate by doing self-directed home workouts.

#### **Patellofemoral Disorders During the Pandemic**

Orthopedic surgeons saw a decline in accidents and sports trauma cases as a result of lockdowns. Unfortunately, some still sustained injuries but there was a delay in seeking treatment because of the fear of going to hospitals. Management thus became more challenging since old untreated injuries were more prone to complications. This lecture will discuss how untreated and complicated patellofemoral disorders and injuries were managed during the pandemic

**DR. ALBERT JEROME C. QUINTOS**

Yr. Inducted as POA Fellow: 1997 PBO Institution: PGH Chapter: NCR Med School: UP '90 Subspecialty Society: PMTS

**Musculoskeletal Tumor Care In The Time Of The Pandemic**

The pandemic forced us to confront uncharted waters in the delivery of musculoskeletal tumor care to our patients. The UP-Philippine General Hospital was tagged as one of the main centers for covid care in Metro Manila, turning this end-referral general hospital to one delivering focused care for Covid patients. As such, resources were directed to this main thrust at the expense of other ancillary services, with orthopedic tumor care forced to adjust to the new hospital priorities. We present a case of a 17-year-old male with an osteosarcoma of the proximal humerus, and we highlight the change in the surgical plan due to the specific considerations for the patient as well as health workers involved, in the face of uncertain treatment guidelines at the start of the pandemic.

**DR. PAOLO M. RAMIREZ**

Graduated Doctor of Medicine at De La Salle University College of Medicine Batch 2016. Dr. Ramirez finished his postgraduate medical internship at Rizal Medical Center in 2017. He passed the Physician Licensure Examination that same year. Currently, he is a senior 4th year resident of Jose R. Reyes Memorial Medical Center Department of Orthopaedics.

**Untreated Fracture of the Tibia and Fibula**

We are presenting a case of a 60-year-old male who sustained a comminuted open fracture injury on the right tibia and fibula from a motor vehicular accident. The patient was unable to seek immediate orthopaedic consult due to the COVID-19 pandemic, causing a deformity on the right leg. Six months have passed until the patient was able to seek consult in our hospital via teleconsult and was scheduled for a face-to-face interview for assessment. The patient's deformity was a result of an untreated segmental extraarticular fracture of the right tibia with significant shortening, and a superiorly dislocated right fibula. Radiographically, all injuries showed no apparent union after 6 months. We will present the challenges we encountered in the treatment of this condition.

**DR. MA. FELMA S. RAYEL**

- Doctor of Medicine in University of Santo Tomas
- Residency Training in Philippine Orthopaedic Center
- Fellowship Training in Orthopaedic Oncology in Hong Kong University and Hand Surgery and Microsurgery in Nagato General Hospital, Japan
- Active Consultant in Bicol Medical Center, Naga City, Camarines Sur
- Consultant Staff in surrounding hospitals in Naga City, Iriga City, & Nabua, Camarines Sur, and Ligao City, Albay

**Post-Menopausal Osteoporosis: To Treat or Not to Treat**

Postmenopausal osteoporosis is a disorder characterized by progressive loss of bone tissue secondary to lower levels of estrogen. Correlation with an increased risk of fragility fractures deems this to be important to be recognized and treated. Evaluation based on physical examination, bone mineral density, fracture assessment tools, and other parameters are pertinent for those 50 years of age. Current recommendations on evaluation, prevention and treatment with pharmacotherapy with supplementation, anti-resorptive drugs, anabolic agents and other modifiable factors will be discussed.

**DR. JONATHAN C. RONQUILLO**

Dr. Jonathan C. Ronquillo is a graduate of De La Salle University - College of Medicine in 1996. He completed his orthopedic residency training in the same institution as chief resident in March 2003 and passed his diplomate examinations in the same year. He fulfilled his subspecialty training as surgical and clinical fellow under the Shoulder and Sports Services at St. George Hospital in Sydney, Australia, and was formerly a staff member of the Orthopaedics Department in Logan Hospital, Brisbane, Queensland, Australia. He has authored and co-authored published materials on the shoulder in peer reviewed journals, and his works have been presented in international and local conventions. He constantly collaborates with international authors as well. His distinct interests are in shoulder, sports and trauma. Currently, he is the chief of the sports and arthroscopy unit in the department of orthopedics, and the unit head of the Advanced Wound Care Clinic at De La Salle University-Medical Center. He is an associate professor at the De La Salle University-College of Medicine, and a student examiner/research paper reviewer for the University of New South Wales, Australia through the Orthopedic Research Institute of St. George Hospital in Sydney, Australia. Dr. Ronquillo is a fellow of the Philippine Orthopaedic Association, President of the Philippine Shoulder Society, Former President of the Philippine Orthopaedic Wound and Diabetic Limb Society, a fellow and board member of the Philippine Orthopaedic Society for Sports Medicine, and a fellow of the ASEAN Society for Sports Medicine and Arthroscopy. He practices at the De La Salle University Medical Center and the Asian Hospital and Medical Center.

### **Chronic, Locked Anterior Shoulder Dislocation in the Elderly. A Problem-Based Approach**

Chronic locked shoulder dislocations are not common and are difficult to manage. These are accompanied by pathological alterations in both the soft tissues and bony anatomy, as well as injuries to adjacent structures. Furthermore, personal and cultural beliefs of local patients cannot be disregarded. Thus, revising a more pragmatic approach. Presenting a sui generis surgical strategy via problem-based approach to an elderly patient with a chronically locked anterior shoulder dislocation, who refused bony transfer and/or any bony replacement procedures (prosthesis).

### **Irreparable Rotator Cuff Tears Reconstructed with Interpositional Patch (ePTFE and Fascia Lata Graft) and Superior Capsular Reconstruction**

Massive irreparable rotator cuff tears are difficult to manage due to lack of tendon, tendon immobility, and fragility. With no currently existing gold standard of approach, management includes debridement, balloon spacers, tendon transfers, various types of grafts, and reverse shoulder arthroplasty. Surgical treatment options performed locally on these difficult conditions will be presented. For massive cuff tears not brought down to the footprint, having viable cuff stumps, an interpositional patch graft with synthetic (ePTFE) and biologic (tensor fascia lata) will be shown; and for massively torn cuff with no viable stump, the first superior capsular reconstruction procedure in the country will be presented, utilizing a tensor fascia lata graft.



#### **DR. JOSE ANTONIO G. SAN JUAN**

Dr. Jose Antonio “Tony” San Juan graduated from the University of Philippines College of Medicine and finished his residency training at the University of the Philippines-Philippine General Hospital. After Fellowship Training in Australia and the USA, he returned to Cebu City, Philippines. He concurrently holds the position of President of the Philippine Orthopaedic Society for Sports Medicine (POSSM) and the ASEAN Society for Sports Medicine and Arthroscopy (ASSA). He is a Fellow and Past President of the Philippine Hip and Knee Society, a Fellow of the Philippine Orthopaedic Trauma Society, Education Chair of AO Trauma Philippines, Council Member of the ASEAN Arthroplasty Association and National Delegate to the Asia Pacific Arthroplasty Society. He is currently the Chair of the Department of Orthopaedics of Chong Hua Hospital in Cebu City, Program Director of the Adult Reconstruction Fellowship in CHH and a partner at the Cebu Orthopaedic Institute.

### **First Person Surgical Recording in Total Joint Replacement: Sharing The Surgeon’s Perspective**

With the challenges we faced in the midst of the pandemic – elective surgeries put on hold which led to limited exposure of trainees to major hip and knee surgeries – we had to find ways to carry on with our efforts to enhance the surgical skills of our trainees. One of the many ways we could achieve such is through First Person Surgical Recording

where the surgeon’s direct visual perspective is shared in real time with those not scrubbed in the procedure and also is available for review by the team post operatively. The availability of the recording for review gives the trainees an opportunity to do preoperative simulation as they prepare for their future cases and allows trainers to do skills assessment of the trainees that will help with evaluation and monitoring of the progress of the residents/fellows. The device highlighted is inexpensive relative to its capabilities and may be a valuable tool for every training program.

### **Knee Arthroscopy Simulation: The CHH Model**

With the scarcity of elective surgeries during the pandemic, we were faced with challenges as to how to continue to enhance and develop the knowledge and skills of our trainees in knee arthroscopy. We decided to go back to the basic skills rather than rely solely on clinical exposure considering the uncertainty of the pandemic. With the permission of the hospital administration, we were allowed to use one of the arthroscopy towers every first week of the month to do dry scope simulation. With the help of a locally assembled triangulation/simulation box, we carried out exercises with our trainees to hone their basic arthroscopy skills. They now have the opportunity to continue with such exercise as often as they want during the week and time allowed by the hospital thus providing an opportunity for repetition, practice and skills enhancement with the available resources already in the institution.



#### **DR. JASON PAUL P. SANTIAGO**

Jason Paul Santiago graduated from the University of the East Ramon Magsaysay Memorial Medical Center, took his residency training in Trauma and Orthopedic Surgery at the Philippine Orthopedic Center. He had his fellowship in Orthopedic Sports Medicine at the Singapore General Hospital in 2013 and Minimally Invasive Total Hip and Knee Arthroplasty Surgery at Wellton Bone and Joint Hospital Seoul, South Korea in 2012. Currently, he is one of the active consultants in the Sports Unit of the Philippine Orthopedic Center. He is also a Member of the Philippine Orthopaedic Society of Sports Medicine and an officer of the Philippine Shoulder Society.

### **A Novel JPS Technique in AcromioClavicular Joint Reconstruction**

AcromioClavicular (AC) joint is one of the commonly injured joints in the shoulder secondary to a fall or trauma of the shoulder. This is stabilized by Acromio-Clavicular (AC) ligament which Surrounds the AC joint and by Coraco-Clavicular (CC) ligament, which is a very strong, heavy ligament whose fibers run from the outer, inferior surface of the clavicle to the base of the coracoid process of the scapula. Different treatment strategies for AcromioClavicular (AC) joint dislocations injuries can be done, either thru an open, minimally invasive, or arthroscopic concepts. There are Different surgical options to treat AC joint dislocation such as using a screw, hook plate, button, tight

rope or a tendon, having the same Goals of surgery which are Acromioclavicular joint reduction and a stable fixation in the horizontal and vertical planes. I want to introduce to you a Novel JPS Technique as another surgical option to treat your AC joint dislocation. I will describe the surgical steps in doing the JPS technique in AC joint reconstruction using a 1/3 semi-tubular plate and fiber tape. This is indicated for Rockwood Type III and type V AC joint injury. JPS technique is simple procedure to do, effective in maintaining a stable reduction of your AC joint and cost effective.



