



**PHILIPPINE ORTHOPAEDIC ASSOCIATION, INC.**  
**61ST ANNUAL CONGRESS**  
November 17-20, 2010  
EDSA Shangri-la Hotel, Mandaluyong City, Philippines

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## **SOUVENIR PROGRAM**

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**Geriatric Orthopaedics:  
Best Evidence for  
Better Care**



*Devotion to Orthopedics.*

*Our driving principle - Patient First.*



**Sinawal Medical Supplies**

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President, Republic of the Philippines  
Secretary, Department of Health  
President, Philippine Medical Association  
President, Philippine College of Surgeons  
Mayor, Mandaluyong City  
Vice President & Overall Chairman of the  
Organizing Committee  
President, Philippine Orthopaedic  
Association

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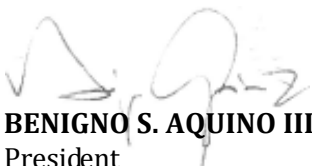
My warmest greetings to the men and women of the Philippine Orthopaedic Association, Inc. as you hold your 61<sup>st</sup> Annual Congress. With this gathering, which focuses on Geriatric Orthopaedic Patient Care, you further cement your places of honor in our movement for change.

The role of orthopedic doctors has always been vital in the promotion of quality healthcare services in the Philippines. You are among the best in the world – a distinction awarded to you by your peers, as well as by the high regard your patients and their families have for you.

I commend the dedication to the advancement of orthopedic research, and the raising of standards of service. I am glad to be your comrade-in-arms in our fight to improve the health sector, and to consequently increase our workforce's productivity and reduce poverty. Together, we all tread the straight and righteous path towards change – towards social justice and poverty alleviation through good governance. Together, we shall rebuild this nation.

Your congress reminds us that we are not alone. The Filipino people stand in solidarity beneath the banner of change and reform. As one, we are able to hope again. Let us continue doing our part in this journey of transformation.



  
**BENIGNO S. AQUINO III**  
President  
REPUBLIC OF THE PHILIPPINES




My felicitations to the officers and members of the Philippine Orthopaedic Association on the occasion of their 61<sup>st</sup> Annual Congress with the Theme, "Best Practices in Geriatric Orthopaedics".

This event highlights the best experiences and practices in geriatric orthopedics in the country today. It is essential in further enhancing capabilities of its participants in responding to the orthopedic needs of the elderly. This is consistent with the Department's thrust of providing quality health care to those who need it most.

May we remain steadfast in your mission and vision and continue to offer opportunities for further cooperation and exchange of healthy experiences among your members.

Congratulations.

  
**ENRIQUE T. ONA, MD, FPCS, FACS**  
SECRETARY OF HEALTH

It is with great pride and honor for me to convey warm greetings and felicitations to the Philippine Orthopaedic Association, Inc. on its 61<sup>st</sup> Annual Congress on November 17-20, 2010 at the EDSA Shangri-la Hotel in Mandaluyong City.



This year's theme "best practices in Geriatric Orthopaedics" conveys the need to pursue and emphasize on the training of the best and most ideal management options in a growing segment of our society who may play a pivotal role in humankind in the next millennia, our senior citizens or elderly. By 2025, 25-30 % of the population of the population would be from the 65 years old and above. With this development, other countries around the globe have already initiated plans to cater to this growing segment of population, and we must continue and sustain all efforts to keep pace not only with the advances in medical science and technology but with the challenges brought about by an emerging global environment.

This endeavor redounds to better health outcomes in the management of geriatric orthopedic cases, and other disease conditions for that matter, and I commend you for that.

I am confident therefore that this collegial exchange of ideas of ideas and expertise will make this auspicious gathering fruitful and memorable to one and all.

On behalf of the National Officers and Board of Governors of the Philippine Medical Association, I congratulate the delegates and organizers of this year's meeting.

Maraming salamat po and Mabuhay!

**DR. OSCAR D. TINIO**

President

PHILIPPINE MEDICAL ASSOCIATION



Greetings!

On behalf of the Philippine College of Surgeons Board of Regents, please allow me to extend my warmest congratulations to the Philippine Orthopaedic Association on the occasion of your 61<sup>st</sup> Annual Congress on November 17-20, 2010 at the EDSA Shangri-la Hotel. Indeed your theme, "Best Practices in Geriatric Orthopedics" is very relevant to one of the most common problems afflicting the senior members of our population – that of degenerative joint problems, osteoporosis and fractures.