#### **DR. RYMAR L. SIBONGA**

Associate Professor II - De la Salle University Health Science Institute (DLHSI)  
Head - Section of Hand and Reconstructive Microsurgery Department of Orthopedics De la Salle Medical Center (DLSUMC) Diplomate - Philippine Board of Orthopedics Fellow - Philippine Orthopedics Association (POA) - Association of Hand Surgeons of the Philippines (AHSP) Board of Editor - Asia Pacific Federation of Societies for Surgery of the Hand Newsletter (AFPSSH)

#### **WALANT For Upper Extremity Fracture Fixation: A Pandemic Local Experience**

The use of WALANT (Wide Awake Local Anaesthesia No Tourniquet), has been expanded to bony fixation of fractures in the extremity. In the upper limb, the technique was further developed for its application from distal and superficial bones to the ones which are more proximal, and bulkier soft tissue enveloped.

Amongst others, the COVID- 19 pandemic resulted to limited inpatient bed availability, increasing expenses of hospitalization, and rigorous operating room protocols for aerosol generating procedures. In effect, elective surgeries have been delayed for countless reasons.

Our local experience showed that WALANT for upper extremity fracture fixation is an option to bridge the gap towards timely surgical intervention. It can prevent a scenario for bony fixation of a fracture in nascent malunion which may require reconstructive or salvage procedures for better functional outcome.



#### **DR. ANA ROSARIO P. STA. ANA – FAMADOR**

- Finished Orthopedic residency training at the Makati Medical Center
- Completed Spine Fellowship at the Singapore General Hospital
- Currently a Consultant in Makati Medical Center Department of Orthopedic Surgery

#### **Delayed Management of Osteoporotic Vertebral Compression Fractures**

Vertebral compression fracture (VCF) is the most common complication

of spine osteoporosis, which can cause pain at the fracture site and loss of vertebral body height. Treatment of these fractures has focused on pain relief and restoration of functional mobility, conventionally through adequate medical pain management, activity modification, physical therapy, and bracing. Although most fractures heal within a few months with conservative treatment, some people have continuing pain and disability. During the acute stage, selected patients with severe refractory pain or rapid progression of kyphosis despite bracing and pain management may benefit from minimally invasive options of cement augmentations in the form of vertebroplasty and kyphoplasty. With disease progression however, especially if left untreated, VCFs may result in chronic pain from pseudarthrosis or altered kinematics due to a progressive deformity causing sagittal imbalance, which may consequently lead to affectation of neurologic function and progressive disability. Several factors contribute to delays in the diagnosis and subsequent treatment of these fractures, including degree of adherence to diagnostic protocols or the availability of imaging techniques. Other non-medical factors also play a major role, such as the failure to seek or obtain immediate medical assistance due to financial, physical or psychological burdens, or sometimes even due to unforeseen glaring circumstances like a pandemic. The time interval between the date of injury and the diagnosis of these vertebral compression fractures hinders proper management and increases the probability of chronic disability and neurologic deterioration. Surgical treatment should be considered in cases of nonunion or osteonecrosis, progressive deformation, and spinal cord compression after conservative treatment or other measures have failed, or in cases of delayed diagnosis or consult, completely bypassed. In the presence of a neurological deficit, urgent surgical decompression is required if the patient's general condition allows it. Posterior fixation may be necessary in cases that require correction of BY: Ana Rosario Sta. Ana-Famador a malunion or fixed deformity due to VCF or multiple VCFs that were not treated initially. When vertebral fixation is necessary, the hold of implants in osteoporotic bone is uncertain, and different strategies can be used to limit these risks, including optimal screw trajectory, multiple anchoring points, and screw augmentation. Pharmaceutical treatment of osteoporosis is also an essential element in the management of these cases, especially to prevent new fractures and limit postoperative risks of implant failure due to the underlying disease.



#### **DR. CARLO EMMANUEL J. SUMPAICO**

#### **A Model for the Achilles Tendon Tenotomy for Clubfoot: The Adidas Solution**

As an educator in Pediatric Orthopedics, the achilles tendon tenotomy in children with clubfoot deformity may be one of the more challenging procedures to teach or demonstrate to Orthopedic Trainees. Difficulties include the danger of the incision site due to the proximity to the neurovascular bundle behind the medial malleolus, the condition of the child who may be struggling and uncooperative and the inherent difficulty in the ability to describe or

convey the “feel of the cut” as the blade is pushed through the Achilles tendon. This lecture will present a novel method of demonstrating the achilles tendon tenotomy procedure for clubfoot to Orthopedic Trainees that includes the proper “feel of the cut,” without the dangers of iatrogenic injury to the neurovascular bundle of the foot and without the difficulties encountered with an uncooperative or struggling child.



#### DR. JOSE FERNANDO C. SYQUIA

Jose Fernando Syquia graduated from the University of Santo Tomas Faculty of Medicine and Surgery (magna cum laude) and took his residency training at the Philippine Orthopaedic Center. He subspecialized in Adult Reconstruction and Joint Replacement Surgery at the Stanford University Medical Center. He is a past president of the Philippine Hip and Knee Society and is a past chairman of the Philippine Board of Orthopaedics. He is currently the head of the Arthritis and Joint Replacement Center of De Los Santos Medical Center and the chairman of the Department of Orthopaedic Surgery of the same institution. He likewise heads the Trauma Service of the Department of Orthopaedic Surgery of UST and Makati Medical Center, he is the chief of the section of Orthopaedic Surgery at the Ospital ng Makati, and he is an assistant professor at the UST Faculty of Medicine and Surgery.

#### Ten Tips When Performing Tkr

The following tips have helped me when performing total knee replacement. I hope that you would, at least, find some of them helpful in your practice.

1. Position the tourniquet such that it will not displace distally during the procedure.
2. Incise up to the deep fascia before mobilizing the skin and subcutaneous tissues.
3. On the template, mark where the femoral intramedullary guide should enter the distal femur.
4. Use a pointed instrument to mark the entry point of the intramedullary guide on the femur.
5. Be careful of the side of the saw blade when cutting bone.
6. Utilize as many guides as possible when determining the rotational position of the femoral cutting jig.
7. Mark the pinholes with methylene blue if reapplication of cutting jigs is a possibility.
8. Mark the position of the tibial base plate after cutting the proximal tibial.
9. The patella is cut parallel to its anterior surface.
10. Final soft tissue balancing is done after all bone cuts.



#### DR. IREWIN A. TABU

The current president of Fragility Fracture Network (FFN)- Philippines and the Asia-Pacific Deputy Chair of the FFN Regionalization Committee. He graduated from the UP College of Medicine in 2003 and subsequently trained at the University of the Philippines- Philippine General Hospital Department of Orthopedics. Currently, he is the Chief of the UP-PGH Orthopedic Trauma Division and the Head of the POA Osteoporosis and Orthogeriatric Working Group. He is also a Council Member of the Asia-Pacific Osteoporosis and Fragility Fracture Section, as well as the Philippine Orthopedic Trauma Society, the Philippine Hip and Knee Society, and an AO Trauma Philippines Faculty.

#### Acute Surgical Management of Covid-19 positive Elderly Patients with Hip Fractures

COVID-19 infection in patients with acute fragility hip fracture complicates the decision-making process in the management of these patients. However, prompt surgical management should still be considered for elderly patients with asymptomatic and mild to moderate COVID-19 infection who incurred hip fractures. A multidisciplinary approach should be employed to expedite timely surgical intervention prior to the development of secondary complications and clinical deterioration, as well as to achieve the best outcomes in patients with coexisting COVID-19 infection and acute fragility hip fracture. There are several surgical options that can be done to provide acute care for this challenging subset of patients, provided that it is supported by a multidisciplinary orthogeriatric care approach.



#### DR. HERMINO VALENZUELA

A graduate of the University of the Philippines College of Medicine Integrated Liberal Arts Medicine program in 1999. He finished his Orthopedic Surgery Residency at the Philippine General Hospital in 2003. Finished an Orthopedic research fellowship with Dr. Todd Swanson at the Desert Orthopedic Center in Las Vegas Nevada in 2004. He then continued with an Australian Orthopaedic Association accredited fellowship in Melbourne Australia under Mr. Ian Henderson, a renowned Sports and Cartilage Surgeon in 2005. He has special interests in minimally invasive total joint replacement, alternate bearings in joint replacement, and cartilage regeneration. He divides his practice between The Medical City and the Medical City Clark.

#### Fragment retaining hip arthroplasty for unstable intertrochanteric fractures (or how we learned to save the neck)

The lecture is a practical guide on how a fragment retaining bipolar hip arthroplasty is performed. It describes the logic behind the thinking and principles on how to do it efficiently and safely. Given the pandemic situation the past few years, this technique

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gave the surgeon and his partners the ability to perform surgeries on problematic fractures and effectively do early mobilization and decrease morbidities.



### **DR. JANOS F. VIZCAYNO JR.**

Year Inducted as POA Fellow: 2018 PBO Institution: SLMC Med School: CDUCM '10

#### **Hook Plate Fixation for Displaced Distal Clavicular Fracture**

The ideal fixation method for unstable distal clavicle fractures is still controversial. Clavicular hook plates are an effective option with a high percentage of union, providing a single solution for fixation of both distal clavicle fracture and coracoclavicular (CC) ligament disruption. However, concerns about long term complications still exist.

# RESEARCH PAPERS

### 1. Osteosynthesis of Metacarpal and Phalangeal Fractures using Interlocked K-wire Technique Followed by Early Mobilization: A Pilot Study

Modesto Bolislis, MD  
ITRMC

**Introduction:** The use of k-wires is a well-established technique for fixation of metacarpal and phalangeal fractures. These are inexpensive, readily available, and can be inserted percutaneously. Despite the advantages, k-wire use has complications such as wire loosening and breakage and is usually supplemented by use of splints. Immobilization of the digits might lead to joint stiffness and pain. The study aims to see if interlocking the k-wires together with early mobilization will not lead to loss of fixation and had good outcomes.

**Design:** This is a descriptive study design. Purposive sampling was used within 12 months of data gathering. The samples include metacarpal and phalangeal fractures with no tendon or nerve involvement. Injuries requiring subsequent procedures, those with polytrauma and/or comorbidities were excluded into the study. The technique was interlocking the k-wires to each other forming a triangle, applying a volar splint for 48 hours, and early range of motion exercises for the affected and adjacent digits.

**Results:** A total of 22 fractures were evaluated with a breakdown of 8 metacarpal, 11 proximal phalanx and 3 middle phalanx fractures. At 4th week post operatively, 21 fractures have a stable fixation; 1 had a loss of fixation as evidenced by wire loosening and backing out. At 12th week post operatively, 21 fractures achieved union. 1 had a non-union as evidenced by motion and pain at the fracture site; no fractures went into malunion; 4 reported pains at the joint near the fracture site with a mean score of 4.25/10 and these were observed to be intraarticular fractures. No pain was reported on the adjacent joints during range of motion.

**Conclusion:** The interlocked K-wire technique is a stable configuration to permit early mobilization and its use might be only applicable to simple fracture configuration. A larger sample size, longer follow up period, and a comparator group are the recommendations for further research studies.

**Keywords:** k-wire, fracture, fixation, metacarpal, phalanx, interlock

### 2. The Initial Impact of COVID-19 on the Orthopedic Trauma Surgeries in one of the Government Tertiary Hospitals in the Philippines

Josh Rosales, MD  
NMMC

**Background:** This government tertiary hospital is the only COVID-19 referral hospital in the entire region, serving a total population of 4.7 million. This is a pioneer study in the local setting on the initial impact of the COVID-19 pandemic on orthopedic trauma services in a COVID-designated public tertiary hospital. Objective and quantifiable data on orthopedic surgical cases from the orthopedic department's trauma service during a three-month period in 2020 was compared to a similar period in the previous pre-pandemic year (2019).

**Methods:** The study is descriptive, using review of records as the data collection method. It includes data gathering from patient charts and the census of orthopedic trauma surgical cases from March 2019 to May 2019 and March 2020 to May 2020. Descriptive statistics were used to present data in proportions and percentages.

**Results:** A total of 179 patients underwent 196 procedures during the pre-pandemic period and 72 patients underwent 91 procedures during the initial period of the pandemic. The total number of trauma surgical procedures decreased by 53.6%, with the upper and lower extremity procedures decreasing by 36.5% and 61.7%, respectively. The number of surgical patients decreased in the pandemic period by 59.8% compared to the previous year. There is a consistent decrease in all age groups.

**Conclusion:** COVID-19 modifications of institutional protocols, government health restrictions, and an increased emphasis on non-surgical treatment modalities in orthopedic patients has had a major impact on the orthopedic trauma service. The number of acute trauma surgical patients in the hospital dropped more than half in the early pandemic period. Cancelling and postponement of elective cases contributed to the significant drop of surgical cases. Continued need for orthopedic services should be considered when planning for staffing and resource deployment during the pandemic.

**Keywords:** COVID-19, Initial Impact, Orthopedic Trauma

### 3. Low-cost surveillance for lower extremity fracture union after intramedullary nailing – experience on 80 SIGN patients by a Philippine trauma center

Erika Paulina Stefani H. See, MD

**Background.** There is need to come up with low-cost strategies for assessing fracture union following surgical treatment in developing countries. We aimed to develop one by determining the optimal surveillance schedule taking into account associated factors and diagnostic performance of S & S test.

**Methods.** A total of 80 patients with lower extremity fracture treated with the SIGN nail were followed for at least 8 months. Time to fracture union were calculated using the RUST, and variables analyzed for association with fracture union. Forty-eight patients performed additional S & S test, and sensitivity, specificity, positive and negative predictive values, and accuracy of S & S test were assessed.

**Results.** Ten (12.5%) of 80 patients developed nonunion, and presence of superficial infection ( $28.5 \pm 5.6$  weeks vs  $17.2 \pm 1.2$  weeks,  $p=.01$ ) and pain on weight-bearing ( $29.6 \pm 2.2$  weeks vs  $16.8 \pm 1.2$  weeks,  $p<.001$ ) were associated factors. Cumulative incidence at 16 weeks was 59% (58% to 60%), and S & S test had high Sn (90%) and Sp (100%) in diagnosing union with NPV and PPV of 67% and 100%, respectively, and accuracy of 92%.



Conclusions. S & S test may reliably detect fracture union by fourth month after surgery, while closer follow-up is likely needed for patients developing superficial infection or pain on weight-bearing.

Key words. RUST; Squat and smile test; SIGN; Trauma; Fracture

#### 4. Incidence Of Orthopaedic Trauma Cases Managed in A Tertiary Hospital in Western Visayas During the Pre Covid and Covid Period: A Comparative Study

Almar Bantolo, MD  
WVMC

Objectives: To determine the incidence of Trauma cases during the pre-Covid versus Covid period in tertiary hospitals in Western Visayas and its effect on each orthopedic training programs in the region.

Methods: All data will be gathered from Orthopedic training institutions in Western Visayas namely Western Visayas Medical Center, West Visayas State University Medical Center, and Corazon Locsin Montelibano Memorial Regional Hospital during the Covid period (January 1, 2020, to December 31, 2020) and pre Covid period (Jan 1, 2019, to December 31, 2019). These data are extracted from the PBO Elogbook which were submitted by each training institution in the years 2019 and 2020 with the permission of the Chairman of the Philippine Board of Orthopaedics. Only trauma cases shall be included.

Results: Out of the three training institutions, only CLMMRH had an increase of more than half (177.938%) in the number of trauma cases during the COVID period compared to pre-COVID years. While the other two, WVMC and WVSU-MC, decreased by more than one-fourth. All three institutions had significant differences in the distribution of trauma cases between the pre-COVID and COVID period. There was no significant difference in the decrease of cases (2.715%). Decrease in the number of cases was observed during the months of May (50.000%), September (29.651%), October (25.543%) and November (43.925%).

Conclusion: COVID 19 has affected all sectors including healthcare including residency training. With the frequent lockdowns and restrictions, movement of people were also affected which in turn decreased the incidence of trauma. Also, the designation of most centers as Covid 19 dedicated hospitals has affected the bed capacity and cases catered by the hospitals with preference to Covid 19 patients. This has decreased the number of trauma cases in WVMC and WVSUMC wherein patients were diverted to other nearby private hospitals and satellite hospitals. On the other hand, CLMMRH has noted an increase in the number of trauma cases.

Keywords: COVID 19, Trauma Cases, Pre- covid, Covid period

#### 5. A Retrospective Cohort Study on Using Fully Threaded, Cortical Screws in Locking SIGN Intramedullary Nails

Christian Emmanuel M. Fontanilla, MD; Romer Ariel M. Santos, MD, FPOA  
EAMC

Intramedullary nails produced by the Surgical Implant Generation Network (SIGN) are solid and straight used for fractures of the femur or tibia. These utilize interlocking screws with proximal and distal threads to purchase at the cortices. When SIGN interlocking screws are unavailable, 4.5 mm, fully threaded, stainless steel, cortical screws are sometimes used to lock the nail. This study compared the alignment, fracture healing, and screw failure rates between cases which solely used SIGN interlocking screws and those which incorporated fully threaded, cortical screws. The SIGN census from January 2018 to August 2021 was reviewed. 79 cases were included in this study. 59 solely used SIGN interlocking screws and 20 incorporated fully threaded, cortical screws. The former cases had acceptable alignment in 91.5%, 3-4 bridging cortices by the 12th week in 81.4%, and no screw failure in 96.8%. The latter group had acceptable alignment in 90.0%, 3-4 bridging cortices by the 12th week in 80.0%, and no screw failure in 95.0% of cases. The chi-square test showed no significant difference in outcomes between the two groups, with  $p = .836$  for fracture alignment,  $p = .894$  for fracture healing,  $p = .745$  for screw failure. This study concluded that 4.5 mm, fully threaded, stainless steel, cortical screws may be incorporated to lock SIGN nails when SIGN interlocking screws are unavailable.

Keywords: SIGN, Nail, Screw, Femur, Tibia, Fracture

Disclosure: The authors of this study did not receive benefits of any form from any third party in relation to this research.

#### 6. The Pelvic Inlet and Outlet Radiographic View in Filipinos A retrospective study of CT scan measurements and 3-Dimensional Computed Tomography Reconstructions

Ricky Chua, MD

Background: Injuries to the pelvic ring pose a significant challenge requiring urgent multidisciplinary management. Adequate radiological evaluation is essential in assessing these injuries. The standard radiologic evaluation of the pelvis includes an AP, inlet, and outlet view. The inlet and outlet view are classically taught to be orthogonally taken with a 45-degree angulation from the anteroposterior plane. However, there is growing evidence that there is a significant individual variation within the population and these values need to be re-analyzed.

Materials and Methods: This is a retrospective study done in a level I trauma center. A total of 110 patients (62 males and 48 females) older than 18, who had clinically indicated Computed Tomography (CT) scan done without any pelvic pathologies were included. A 3D Multiplanar reconstruction (MPR) and 3D reconstruction CT scans were derived from the DICOM images and various methods were used to analyze the ideal angulations based on the 2-Dimensional and 3-Dimensional images rendered.

Statistical analysis: Mean and standard deviation were calculated for each angle measured with a comparison between gender and presence or absence of dysmorphic sacra. A correlational analysis was then done comparing the angles obtained on the sagittal CT scan from the 3D MPR and the ideal inlet and outlet angle from the 3D reconstructed images.

Results: The mean caudal angulation for the inlet view was  $31.448 \pm 7.25^\circ$  with no significant difference for the normal and dysmorphic sacrum and the mean cephalad angulation for screening for the ideal outlet view was  $38.39 \pm 6.96^\circ$  with individuals with dysmorphic sacra having an angulation  $5^\circ$  more than the normal group

Conclusion: The study re-evaluated the ideal screening inlet and outlet angulations in the Filipino population which demonstrated a mean of  $31^\circ$  of caudal angulation for the inlet view and a mean of  $38^\circ$  of cephalad angulation on outlet views.

Keywords: Pelvis, Pelvic Fracture, Inlet angle, Outlet Angle, CT scan 3D reconstruction

## 7. Comparison of Revision Rate and Complications of Total Knee Arthroplasty Between Filipino Octogenarians and Their Age-Appropriate Controls

Loren Albarilo, MD

Introduction. Total knee arthroplasty (TKA) is a surgical intervention for treatment of end-stage knee arthritis. This retrospective study aims to describe and compare the complications and revision rate of total knee arthroplasty in Filipino octogenarians (age 80 and above) and age-appropriate controls (age 70 and below).

Methodology. All patients who underwent TKA at a single tertiary hospital from January 2011-March 2021 were included. Patients were then classified into two groups: octogenarian and non-octogenarian. The following patients were excluded in the study: non-Filipino, patients aged 70-79 years at time of surgery and patients with incomplete hospital data. Demographic data, preoperative comorbidities, blood transfusion, length of hospital stay, complications (including readmission and mortality within 90 days from surgery) and revision surgery were obtained from the patients' hospital records and compared.

Results. A total of 58 subjects were included: 15 subjects (26.3%) classified under the Octogenarian group (mean: 82 years, 80-88 years) and 43 subjects (mean age: 60 years, 48-69y years) belonged to the Non Octogenarian group. The two groups were similar with respect to sex, BMI, American Society of Anesthesiologists (ASA) preoperative status and preoperative comorbidities. Octogenarians stayed at the hospital for an average of 6.57 days while non octogenarians stayed for an average of 7.7 days ( $p = 0.4041$ ). 33.3% of the octogenarians had blood transfusion in comparison to 13.9% among the non-octogenarians ( $p = 0.4728$ ). The following complications within 90 days from surgery were noted: readmissions (2), pneumonia (2) and deep vein thrombosis (1) – all of which are from the Octogenarian group. Only 1 (from Octogenarian group) underwent revision surgery for infection. No mortalities noted from both groups.