I would also like to take this opportunity to congratulate your organization's new set of officers, new Fellows as well new set of trustees of the POA Foundation. It is inevitable that a dynamic organization like POA will continue to evolve to answer the call of the ever changing times.

More power to you and God bless.

**STEPHEN SIXTO SIGUAN, MD, FPCS**

President

PHILIPPINE COLLEGE OF SURGEONS

Congratulations to the officers and members of the Philippine Orthopaedic Association, Inc. on the occasion of their 61st Annual Congress!

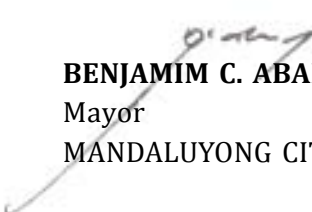


I am very confident that this occasion is going to be another major feat of your organization. I am particularly grateful to your group for continuously adhering to your mission as dedicated medical practitioners. Your efforts to produce better results and your devotion to improve your services through better programs and practices are generally a manifestation of your unfading commitment to be of service to the Filipino People.

As a surgical specialty society, your unrelenting pursuit for knowledge using appropriate techniques that are both legal and consistent with the current medical setup gives us a better chance to improve and further promote medical tourism in the country. Learning the Best Practices in Geriatric Orthopaedics not only provides us with the latest technology and know-how in the field but also enhances a medical institution's emergency management and preparedness plans, which will rebound directly to the benefit of our people. These are the kind of initiatives that we need to fine tune medical programs that are already in place and eventually be recognized worldwide for our accomplishments.

Ultimately, I congratulate you all for your hard work and determination to better improve our services to and for the Filipino people. I look forward to more endeavors like this spearheaded by your society.


Kudos to all and Mabuhay!

  
**BENJAMIN C. ABALOS**  
Mayor  
MANDALUYONG CITY

The POA Scientific Committee has worked hard the past 10 months to give you a program which I am sure will interest you. Evidence based medicine (EBM) is said to have revolutionized medical care in the past 100 years and have advanced scientific care to medical conditions. Our theme of Geriatrics is also an upcoming epidemic as borne out by the emerging burden of hip fractures in the elderly group. We co-celebrate Bone and Joint Decade (BJD) and face the burden of osteoporotic fractures. Thus our society is in a unique position to impact on these orthopedic conditions. Thus it is with great expectations that our meeting this year will merge these two topics. EBM meets Geriatrics and hope this meeting will stimulate discussion on these issues. Our local and foreign faculty will see to it that it's done.



Hoping for a successful 61st Congress. MABUHAY!

  
**ALBERT U. DY, MD, FPOA**  
Vice President &  
Overall Chairman, Organizing Committee  
PHILIPPINE ORTHOPAEDIC ASSOCIATION

Warmest greetings and welcome to the Philippine Orthopaedic Association's 61st Annual Congress. The theme for this year's meeting, "Geriatric Orthopedics: Best Evidence for Better Care", gives emphasis to care and compassion for the much regarded and yet unobserved elderly population.



The growing number of older adults increases demands on the public health system and on medical and social services. Increased life expectancy reflects, in part, the success of public health interventions, but public health programs must now respond to the challenges created by this achievement, including the growing burden of chronic illnesses, injuries, and disabilities and increasing concerns about future caregiving and health-care costs. The demographic transition will alter dependency ratio and impose a double burden in developing countries where infectious diseases and maternal as well infant mortality rates are lingering public health issues. The Philippine Orthopaedic Association as early as 2004, in collaboration with other professional organizations, has initiated efforts in studies related to the burden of common orthopedic conditions in the elderly. Aging is gradual and its consequences tend to appear slowly and predictably. Thus, policy makers have time to deal with these issues before they become acute problems. The theme for this year's meeting is just timely and relevant.

The Organizing Committee has invited an interesting group of prominent speakers from different places, who will talk on currently fascinating topics and share their wealth of experience. The scientific sessions were designed not only to inform but also to inspire and persuade. May this wonderful meeting bring forth new friendship and build closer ties not only in the ASEAN region but all over the world.

I would like to wish everybody a fruitful and enjoyable meeting. And once again, to all our distinguished guests, fellows and sponsors, Welcome and .....MABUHAY!

*Lauro Bonifacio*

**LAURO R. BONIFACIO, MD, FPOA**

President

PHILIPPINE ORTHOPAEDIC ASSOCIATION

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Republic of the Philippines  
Department of Health  
**OFFICE OF THE SECRETARY**

22 June 2010

**DEPARTMENT CIRCULAR**  
No. 2010 - 0188

**TO: ALL UNDERSECRETARIES, ASSISTANT SECRETARIES;  
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TREATMENT AND REHABILITATION CENTERS, LOCAL  
WATER UTILITIES ADMINISTRATION AND OTHERS  
CONCERNED**

**SUBJECT: 61<sup>st</sup> Annual Congress of the Philippine Orthopaedic Association,  
Inc. on 17-20 November 2010 at the EDSA Shangri-la Hotel,  
Mandaluyong City.**

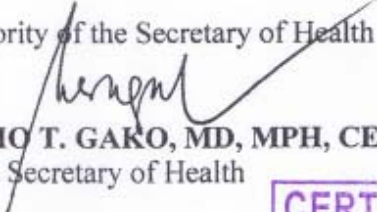
The Philippine Orthopaedic Association, Inc. will hold its 61<sup>st</sup> Annual Congress on 17-20 November 2010 at the EDSA Shangri-la Hotel, Mandaluyong City with the theme "Best Practices in Geriatric Orthopaedics".

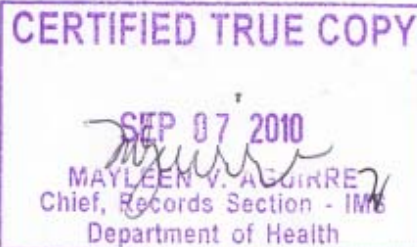
Attendance to the said activity shall be based on Department Order No. 2007-0053 dated 13 July 2007, Guidelines on the Attendance to Conventions/Seminars/Conferences and Similar Human Resource Development Activities Outside of the Department of Health.

Attached is the invitation letter for your information and ready reference.

Dissemination of the information to all concerned is requested.

By Authority of the Secretary of Health

  
**NEMESIO T. GAKO, MD, MPH, CESO II**  
Assistant Secretary of Health



emr/PAO-06-338

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## PROGRAM OF ACTIVITIES

### PHILIPPINE ORTHOPAEDIC ASSOCIATION 61<sup>ST</sup> ANNUAL CONGRESS “Geriatric Orthopaedics: Best Evidence for Better Care” PROGRAMME OF ACTIVITIES

#### NOVEMBER 16 [Tuesday]

1700-1900	The POA Research Council with Prof. Bhandari	[Camia Room]
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#### NOVEMBER 17 [Wednesday]

0800	Orientation of New Fellows	[Mactan 1]
0800	PBO Meeting	[Palawan 1]

#### Phil Council for the Bone and Joint (PCBJD) Activities

[Isla I & II]

*Moderator: AR Quidlat*

0900-0915	BJD: The Decade	LR Bonifacio
0915-0930	BJD: Beyond 2010	E Penserga
09030-0945	MSUS: An Old Technology with a New Look	SMO Aycardo
090:45-1000	Road Safety: Motorcycle Accidents	MB Geronilla
1000-1015	Consensus Guidelines on Osteoporosis Prevention, Diagnosis and Management in the Philippines	JL Yu
1015-1045	PCBJD Keynote Lecture: The History of Hip Replacement and the Development of Registries	DA Sherlock
1045-1055	Open Forum	
1055-1130	Multimodal Analgesia: The Power of Synergy	LS Kwong
1130-1230	Lunch Symposium/Product Launch (BIOMEDIS)	[Isla I & II]
1300-1500	Business Meeting	[Isla I & II]
1600	Opening Ceremonies	[Isla I & II]
1800	Fellowship Night	[Isla I & II]

#### NOVEMBER 18 [Thursday]

0530	Run for Mon	[Veterans Memorial Medical Center]
0800-1500	POA/PBO Elections	[Foyer Area]

#### ICL I: Philippine Musculoskeletal Tumor Society (PMTS)

[Mactan 1]

#### Soft Tissue Sarcomas: Evaluation and Management Principles

*Moderator: EHM Wang*

0730-0735	Welcome and Introduction to Topic	EHM Wang
0735-0750	Recognition of Soft Tissue Sarcomas: History, Physical Examination and Diagnostic Modalities	DD De Vera, Jr.
0750-0805	Principles and Nuances of Soft Tissue Sarcoma Surgery	CD Dimayuga
0805-0820	Complications of Diagnostic Approach and Treatment	RS Claudio
0820-0835	Adjuvant Chemotherapy and Radiotherapy for Soft Tissue Sarcoma	JVM Akol
0835-0855	Open Forum	
0855-0900	Closing and Awarding of Certificates	

#### ICL II: Paediatric Orthopaedic Society of the Phils. (POSP)

[Palawan 1]