Conclusion. Total knee arthroplasty has an overall low complication rate, even among Filipino octogenarians. There is no significant difference in terms of blood transfusion and length of hospital when compared to their age-appropriate controls. However, a significantly higher revision rate and readmission within 90 days from surgery is observed and should be discussed preoperatively with Filipino octogenarians who are indicated and amenable for the elective surgery.

Keywords: total knee arthroplasty, octogenarian, 90-day complications, revision rate, Filipino

## 8. Functional And Radiographic Outcomes in Patients Who Underwent Transforaminal Lumbar Interbody Fusion Using Posterior Instrumentation, Autologous Inferior Articular Facet Bone Block with Polyetheretherketone Cages and Morselized Autologous Bone Graft

Jessiah Navarro, MD

Background: Transforaminal lumbar interbody fusion along with transpedicular fixation has been a well-established method for lumbar spinal fusion for patient with degenerative spine diseases. Improvement for overall post-operative outcomes in relation to bony union and stability has been controversial. The objective of this study is to determine the clinical and radiographic outcomes of patients who underwent transforaminal lumbar interbody fusion using inferior articular facet bone block autograft with PEEK cage with morselized autograft in patients with Degenerative Lumbar spine disease

Methods: Retrospective study, 18 patients (6 females and 12 males) included. Immediate and 1-year post-op follow up for Taillard index and Radiographic criteria for union were compared. Oswestry Disability Index (ODI) pre-and post-operatively, was assessed through follow-up/telemedicine.

Results: The mean age was 63 years old (SD=11.75). Pre – 36.2 and post operative 9.5 ODI ( $t=1.57$ ,  $p=0.122$ ) was statistically different. Immediate and 1 year follow up Taillard indices were not statistically different. Close correlation between functional outcomes and radiographic union cannot be established due to sample size.

Conclusion: TLIF using inferior articular facet bone block with PEEK cage has promising results in achieving satisfactory functional outcomes and bony union in the treatment of degenerative lumbar spine disease. Comparative study between use of iliac bone graft versus the autologous inferior articular facet bone block is encouraged.

Keywords: Transforaminal interbody fusion, inferior articular facet bone block graft, PEEK cage, TLIF, Degenerative lumbar spine disease, Oswestry Disability Index, Taillard Index

### 9. A Review of Clinical Outcomes in Children with Clubfeet Treated with Ponseti method: A single-center study

Ritesh Pokharel, MD  
ITRMC

**Background of the Study:** Clubfoot or Congenital Talipes Equinovarus (CTEV) is one of the most correctable congenital deformities which affects 1 in 1000 live births. It is more common in boys than girls with a ratio of 2.5:1 and 80% of children born with clubfoot worldwide belong to low to middle income countries. The Ponseti method is not only a detailed method of manipulation and casting but also of preventing and treating relapses and has now become the gold standard of care for the treatment of congenital clubfoot. Currently, few studies have been done in the Philippines to evaluate the state and outcome of clubfoot treatment in the country. With varying data as to its success rate and the factors associated with failures of treatment, the purpose of this study is to assess and evaluate local data in order to identify the effectiveness of Ponseti casting in our setting and find areas for improvement.

**Objective:** This study aimed to determine the clinical outcomes of clubfeet treated with serial casting using the Ponseti method in our institution over a period of 3 years.

**Methodology:** This was a retrospective study that investigated patients with congenital talipes equinovarus enrolled in Miracle Feet clinic at Ilocos Training and Regional Medical Center from January 2019 to December 2021.

**Results:** A total of 21 patients with 29 clubfeet were included in this study of which all were of idiopathic type. The overall early success rate of Ponseti technique including manipulation, serial casting and tenotomy was 96.55 % for the correction of clubfoot deformity. The surgical rate was 3.45% in the form of posteromedial release of tendon. The complication rate was 3.45%. The tenotomy and bracing rates were noted to be 72.41% and 95.23% respectively.

**Conclusion:** This study provided more evidence of the high early success rate and low complication rate of the Ponseti treatment regime for clubfoot management in the local setting.

**Keywords:** Clubfoot, Congenital talipes equinovarus, Ponseti method, Pirani score

### 10. Characteristics, Treatment Patterns and Clinical Outcomes of Patients diagnosed with Fungating Soft Tissue Sarcomas

Tristan Dwight T. Sebastian, MD; Edward HM Wang, M.D, MSc (Epi)  
PGH

**Objective:** Fungating Soft Tissue Sarcoma is a rare type of tumor that has limited literature to describe its clinical characteristics, treatment, and outcomes. This study aims to describe important clinical characteristics, treatment patterns and outcomes of a local series of twenty patients diagnosed with Fungating Extremity Soft Tissue Sarcoma (F-ESTS) and treated by a single surgeon at a sarcoma unit.

**Methodology:** We did a retrospective clinical case series study on twenty F-ESTS patients treated by the senior investigator at a sarcoma unit over a period of 25 years (1993-2018).

**Results:** There is a 10.9% local incidence of F-ESTS which commonly occurred in middle-aged group with a mean age of 48.7 years old, predominantly in women. The most common site of the tumor was on the thigh (50%). The average size of the tumor on presentation at the clinic was 11.8cm, mostly were deep and 85% were high grade with liposarcoma (31%) as the most common histological diagnosis. Eleven patients (55%) had unplanned excision and two underwent diagnostic biopsies prior to consult at the sarcoma unit. Limb salvage was done in 60% of the patients. Reconstructive procedure was done in 50% of the patients (skin graft in seven patients, flap coverage in three patients). Outcome wise, three patients developed complications (two SSI/wound dehiscence, one wound dehiscence), there was 25% local recurrence, 65% distant metastases and the mean survival was 47.8 months ranging from 2 months to 13.5 years. Sixty percent of the patients died of the disease.

**Conclusion:** The clinical characteristics in our F-ESTS series include patients < 65y.o., with deep and high-grade tumors, usually liposarcomas, with a predilection for the thigh, and with a previous history of surgery or biopsy. Most F-ESTS patients underwent limb salvage surgery, receiving RT if they had both deep and high-grade tumors. Our series had the following outcome: five (25%) patients developed local recurrence, thirteen (65%) patients had distant metastases, twelve (60%) died of disease with a mean time to death of 21 months from diagnosis. Most F-ESTS patients were still able to undergo limb salvage surgery. In the last 10 years, limb salvage surgery has become the treatment of choice for patients in this series. This upends the notion that fungating tumors require an amputation and may allay fears of contamination from “tumor leakage”.

### 11. Coflex Interlaminar Stabilization and Decompression for Lumbar Spinal Stenosis: A 7-Year Follow-Up and Assessment

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**Background:** The use of dynamic stabilization devices such as the Coflex device are recent advances in techniques of lumbar spine surgery which have been developed in an effort to overcome the adverse effects of decompression and spinal fusion, which is long been considered the gold standard in the treatment of lumbar degenerative disease. There have been a few studies which assess its outcomes, but only go to as far as a four-year assessment. Thus, this study aims to evaluate retrospectively the clinical effects in the long-term, 7-year follow up of patients who underwent lumbar decompression and Coflex interlaminar stabilization for treatment of spinal stenosis with symptomatic low back pain.

**Methods:** This study was a retrospective review of patients who underwent lumbar decompression with concomitant placement of Coflex device for a diagnosis of degenerative lumbar disease, and/or low-grade spondylolisthesis (Meyerding Gr I). Statistical analysis was employed using a paired t-test to assess for statistical significance in terms of clinical outcomes in the determined points of follow-up.

Results: This study analyzed a total of 16 patients with a 7-year follow up who underwent lumbar decompression and Coflex interlaminar stabilization under a single surgeon in a tertiary level center. The average age is 48 years old with a male predominance in the pool of patients. The Oswestry disability index (ODI) and visual analog scale (VAS) leg and back pain scores of both groups significantly improved compared with the baseline (all  $P < 0.05$ ), and no difference were indicated in terms of the VAS back pain score at the subsequent follow-up point.

Conclusions: The present study was able to demonstrate that lumbar decompression along with Coflex interlaminar stabilization is able to achieve long-term satisfactory clinical outcomes and may present as a viable option in the treatment of select patients with symptomatic back and leg pain in the background of lumbar degenerative disease.

Keywords: Coflex, Lumbar degenerative disease, ODI, VAS

## 12. Survival Analysis of Patients with Pathologic Fracture from Metastatic Bone Disease in A Single Tertiary Center

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Background: Metastatic bone disease (MBD) poses a high risk for skeletal-related events including pathologic fractures and spinal cord compression, subsequently leading to higher mortality after definitive surgery. Estimation of survival is important in the treatment of metastatic pathologic fractures to help set patient, family, and physician expectations on prognosis.

Method: This is a retrospective cohort study involving 128 patients – 109 treated surgically and 19 treated nonsurgically. Risk factors for six-month survival including age, preoperative serum albumin, absolute lymphocyte count (ALC), and hemoglobin, primary tumor site, presence or absence surgical procedure, presence of visceral metastases, presence of other bony lesions, and presence of chemotherapy/radiotherapy use were evaluated. Cox proportional-hazards regression was employed to determine the hematologic and serologic predictors of mortality.

Results: Mean age of patients was 60.05 years old (SD=11.10) and 56.25% were female. The most common site is from breast (32.02%), then the lung (25.00%). Patients who expired within the first six months from time of MBD diagnosis comprised of those with low preoperative hemoglobin (17.54%), low ALC (16.90%), and low serum albumin (98.25%), compared to those who expired within 12 months, but were not found to be statistically significant ( $p=0.511$ ,  $p=0.302$ , and  $p=0.628$ , respectively). 85.16% of the study population had surgery; the proportion of patients who survived within six months and had surgical intervention (82.46%) was not significantly different ( $\chi^2=0.59$ ,  $p=0.441$ ) from those who expired and had surgery (87.32%).

Conclusion: Primary tumor site is an independent prognostic factor of survival in patients diagnosed with pathologic fracture from MBD treated surgically or nonsurgically, with primary lung malignancy as having the poorest chance of survival. Preoperative serum albumin,

hemoglobin, and ALC were not found to be significant in predicting survival but may still be used as determinants of nutritional and clinical status of patients contemplated for surgery.

Key words: Metastatic bone disease, Mortality, Pathologic fracture, Survival

## 13. Short-Term Outcomes of Patients with Fragility Hip Fractures Infected with SARS-CoV-2 Managed in a COVID-19 Referral Hospital with an Orthogeriatric Team

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Hip fractures in the elderly population is a significant cause of mortality and morbidity, with a huge economic impact to the healthcare system. Perioperative presence of COVID-19 infection in patients with acute fragility hip fracture complicates the decision-making process in the management of these patients. In this ambispective study, the patient database of a COVID-19 referral hospital with an orthogeriatric team was reviewed to determine the mortality and morbidity rates, and short-term functional outcomes of patients with coexisting COVID-19 and acute fragility hip fracture who underwent surgery. A total of 17 patients were admitted with preoperative COVID-19 infection and acute fragility hip fracture – 10 of which had surgery. Mean injury-to-admission and admission-to-surgery intervals were 7.0 and 4.6 days, respectively. Joint replacement procedures were done in all patients with a mean operative time of 162.9 minutes and an average blood loss of 395 ml. Thirty-day mortality and morbidity rates were 10% and 30%, respectively. Mean EuroQoL overall health score at short-term follow-up was 81.4. A multidisciplinary orthogeriatric team approach should be employed to expedite timely surgical intervention prior to the development of secondary complications and clinical deterioration, as well as to achieve the best outcomes in patients with coexisting asymptomatic and mild COVID-19 infection and acute fragility hip fracture.

## 14. The Use of Consignment Method to Increase Joint Replacement Surgeries in a Tertiary Hospital

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The number of joint replacement surgeries in the Philippines is continually on the rise as the population ages and fragility fractures become more commonplace. Unfortunately, the cost of joint replacement implant still remains a huge burden in the great majority of our patients. The Universal Health Care Act of 2019 ensures that all Filipinos can access quality and affordable healthcare services. In line with this, the Department of Health made the procurement of medical devices such as joint replacement implants easier through consignment method. In developed countries with socialized healthcare system, this has been a standard operating procedure in both government and private

hospitals. For this reason, the Mariano Marcos Memorial Hospital and Medical Center started consigning hip and knee replacement implants since August 2021. This significantly increased the census of joint replacement surgeries by more than 50% in just 8 months compared to the average cases done from 2017-2020 combined. It was also observed that since its implementation, 9 out of 10 candidates for joint replacement surgery were able to undergo the procedure without undue financial burden. Thus, this method proved to be effective and consistent with the goals of the Universal Health Care Act.

#### 15. Clinical outcomes of iliac crest bone graft versus fracture callus in the treatment of nascent malunions of the femur and tibia

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**Background.** Iliac crest bone grafting (ICBG) has been the treatment of choice for cortical defects after open reduction internal fixation of nascent malunion of diaphyseal fractures. However, complications in the harvest site have been recorded. This study evaluated the radiologic outcomes of nascent malunions of the femur and tibia treated with iliac crest bone grafting and fracture callus used as bone graft material.

**Methods.** A total of 146 patients who had nascent malunion of either femur or tibia and undergone open reduction internal fixation, with augmentation of cortical defects either with ICBG or fracture callus bone graft. There were 49 patients in the ICBG group and 97 patients in the fracture callus group. Patient demographics including sex, age, fracture classification, type of graft used, time to union, and complications, were evaluated.

**Results.** One hundred forty-four (99%) of the 146 patients achieved radiographic union, with mean interval from surgery to union of 151.97 days (range, 134 to 420 days). Mean time estimates were 154 days (range, 150 to 158 days) and 151 days (range, 148 to 154 days) for the ICBG and callus groups, respectively.

**Conclusion.** Our study did not find significant difference in time to radiographic union ( $154 \pm 3.7$  days vs.  $151 \pm 2.9$  days,  $p = .197$ ), occurrence of nonunion (2% vs. 1%,  $p = 1.000$ ), and development of deep infection (2% vs. 0%,  $p = .336$ ) between the two groups. This study presents the use of fracture callus as a viable option to use as a bone grafting material to augment bone healing of cortical defects in fixed nascent malunion or delayed union cases, and the risk for donor site complications as seen in ICBG harvesting is eliminated.

**Key words.** Malunion, non-union, nascent malunion, bone graft, iliac crest, fracture callus, time to union, complications

#### 16. Negative Pressure Wound Therapy for Prevention of Post-Operative Wound Complications in Posterior Spinal Surgery: A 10-Year Retrospective Study

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Surgical site infection after a lumbar spine surgery is a serious complication with significant morbidity and economic burden. Studies from European populations report infection rates ranging from 9.3 to 20%. Despite numerous interventions, including prophylactic antibiotics use, improvements in surgical techniques, and postoperative care, it continues to affect patients after lumbar surgery causing an increase in hospital stay duration, re-operation rates, and additional treatment costs. Vacuum-assisted closure dressing has recently been gaining popularity in the management of open wounds. This study aims to review the use of the vacuum assisted closure dressing in the prevention of both superficial and deep infections after posterior spinal instrumentation surgery.

**Study design:** This is a retrospective study with the population taken from a private tertiary hospital in Cebu. Patients selected were those who underwent posterior spinal surgery (cervical, thoracic, lumbar); those treated with negative pressure wound therapy postoperatively from January 2017 to May 2021; patients who were treated with traditional sterile dressing/closed suction drain postoperatively from May 2011 to December 2016; patients who sustained surgical site infections postoperatively and Patients with any of the 3 types of surgical site infection (superficial, deep and organ or space SSI).

**Results:** Between May 2011-May 2021, 7 out of 378 patients developed both superficial and deep infections after spinal surgery with traditional dressing postoperatively and only 4 patients developed a superficial infection using VAC dressing postoperatively. All patients had achieved clean closed post-operative sites along with retention of their instrumentation. None of the patients had a recurrence after the treatment.

**Conclusion:** The study demonstrates the usefulness of vacuum assisted closure dressing in prevention of surgical site infections after instrumented spine surgeries as it eliminates prolonged use of antibiotics, extended hospital stays, subsequent procedures or removal of the implants.

### 17. Functional Outcomes of Fragility Hip Fractures During The COVID-19 Pandemic: A Single Center Experience

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VMC

The COVID-19 disease was declared as a Pandemic by the World Health Organization in March 2020. Provision of essential care to infected and suspect patients were prioritized in the local healthcare setting and urgent as well as elective orthopaedic surgical procedures were delayed in order to minimize hospital entry and stay of non-infected individuals. Due to mandated measures which included travel restrictions and social distancing, there has been a decrease in trauma cases all the while osteoporotic and fragility hip fracture incidence remained constant. Hip fractures in the elderly are considered as Orthopaedic emergencies which require early surgical stabilization. With the local healthcare systems focusing on providing critical care to COVID infected and suspect patients, as well as the stringent requirements prior to managing cases in the operating room, delays in management of fragility hip fracture cases have been inevitable which may lead to poorer functional outcomes. Since there is currently literature lacking with regards to the functional outcomes of elderly patients with fragility hip fractures during this COVID-19 pandemic, the aim of this study is to determine the functional outcomes of fragility hip fracture patients who were admitted at our institution during this COVID-19 pandemic period. Data will be collected from consenting elderly patients upon admission at our institution. The average time between date of admission and date of surgery, as well as the average total length of hospital stay will be computed. The incidence of delay to surgery will be determined and recorded. Premorbid functional outcome as well as post-operative functional outcome will be determined upon admission and at one, three, six-, and twelve-months post operatively using the Modified Harris Hip Score scoring system.

### 18. Effect Of Microdacyn on Fracture Healing on Sprague Dawley Rats Using Histomorphometric Study

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Background: Open fractures are difficult to treat once a component of infection has become part of the picture, wherein debridement and antibiotics have been the standard of care for eradication of the microorganisms. There are various antiseptic solutions available, but several studies have showed their pernicious effects on host cells, such as their detrimental result to bone tissue, which may ultimately impair bone healing. Irrigation with these solutions during debridement, therefore, may be more consequential than advantageous. To date, Microdacyn; which is a super-oxidized solution containing sodium chloride, sodium hypochlorite, and hypochlorous acid; has been proven as a safe and effective antiseptic used to irrigate wounds and biofilms, but no in vivo study has elucidated its role in fracture healing. There is a need to prove its viability for a possible role for irrigation in open fractures without compromising fracture healing. The aim of the study is to assess the outcome of Microdacyn on fracture healing in a rat model. In doing so, its use as an irrigant can be elucidated, as a solution which can be used for fracture surgery.

Methods: Thirty-five male Sprague Dawley rats' midshaft femur were histomorphometrically analyzed and compared in the percentage amount of osseous, cartilaginous, and fibrous tissues in the callus formation. The osteotomized femurs were subjected to 0.9% Plain normal saline solution (PNSS) (control group), 1% povidone iodine, and Microdacyn; then subsequently fixed with an intramedullary Kirschner wire. The rats were then euthanized at weeks 1, 2, and 5, and the calluses were analyzed histologically after harvesting the femur.

Results: The Microdacyn group showed a significantly higher percentage of osseous tissue (81.09%) compared to the 1% povidone iodine group (68.56%) at 5-weeks post-surgery ( $P = 0.028$ ). As for percentage of fibrous tissue, Microdacyn has a significantly lower percentage (16.52%), followed by PNSS (21.26%), with the highest being in the 1% povidone iodine group (28.03%) ( $P = 0.012$  for Microdacyn and  $P < 0.001$  for 1% povidone iodine, with PNSS). No statistical differences were noted between the different interventions at 1-week and 2-weeks post-surgery.

Conclusion: Microdacyn has a large potential to be used as an irrigant during fracture surgery due to its positive effect in the late stages of fracture healing.

### 19. Prevalence Of Cam-Type Femoroacetabular Impingement Among Total Hip Arthroplasty Patients and Its Association with Hip Osteoarthritis: An 11-Year Cross-Sectional Analytical Study In The Philippines (Single Institution Study)

Erika Nicole L. Chua, MD, Antonio A. Rivera, MD, FPOA  
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Introduction: Cam-type Femoroacetabular Impingement (FAI) relates to a non-spherical osseous prominence of the proximal femoral neck or head-neck junction. This bony morphologic abnormality of the hip joint may result in abnormal contact during motion and can result in impingement and abrasion of the femoral head-neck junction on the acetabular rim, hence as theorized in multiple studies, a mechanical relation between FAI and the development of osteoarthritis (OA) of the hip is possible. The prevalence rate of Cam-type FAI also varies on anatomic morphology in different population-based studies.

Objectives: The purpose of this study is:

- To determine the prevalence of Cam-type Femoroacetabular Impingement Among Total Hip Arthroplasty Patients in Filipino patients
- To determine the association between Femoroacetabular Impingement and Hip Osteoarthritis among total hip arthroplasty Filipino patients

Methods: Using a cross-sectional analytical study, we retrospectively investigated patients with the following inclusion criteria: 1. Filipino patient who underwent Total Hip Arthroplasty in Makati Medical Center (MMC) from January 2011 to March 2022. 2. With Radiograph (Pelvis AP) done in our institution using the NovaPacs viewer database. The following were the exclusion criteria: Patients with a diagnosis of hip dysplasia, inflammatory arthritis, osteonecrosis of the femoral head, previous hip surgery, and post-traumatic arthritis. Preoperative plain anteroposterior (AP) pelvis radiographs were used and  $\alpha$ -angle of 55 degrees and more was measured to determine the presence of a cam lesion.

Results: Radiological Cam-type FAI prevalence among Filipino populations who underwent Total Hip Arthroplasty was found in 27% of the population. Our results showed that among 270 patients (293 hips) who underwent total hip arthroplasty in Makati Medical Center from January 2011- March 2022, a total of 123 patients were diagnosed with primary osteoarthritis. Of these 123 patients (128 hips), 56% had a cam lesion, 69 patients (71 hips) had a cam lesion, and 56 patients (57 hips) did not have a cam lesion. Patients found to have cam lesions were also more common in male patients younger than 60 years old.