#### Centennial of Legg-Calve-Perthes Disease

*Session Chair: JS Javier*

0730-0750	History and Natural History of LCP	CE Sumpaico
0750-0820	Treatment Options & Long-term Outcomes	DA Sherlock

#### SESSION I: Phil Society for the Surgery of the Hand (PSSH)

[Isla 1 & 2]

#### Degenerative Arthritis in the Hand

*Session Chair: AC Gozum*

*Moderator: NS Orillaza, Jr.*

0900-0920	Basal Joint Arthritis of the Thumb: Current Treatment	Looi KP
0920-0940	Wrist Arthroplasty and Arthrodesis: Principles and Indications	Looi KP
0940-1000	Finger Osteoarthritis: Current Status of and Issues in Diagnosis and Treatment	NB Carilo
1000-1010	Open Forum	

## PROGRAM OF ACTIVITIES

### SESSION II: Philippine Orthopaedic Trauma Society (POTS)

[Isla 1 & 2]

#### Fragility Hip Fractures

*Session Chairman: AC Cañete*

*Moderators: LM Abrahan, Jr. & PCN San Pedro*

1010-1025 Fragility Hip Fractures: The (Not So) Simple Truth

*M Bhandari*

1025-1040 Operative Treatment of Hip Fractures, Role of IM Nails & Post Hip Fracture Rehabilitation

*MJ Chehade*

1040-1055 End of life decisions and Hip Fracture

*MJ Chehade*

### SPECIAL SESSION I: Dr. Jose V. Delos Santos Sr. Memorial Lecture (JVDSSML)

[Isla 1 & 2]

*Session Chairman: LR Bonifacio*

1055-1105 Introduction to the JVDSS Memorial Lecture

*EV Delos Santos*

1105-1110 Introduction of Speaker

*LR Bonifacio*

1110-1200 Translation of Orthopaedic Research to Clinical Practice: Applicability in Developing Countries

*M Bhandari*

### LUNCH SYMPOSIUM I: Pfizer Philippines

[Isla 1 & 2]

1215-1315 New Perspectives in Acute Pain Therapy: Evolving Strategies for Improved Patient Outcomes

*SA Schug*

### SPECIAL SESSION II: Phil. Orthopaedic Research Council

[Isla 1 & 2]

*Moderators: EHM Wang & JA Aguilar*

1330-1415 Femoral Shaft Fractures: An Evidence-Based Approach to Providing the Best Treatment

*M Bhandari*

1415-1430 Open Forum

1430-1515 Salvage Techniques for Failing Hips: Evidence from Longitudinal Studies

*DA Sherlock*

1515-1530 Open Forum

### SESSION III: Philippine Orthopaedic Society for Sports Medicine (POSSM)

[Isla 1 & 2]

#### Issues in Sports Medicine

*Moderators: AS Valdez & BFD Valdecañas*

1530-1545 Pre-Participation Evaluation for Sports in the Elderly

*SMO Aycardo*

1545-1600 Sports Rehabilitation in the Elderly

*BG Tan-Sales*

1600-1610 Open Forum

### SESSION IIIA: POSSM Crossfire

*Moderator: PB Bernardo*

1620-1640 Double Bundle vs Single Bundle ACL Reconstruction

*AG San Juan  
JRC Canlas*

1640-1700 Arthroscopic vs Mini-Open Approach for Rotator Cuff Injuries

*AMV Molano  
AA Rivera*

1730-1900 POA-Australian Orthopaedic Association Meeting

1700 AO Meeting

[Mactan 1]

1900 PBO Night

[Palawan 1]

1900 President's Night

[E's Bar]

POC Alumni

PGH Alumni

Free Night

### NOVEMBER 19 [Friday]

#### ICL III: Philippine Shoulder Society (PShS)

[Palawan 1]