Conclusion: Patients with primary osteoarthritis may also be due to Cam-type Femoroacetabular Impingement among Filipino patients. Our study shows that Cam-type FAI suggests an association with advanced primary osteoarthritis among the Filipino population.

## 20. Total Knee Arthroplasty for A Young Patient: An Unusual Case of Ankylosing Spondyloarthritis with Gouty Arthritis

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Introduction: Total knee arthroplasty (TKA) is more commonly accepted in the elderly population, however, a gradual increase in cases of total knee arthroplasty in young patients has shown good patient satisfaction, and improved mean knee society clinical and functional scores. Among young patients (less than 50 years old) who were treated with total knee arthroplasty, pre-operative diagnosis remains to be due to: primary osteoarthritis, post-traumatic arthritis or due to severe inflammatory arthropathy. (1, 2, 7). The diagnosis of inflammatory arthropathy may include different chronic inflammatory conditions such as: rheumatoid arthritis (which is the most common and most studied), Psoriatic arthritis, Seronegative Ankylosing Spondylitis and Gouty arthritis among others. (1,3) Although the spectrum of inflammatory arthropathy is commonly grouped together, the identification of the cause of the inflammatory arthropathy will be important in the overall approach and management of a patient.

Case Report: This is a case of a 39-year-old male with a ten-year history of bilateral knee pain. The patient became sedentary due to difficulty in ambulation and knee stiffness. On physical examination, the patient is wheelchair-bound, has no knee effusion, ROM left knee: 40-70 degrees; right knee: 55-83 degrees only. Positive patellar compression test, both knees. Symmetrical chest expansion, 3 cm diaphragmatic excursion. He had negative RF and Anti-CCP, uric acid elevated at 499 IU/L, ESR elevated at 20, HLA-B27: Positive. A diagnosis of Ankylosing Spondyloarthritis with Gouty Arthritis was made. The patient underwent a bilateral TKA using a standard medial parapatellar approach and a posterior stabilized Wright system. Intraoperatively, there was severe adhesions of patellofemoral and tibiofemoral joint with synovitis and tophi on both knees. Soft tissue release was done on medial, lateral and posterior compartment. Femoral component size 4 and tibial component size 3 and 12 cm spacer for both knees was used. Postoperatively, patient was able to stand on post-op day 2. Physical rehabilitation was continued with ROM 10- 100 degrees for both knees on post-op day 7. At one-month post-op, he was able to ambulate with a cane and has a ROM of 5-110 degrees on the left and 10-110 degrees on the right with very good patient satisfaction and a Knee Society score of 85/100 from 40/100.

Conclusion: Young patients with severe contracture and functional limitation and an unusual cause of combined Ankylosing Spondyloarthritis and Gouty inflammatory arthritis may still expect good outcomes with improved patient quality of life after total knee arthroplasty.

## 21. Epidemiology Of Orthopaedic Fractures During The COVID-19 Pandemic In the Military Setting: A Cross Sectional Study

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Background: Pre-pandemic data (2017-2020) reveal that the Department of Orthopaedics in a military tertiary hospital has handled over 700 cases of traumatic injuries per year with motor vehicular accidents (MVA) as the leading cause, especially among male enlisted personnel. Due to COVID-19, movement of population has greatly changed, affecting the overall healthcare system. Pre-pandemic studies claim that male, aged 25 to 60 years, are most commonly injured with hand or wrist involvement due to MVA. During the pandemic, a number of literatures worldwide noted decrease incidence of fracture related to MVA and outdoor activities, with majority of cases attributable to domestic and home accidents. Limited studies are available involving injuries sustained during the pandemic in the Philippines.

Objective: The aim of the study is to determine the demographics of trauma patients, and evaluate the fracture types, sites, laterality, incidence, and mechanism of injury among patients seen in this military tertiary hospital during the pandemic as opposed to the pre-pandemic period, and to know if the pandemic will affect the mechanism of injury in the military setting. Methodology: A cross-sectional study was used to compare the data pre-pandemic (March 2017 to February 2020) to the data of the first year of pandemic (March 2020 to February 2021). Data were extracted from the Summary of Duty of the Orthopaedics Department composed of age, sex, rank, laterality, diagnosis, and mechanism of injury.

Results: A total of 1,774 patients were reviewed. Contrary to existing literatures, this study exhibited forearm and leg as the leading sites of injuries during pre-pandemic and pandemic period, respectively. Males, 21 to 30 years of age, and enlisted personnel were most commonly affected, often as a consequence of MVA throughout the study period.

Conclusion: Significant reduction (~56%) of cases was observed at this institution due to the lockdown and strict protocols. Despite the decrease in mobility and outdoor activities in the country, MVA was noted to be the predominant mechanism of injury due to the incessant operation of uniformed men as front liners during the pandemic. Prevalent factors during the first year of pandemic were males, aged 21 to 30, with closed fracture occurring in the leg, with left laterality, dominated by enlisted personnel. Having anticipated which cases would be encountered during pandemic may aid for better preparation and management on the part of the surgeons.

## 22. Three-Year Retrospective Analysis of Mortality and Mobility Status in Operatively Versus Non-Operatively Managed Extracapsular Hip Fractures in The Elderly

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**Objectives.** An estimated 90% of intertrochanteric fractures occur in patients aged 65 and above, and these constitute 7% of all osteoporotic fractures. Studies regarding outcomes after conservative versus operative treatment of these fractures have conflicting results, with some reporting higher mortality rates for conservatively managed fractures, and other studies not identifying any significant difference in terms of mortality rate between operatively and nonoperatively managed patients.

**Methods.** Patients aged 60 and above admitted in the Philippine Orthopedic Center from 2016-2018 with a diagnosis of a low-energy extracapsular hip fracture were included. Hospital records of patients were reviewed, and demographic data, length of hospital stay, co-morbid status, and type of management (conservative vs operative) were recorded. Patients were contacted, chart data were verified, and information about the patient's status and New Mobility Score (NMS) were gathered.

**Results.** 86 participants were included in this study. 4 patients (4.7%) died, all from the non-operative group. The overall grand median NMS for all patients is 7. The median NMS for non-operatively managed patients is 3. Those operatively managed have higher median scores (NMS of 9 and 7 for those undergoing closed and open operative reduction, respectively). There is a significant difference between NMS among the those conservatively and operatively managed (Kruskal-Wallis = 46.121,  $p < 0.001$ ). Using binomial regression, there was no association between mortality status and PMS, sex, age, comorbidity status, smoker status, type of operation, and hospital length of stay (all  $p > 0.05$ ).

**Conclusion.** While there was no significant difference between the mortality rates of those patients who underwent conservative versus operative intervention, it is still prudent to manage these patients surgically given this study's evidence on overall functionality of surgically managed patients as reflected by the NMS.

## 23. The Efficacy of Epidural Ropivacaine Plus Morphine as Post- Operative Analgesia in Major Lumbar Spine Surgery: A Randomized Prospective Double-Blind Study

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**Background:** Post-operative pain control includes oral or intravenous analgesics with different combination. However due to its side effects many adjuvants in pain control were studied. Epidural anesthesia and analgesia have been superior to intravenous analgesia with respect to pain quality and incidence of side effects. This study is a modification on previous studies by placing the analgesic as bolus with direct visualization and not using an epidural catheter. Pain control was then observed post operatively after weaning from general anesthesia using

Ropivacaine plus normal saline as the control and compared to its efficacy of analgesic control with Ropivacaineplus Morphine as the experimental group.

**Methods:** This is a randomized prospective double-blind study.

**Results:** With a total of 18 patients (9 control and 9 experimental) there was noted to have significant difference between the 2 groups. The experimental group that received ropivacaine + morphine has a better pain control post op as there is decrease rescue medication given and it was noted to be at 18th hour post op. In comparison with the control group (Ropivacaine + normal saline), all 9 patients received the rescue medication with a mean post op time of 2 hours and some have 2 rescue medications in 24 hours.

**Conclusion:** Epidural route using Ropivacaine and morphine as a bolus with no epidural catheter is a safe alternative. It shows good pain control and efficacy with no reported adverse effects.

**Keywords:** Epidural Anesthesia, Post-operative Analgesia, Lumbar Spine Surgery, Ropivacaine and Morphine

## 24. Inter-prosthetic joint motion in bipolar partial hip arthroplasty after 1 year follow-up

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**Introduction:** Partial hip arthroplasty is the treatment of choice for completely displaced femoral neck fractures and special cases of intertrochanteric fractures in the elderly. Unipolar prosthesis is the early design for partial hip arthroplasty. However, as the lifespan of patients became longer as well as the implants placed, complications arose such as hip pain secondary to acetabular wear. This led to the development of bipolar prosthesis which is believed to decrease acetabular erosion and protrusion. There have been reports that bipolar prosthesis eventually behaves like unipolar prosthesis, with the loss of motion at either the inner or outer articulation after some time. With this study, we will be able to assess if the inter-prosthetic joint in bipolar partial hip arthroplasty will remain mobile after 1-year post-operative based on pelvic radiographs.

**Materials and Methods:** This is a cross-sectional study which will monitor the differences in the inter-prosthetic joint motion in patients who underwent bipolar partial hip arthroplasty in a tertiary hospital from 2019- 2021. Immediate and at least 1-year post-operative radiographic images will be compared based on measurements needed. Measurements are done in hip antero-posterior (AP) radiographic views in neutral, maximum hip abduction and maximum hip adduction as tolerated. Pelvic-head angles and pelvic-shaft angles were measured in these views. The difference in these angles between hip AP and abduction views, and hip AP and adduction views were computed as the 1st and 2nd interprosthetic joint motion, respectively. The sum of these 2 motions is the total interprosthetic joint motion.

**Results:** Based on previous studies, a significant inter-prosthetic joint motion must be at least 25% or more to be able to function as a bipolar prosthesis. Only 12 out of 48 patients were included in the study based on the inclusion criteria. 9 of these showed that there is still >25%



total interprosthetic joint motion in bipolar prosthesis even after 1-year post-operative. 6 patients showed that there is >25% inter-prosthetic joint motion based on hip AP and abduction radiographs. 7 patients showed that there is >25% inter-prosthetic joint motion based on hip AP and adduction radiographs.

Conclusion: Bipolar prosthesis still has mobile inter-prosthetic joint even after at least 1-year post-operative based on pelvic radiographs. Additional hip adduction radiographs can give additional information in the computation for the total inter-prosthetic joint motion in bipolar prosthesis.

## 25. Risk Factors for Development of Atypical Femoral Fractures in Patients on Long-Term Oral Bisphosphonate Therapy

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Background: Bisphosphonates (BP) are highly effective in treating osteoporosis post-menopausal women and reducing fractures. However, atypical femoral fractures (AFFs) emerged as a rare event associated with increased duration of BP exposure.

Purpose: To evaluate clinical and metabolic characteristics in patients with AFFs, in order to determine risk factors associated.

Methods: We retrospectively reviewed the medical records and radiographs of twenty-five caucasian women, 50 years old of age or older, admitted to the emergency of Orthopedic Department for surgical repair between 2017 and 2021. All the women were under BPs therapy prior to the fracture events and suffered a femoral shaft fracture. Of those, eleven were classified as AFF according to the American Society for Bone and Mineral Research criteria and fourteen were classified as typical femoral fractures (TFF). Duration of BPs intake, metabolic factors, comorbid conditions and concomitant therapies were compared.

Results: AFF patients received BPs therapy for a higher period than TFF ( $p < 0.05$ ). Early menopausal age and hypothyroidism with levotiroxin intake were more prevalent in AFF patients ( $p < 0.05$ ). At the time of the fracture a higher prevalence of hypocalcemia and reduced prevalence of elevated PTH levels were observed in AFF patients, although not statistically significant. Other risk factors as age, race, body mass index, pulmonary or collagen diseases, glucocorticoid or pump proton inhibitors use or D vitamin levels did not differ significantly in both groups.

Conclusion: Our data indicate that patients treated with BP with early menopausal age and with hypothyroidism with levotiroxin intake are at higher AFF risk. In these patients we should monitor or be alert for signs of incomplete AFFs to consider prophylactic surgery.

## 26. There Is an Association Between Varus Proximal Femoral Geometry and Atypical Femoral Fractures in Postmenopausal Women Under Chronic Bisphosphonate Treatment?

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Background: Bisphosphonates (BPs) are the first-line treatment of osteoporosis post-menopausal women. There is increasing evidence associating atypical femoral fractures (AFFs) with prolonged exposure to BPs therapy. The cause of these fractures is unknown and likely multifactorial.

Purpose: To evaluate the hypothesis that patients with AFFs under prolonged BPs therapy were associated to a varus proximal femoral geometry.

Methods: We retrospectively studied osteoporotic women, aged 50 or older, who were under BPs therapy. Women under BP treatment with AFF (group A) were compared with women under BP treatment without fractures on the inferior limb (group B). The femoral neck-shaft angle was measured on the radiographs of both groups.

Results: A total of twenty-three osteoporotic menopausal women under BPs therapy were included: eleven in group A and twelve in group B. The mean neck-shaft angle of the women in group A differed significantly from group B ( $p < 0.05$ ). Side-to-side comparison in patients with a unilateral pathologic involvement and an asymptomatic contralateral lower limb did not demonstrate any significant difference between the neck-shaft angles in the two limbs.

Conclusion: Patients on chronic bisphosphonate therapy who presented with AFF had more varus proximal femoral geometry than those who took bisphosphonates without sustaining a lower limb fracture. Varus proximal femoral geometry may help to better identify patients at risk for fracture after long-term bisphosphonate use.

### 1. Post-Intramedullary Nailing Osteomyelitis among Closed Femoral Shaft Patients from 2015 to 2020

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Femoral shaft fractures are high-energy injuries usually due to road traffic accidents and treated with intramedullary nailing with osteomyelitis after intramedullary nailing in closed femoral fractures being a dreaded complication. This descriptive study utilized a cross-sectional case-series to determine the demographic, clinical, and bacteriologic profile, and the incidence of osteomyelitis in closed femoral shaft fracture patients from January 1, 2015, to December 31, 2020. Out of 581 cases who underwent intramedullary nailing for a closed femoral fracture, 20 patients developed osteomyelitis (3.4%). Results show that males aged 18 – 25 years with right middle third femoral fracture caused by motor vehicular accident comprised the majority of cases. Preoperative Cefazolin and postoperative Cefuroxime were given with an average of 4-6 weeks operative delay after injury. Open reduction and intramedullary (IM) nailing using either a locked nail or a Kuntscher nail was used averaging 3-4 hours to complete by orthopedic resident surgeons. All patients received at least 2 units of packed RBCs with average of 800 ml blood loss. All the patients were healthy with a normal immune system, and all cases had localized osteomyelitis with no systemic signs of infection. The patients with osteomyelitis were readmitted 1–2-years for debridement, sequestrectomy, saucerization, and application of antibiotic beads. Exchange nailing was done in 4 patients, and one fracture was re-fixed with distal compression screw. Isolates were gram positive, with *Staphylococcus aureus* being the most prevalent. Bony union was seen in 15 patients within 6 months while 5 patients were lost to follow-up. The infection rate of 3.4% after intramedullary femoral nailing in this tertiary hospital is higher than established infection rates after nailing of closed femoral fractures in developed countries. The delayed surgery, blood loss and blood transfusions are factors that have contributed in the development of osteomyelitis in these immunologically healthy patients.

*Keywords: Closed femoral shaft fracture; Descriptive, cross-sectional case-series; Intramedullary nailing patients; and Osteomyelitis.*

### 2. Computed Tomographic Measurements of Thoracic Pedicle in Filipino Patients

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Background: Knowledge of the morphometric measurements of Filipino thoracic spine pedicles would help the surgeons in determining the proper size and increase accuracy of pedicle screws placement during surgery to avoid complications.

Objective: This study aims to measure the outer diameter, chord length and transverse angulation of the thoracic spine pedicles (T1-T12).

Methods: A retrospective analysis of patients ages 18-85 years who underwent CT scan of the thoracic spine from January to December 2019. A total of 65 patients were included in the study. Pedicle morphology was measured with the following parameters: transverse outer pedicle diameter, pedicle chord length, and transverse pedicle angle.

Results: TOPD was narrowest at the level of T4 ( $4.2 \pm 1.0\text{mm}$ ) followed by T5 ( $4.6 \pm 1.0\text{mm}$ ) and the largest TOPD at the level of T12 ( $8.7 \pm 2.1\text{mm}$ ). The largest PCL was at the level T12 ( $47.7 \pm 4.6\text{mm}$ ) and the shortest was at T2 ( $35.6 \pm 3.7\text{mm}$ ). The mean TPA largest at the level of T1 ( $35.8 \pm 6.1\text{mm}$ ) and progressively decreasing and slight increase at the level of T12 ( $6.3 \pm 3.5\text{mm}$ ). Men have larger pedicles as compared with women.

Conclusion: It is recommended to use 4.5mm pedicle screw however it should be used with extra caution especially at mid thoracic level and among female patients.

*Keywords: Thoracic Pedicle, Pedicle Morphology, Pedicle Diameter, Pedicle Length, Pedicle Angle, Pedicle Screw*

### 3. Radiographic Coronal Thin Point as a Predictor of Shortening of Stable Ptertrochanteric Fractures Treated with Proximal Femoral Nailing

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Background: Comprehensive assessment of the distal radius always includes the standard AIM: To determine if radiographic coronal thin point can predict shortening among patients aged <85 years old with stable ptertrochanteric fracture.

MATERIALS AND METHODS: A cross-sectional design was used involving 56 patients with stable ptertrochanteric (SP) fractures managed by proximal femoral nailing (n=56). A PACS PLUS application was used to measure lateral wall thickness (LWT), coronal thin point (CTP), and lag screw, based on x-rays taken pre-operative, post-operative and six months post-operative imaging of SP fractures were analyzed for those fractures with shortening of  $\geq 15$  mm post-fixation.

RESULTS: A lag screw length of  $\geq 15$  mm was prevalent in 23.2% after six months postoperative, only two patients (3.6%) showed significant lag screw shortening  $\geq 15$  mm when compared to immediate post-operative measurement.

Results revealed that mean LWT ( $p=.8964$ ) and mean CTP point ( $=0.679$ ) among patients with significant shortening are the same in those patients without a significant shortening.

Using the Youden index suggests that the best cut-off score of CTP in predicting significant shortening is  $\leq 4$  mm. Using the best cut-off score of  $\leq 4$  mm showed that it is a significant predictor of shortening. It has a high sensitivity of 100% (95% CI 15.81 to 100), high specificity of 92.59 (95% CI 82.11 to 97.45), high AUC .96 (95% CI .88 to .995), and high diagnostic accuracy 92.86 ((95% CI 82.71 to 98.02). Radiographic CTP is a reliable predictor of shortening.

CONCLUSION: A CTP value of  $\leq 4\text{mm}$  measured on injury film of patients with ptertrochanteric fractures is at risk of significant shortening of  $\geq 15$  mm six months after PFN surgery.

Instability of fracture site is prevalent among those that shortened  $\geq 15$  mm six months after surgery, demonstrated by a higher lag screw measurement than non-significant shortening

<15 mm. It implies that CTP contributes to the instability of stable petrochanteric fractures, affecting fixation.

#### 4. **Computed Tomography – Based Morphometric Analysis of The Subaxial Cervical Spine Pedicles in a Filipino Population**

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**Background:** The use of transpedicular screw fixation has been seen as particularly effective in treating subaxial cervical spine (C3-C7) instability. However, despite its biomechanical superiority, its acceptance among surgeons is limited. Perceived as technically demanding because of the complex anatomy of the subaxial cervical spine and its inherently narrow pedicles allowing for a very limited space during transpedicular screw insertion; the proximity of vulnerable neural and vascular structures also lead to an increased risk of complications from pedicle violation. Characterizing the morphology of the pedicles not only enables accurate identification of the screw axis but also aids to avoid neurovascular complications, as a quantitative three-dimensional understanding of the morphology of these pedicles can assist the surgeon in making informed decisions whenever transpedicular screw fixation of the subaxial cervical spine is being considered.

**Objective:** The objective of this study was to perform a morphometry of the subaxial cervical spine pedicles in a Filipino population. Measurements of the linear dimensions and angular projections of each pedicle were acquired, then analyzed to explore the level-, side-, and sex-specific morphologic trends and differences in the study population. These measurements were intended to contribute to the better understanding of the Filipino subaxial cervical spine pedicles in the application of surgical methods such as transpedicular screw fixation.

**Methods:** This is a retrospective review of cervical computed tomography (CT) scans showing normal cervical vertebrae of Filipino patients 18 years of age and above. The following subaxial cervical spine pedicle parameters were measured; linear parameters: outer pedicle width (OPW), inner pedicle width (IPW), outer pedicle height (OPH), inner pedicle height (IPH), pedicle length (PL), pedicle axis length (PAL); angular projections: pedicle transverse angle (PTA), and pedicle sagittal angle (PSA). The mean and standard deviations for each parameter were calculated. The t test was used to determine if there were any significant differences ( $p < 0.05$ ) in the pedicle morphologic parameters according to side and sex.

**Results:** A total of 1,470 pedicles were measured from 735 subaxial cervical vertebrae in 147 subjects. For all the linear parameters measured, a gradual increase was noted from C3 to C7; for the angular projections, the PTA variations from C3 to C7 demonstrated that they were wider in the upper subaxial cervical spine, C3 to C5, and narrower in the lower cervical region at C6 and C7. The PSA demonstrated a gradual change from upward inclination at the upper subaxial cervical spine, C3 to C5, to the downward inclination at the lower cervical region, C6 and C7. The respective differences between the left and right sides were not statistically significant ( $p > 0.05$ ), except for: a. IPW at C4 ( $p = 0.008$ ) and C7 ( $p = 0.047$ ); b. PAL at C6 ( $p = 0.014$ ) and PSA at C5 ( $p = 0.031$ ). For the linear parameters measured, male subaxial cervical spine pedicles were significantly larger than females ( $p < 0.05$ ) except for PL at C7 ( $p = 0.0786$ ). The differences in the PTA for sex were not statistically significant ( $p > 0.05$ ) except for C4 ( $p =$

$0.001$ ); the PSA in males were significantly different ( $p < 0.05$ ) than females except for C3 ( $p = 0.922$ ) and C7 ( $p = 0.763$ ).

**Conclusion:** A thorough understanding of the morphology of the subaxial cervical spine pedicles is the key to safe and successful transpedicular screw fixation. Hence, the importance of pre-operative planning with the use of CT and conventional radiography in conjunction with morphometric data cannot be overemphasized. Our data demonstrated that pedicle morphology is, and therefore screw placement and orientation is significantly different at each subaxial cervical spinal level and between men and women. It is therefore necessary to account for these differences during surgical planning to reduce the risks of pedicle perforation and neurovascular injury.

*Keywords:* subaxial cervical spine, pedicle, morphometry, transpedicular screw fixation, computed tomography

#### 5. **Effectiveness of Intra-Articular Tranexamic Acid Versus Intravenous Tranexamic Acid in Reducing Blood Loss for Total Knee Replacement: A Randomized Control Trial**

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**Introduction:** Intra-articular TXA administration during TKR has only began to gain popularity in recent years. The drug may be given as an intra-articular wash or into the joint after wound closure with a drain. Advocates of intra-articular Tranexamic acid believes in the advantages of it which includes easy administration, and the achievement of maximum concentration at the bleeding site with minimal systemic absorption as compared to IV administration.

**Objective:** To determine the effectiveness of intra-articular administration of Tranexamic acid in TKR patients compared with Intravenous Tranexamic Acid

**Methods:** A Randomized Control Trial Open Label Non-inferiority Study Design was utilized to describe the outcomes of patients who were subjected to Intra-articular and Intravenous TXA during surgery. Total sample size was computed at 20. The primary outcome was the decrease in blood loss after administration of Intra-articular Tranexamic Acid as compared with Intravenous Tranexamic Acid intra-operatively and post-operatively. The secondary outcome was the decrease or absence of complications, pain, cost effectiveness and improvement of function.

**Results:** There was lesser amount of blood noted in the suction bottle and weight of operative sponges in the IA-TXA group than the IV-TXA group. The estimated blood loss at 48th hour was 673.5mL in the experimental group and 634.7 mL in the control group, no blood transfusion was performed in either group and post-operative Hgb level at the 48th hour post-operative period was 113.3 mL in the experimental group and 115.7 mL in the control group was not clinically significant confirming the noninferiority for the efficacy. Complication rates and Functional outcome have no significant difference suggesting equivalence.

**Conclusion:** Intra-articular administration of TXA demonstrated non-inferiority compared with intravenous TXA, with no safety concerns. This randomized controlled trial supports the intra-articular administration of TXA in primary total knee replacement with cemented implants.

*Keywords:* Total Knee Replacement, Tranexamic Acid, Blood Loss, Intra-articular, Transfusion

#### 6. A Comparative Study of Proximal Femoral Nail Antirotation in Peri-Trochanteric Fractures in Lateral Decubitus and Supine Position.

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**Introduction:** One of the most widely used cephalomedullary device for unstable peri-trochanteric fractures is the Proximal Femoral Nail Antirotation (PFNa). There are many factors that can attribute to the ease of reduction and one of these is the positioning technique. The objectives of this study are to determine which position in doing the PFNa offers more advantage than the other, to compare the quality of fixation, adequacy of reduction, bony union and functional outcome in PFNa done in the lateral decubitus and supine position.

**Materials & Method:** This study is an open cohort study conducted at the Philippine Orthopedic Center. Adult male and female (21-65 y/o) patients who will have to undergo or already undergone open reduction PFNa either in the supine or lateral position were included in this study. Thirty-nine (39) patients were recruited where 6 were lost to follow-up and 4 had no post-operative radiographs uploaded on the picture archiving and communication system (PACS). A total of twenty-nine (29) patients completed the study. The data were analyzed using the T-test in two population means and Fisher's Exact Test.

**Results:** At 95% level of confidence, the study showed that there are no significant differences on the distribution of Tip-Apex Distance (TAD), adequacy of reduction and bony union at 6 months post-operatively between the lateral and supine position. In contrast, there is a significant difference on the distribution of Cleveland index score of the patients treated using lateral and supine position (p-value 0.0084). With regards to the Harris Hip Score (HHS), there is also a significant difference on the average score between the two groups but all had an excellent functional outcome (p-value 0.0001).

**Conclusion:** The preferred surgical position of doing an open reduction PFNa remains controversial. This study shows that the surgical position did not significantly affect the TAD, adequacy of the reduction, and bony union. All patients from both groups had excellent functional outcome at 6 months post-operatively but the lateral position group was superior in terms of the Cleveland index. Surgery with PFNa in lateral decubitus position can be performed in small rural hospitals that lack a fracture table. With proper surgical technique with PFNA in lateral decubitus position, this may be safe, executable and can benefit more patients with peri-trochanteric fractures.

**Keywords:** *Peri-trochanteric fractures, subtrochanteric fractures, cephalomedullary nail*

#### 7. Effect of Microdacyn on fracture healing on Sprague Dawley rats using histomorphometric study

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**Background:** Open fractures are difficult to treat once a component of infection has become part of the picture, wherein debridement and antibiotics have been the standard of care for eradication of the microorganisms. There are various antiseptic solutions available but several studies have showed their pernicious effects on host cells, such as their detrimental result to bone tissue, which may ultimately impair bone healing. Irrigation with these solutions during debridement, therefore, may be more consequential than advantageous. To date, Microdacyn; which is a super-oxidized solution containing sodium chloride, sodium hypochlorite, and hypochlorous acid; has been proven as a safe and effective antiseptic used to irrigate wounds and biofilms, but no in vivo study has elucidated its role in fracture healing. There is a need to prove its viability for a possible role for irrigation in open fractures without compromising fracture healing. The aim of the study is to assess the outcome of Microdacyn on fracture healing in a rat model. In doing so, its use as an irrigant can be elucidated, as a solution which can be used for fracture surgery.

**Methods:** Thirty-five male Sprague Dawley rats' midshaft femur were histomorphometrically analyzed and compared in the percentage amount of osseous, cartilaginous, and fibrous tissues in the callus formation. The osteotomized femurs were subjected to 0.9% Plain normal saline solution (PNSS) (control group), 1% povidone iodine, and Microdacyn; then subsequently fixed with an intramedullary Kirschner wire. The rats were then euthanized at weeks 1, 2, and 5, and the calluses were analyzed histologically after harvesting the femur.

**Results:** The Microdacyn group showed a significantly higher percentage of osseous tissue (81.09%) compared to the 1% povidone iodine group (68.56%) at 5-weeks post-surgery ( $P = 0.028$ ). As for percentage of fibrous tissue, Microdacyn has a significantly lower percentage (16.52%), followed by PNSS (21.26%), with the highest being in the 1% povidone iodine group (28.03%) ( $P = 0.012$  for Microdacyn and  $P < 0.001$  for 1% povidone iodine, with PNSS). No statistical differences were noted between the different interventions at 1-week and 2-weeks post-surgery.

**Conclusion:** Microdacyn has a large potential to be used as an irrigant during fracture surgery due to its positive effect in the late stages of fracture healing.

**8. A Comparative Study of Peripheral Nerve Block (PNB Versus Wide Awake Local Anesthesia No Tourniquet (WALANT) In Patients with Hand and Wrist Fracture Requiring Bony Fixation: Clinical Outcome and Patients Satisfaction**

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**Background:** Cost-effective, practical and non-aerosol generating procedures are preferred in the operating room including upper extremity bone fixation surgeries. Wide Awake Local Anesthesia No Tourniquet (WALANT) and Peripheral Nerve Block (PNB) are alternative anesthetic techniques used instead of General Anesthesia. This study will compare WALANT and PNB in patients with hand and wrist fractures requiring bony fixation **Objectives:** To determine if WALANT is superior to PNB in terms of the following outcomes: (1) post-operative pain, (2) length of stay in the Post-Anesthesia Care Unit, (3) days of hospitalization, (4) patient satisfaction, and (5) complications.

**Methodology:** A randomized controlled trial design is utilized to compare WALANT and PNB in patients with hand and wrist fractures requiring bony fixation at a military hospital. Collected data analyzed include the patients' clinical and demographic profile, and the main clinical outcomes of post-operative pain, length of stay, days of hospitalization, patient satisfaction, and presence of complications.

**Results:** The study was able to get results from 20 patients, who were equally randomized to the PNB and WALANT methods. For the clinical characteristics, it was noted that besides the length of hospital stay (which did not show any statistically significant difference), all the other parameters including the PACU time and all the postoperative VAS scores showed significant differences when compared between the two anesthetic techniques. Majority from WALANT group had shorter PACU time. VAS scores in the WLANT group taken at 8 hours, 24 hours and 48 hours post operatively showed lower scores compared to PNB. All the clinical parameters of those randomized to the PNB group were significantly higher as compared to those in the WALANT group. From the parameters mentioned in the SF-12 Health Survey, it clearly indicated that the anesthetic techniques resulted in good patient satisfaction outcomes. However, in the comparison of PNB and WALANT, the latter indicated the better outcomes as compared to the former. WALANT produced better answers from its patients in all the dimensions asked by the SF-12. Both anesthetic technique had one conversion to General anesthesia.

**Conclusion:** WALANT provides less post-operative pain, lesser length of PACU stay, and delivering better patient satisfaction, as measured by the data generated from the study population compared to PNB. There were no differences in terms of hospital stay and complications between the two techniques.

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*<sup>1</sup>Orthopedic Department and <sup>2</sup>Rheumatology Department, Centro Hospitalar do Baixo Vouga Centro, Aveiro – Portugal.*
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*Department of Orthopaedics, University of Santo Tomas Hospital*

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*Department of Orthopaedics, University of Santo Tomas Hospital*
  
92. Quality of Reduction of Closed Reduction Internal Fixation (CRIF) and Open Reduction Internal Fixation (ORIF) using Smith-Petersen Approach for Displaced Femoral Neck Fractures in Adults: A Retrospective Cohort Analysis  
*Katherine Marie J. de Asis-Gonzalez, MD, Angeli Charmeinn P. Apalisoc, MD, FPOA*  
*Philippine Orthopedic Center*



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