*Moderator: AMV Molano*

0730-0750 Proximal Humeral Fractures

*JAQ Jocson*

0750-0810 AC Joint Injuries

*MV Pecson III*

0810-0830 The Stiff Shoulder

*ACS Faller, Jr.*

## PROGRAM OF ACTIVITIES

<b>ICL IV: Philippine Spine Society (PSS)</b>		[Mactan 1]
<b>Management of Lumbar Spine Stenosis</b>		
<i>Moderator: SAM Grozman</i>		
0730-0750	Direct Posterior Decompression: Still the Gold Standard for Surgical Treatment of Lumbar Spinal Stenosis	<i>JN Sembrano</i>
0750-0810	Indications for Fusion in the Management of Lumbar Spinal Stenosis	<i>AB Catbagan</i>
0810-0830	Does Interspinous Decompression Really Work?	<i>RC Bundoc</i>
<b>SPECIAL SESSION III: FREE PAPER SESSION I</b>		[Isla I & II]
<i>Moderator: JFC Syquia</i> [0900-0945]		
<b>SPECIAL SESSION IV: FREE PAPER SESSION II</b>		[Palawan I]
<i>Moderator: JL Lai</i> [0900-0945]		
<b>SESSION IV: Phil Orthopaedic Trauma Society (POTS)</b>		[Isla 1 & 2]
<b>Updates in the Fragility, Fracture, Fixation</b>		
<i>Moderators: AC Canete &amp; MB Geronilla</i>		
1000-1020	Intracapsular Hip Fracture	<i>JFC Syquia</i>
1020-1040	Extracapsular Hip Fracture	<i>EVA Lim</i>
1040-1100	Distal Femoral Fractures	<i>EC Tenorio, Jr.</i>
<b>SESSION IVA: POTS Crossfire</b>		
<i>Moderators: RP Bergonio &amp; EVA Lim</i>		
1100-1200	Displaced Acute Femoral Neck Fracture in the Elderly: Management Options To Fix Partial Hip Replacement Total Hip Replacement	<i>JFC Syquia</i> <i>MM Flavier</i> <i>LAC Leagogo</i>
<b>LUNCH SYMPOSIUM II: Merck Sharpe &amp; Dohme</b>		[Isla 1 & 2]
<i>Session Chairman: LM Abrahan, Jr.</i>		
1215-1315	Addressing Subtrochanteric Insufficiency Fractures of the Femur After Prolonged Bisphosphonate Treatment Postoperative Pain Management in the Elderly with Fragility Fractures: Can we safely use COX-2 specific inhibitors?	<i>EVA Lim</i> <i>MFT Dela Rosa</i>
<b>SESSION V: Philippine Spine Society (PSS)</b>		[Isla 1 & 2]
<b>Managing Degenerative Conditions of the Lumbar Spine</b>		
<i>Session Chairman: JMF Ignacio</i>		
<i>Moderator: DAG Dizon</i>		
1330-1350	Balloon Kyphoplasty: Minimally Invasive Treatment for Vertebral Compression Fractures	<i>B Tow</i>
1350-1410	Pathophysiology and Management of Degenerative Disk Disease	<i>JF Lin</i>
1410-1430	Lateral Fusion (LLIF/XLIF/DLIF) for Degenerative Disk Disease	<i>JN Sembrano</i>
1430-1450	Minimally Invasive Solutions to Geriatric Spinal Conditions	<i>B Tow</i>
1450-1500	Open Forum/Break	
1500-1515	Adjacent Segment Degeneration in the Lumbar Spine; Causes and Surgical Strategies for Prevention	<i>O Osti</i>
1515-1530	Long Term Follow Up of Semi-Rigid Instrumentation in the Lumbar Spine	<i>O Osti</i>
1530-1600	The Degenerative Cervical Spine	<i>B McCormack</i>
1630-1900	Philippine Spine Society Meeting	
1900	Congress Banquet	

## NOVEMBER 20 [Saturday]

**ICLV: Assn. for the Study and Methods of Ilizarov (ASAMI)** [Palawan 1]

**Options for Management of Complicated Bone and Joint Infections**

*Session Chairman: JS Javier*

*Moderator: FPI Nicomedez & MAG Morales*

0800-0815 Pathophysiology and Medical Management *M Velmonte*

0815-0830 Options for Bone Loss Secondary to Osteomyelitis *DV Dungca*

0830-0845 Options in the Management of Septic Arthritis Sequelae Using the Ilizarov Method *JS Javier*

0845-0900 Open Forum

**SESSION VIA: Philippine Hip & Knee Society(PHKS)** [Isla 1 & 2]

**Hip Session**

*Session Chairman: GMS Azores*

*Moderator: RT Dela Rosa & FJF Diyco*

0905-0915 Overview of Total Joint Replacement in the Provincial Setting *JMR Coruña*

0915-0925 Total Hip Arthroplasty in Acute Femoral Fracture in the Elderly *PB Bernardo*

0925-0935 Total Hip Arthroplasty in the Elderly: Pearls and Pitfalls *BA Agbayani, Jr.*

0935-0950 Hip Fractures in the Elderly *B Cumberland*

0950-1000 THR Bearing Surfaces: Current Status *CS Mow*

1000-1020 Open Forum/Break

**SESSION VIB: (PHKS)** [Isla 1 & 2]

**Knee Sessions**

*Session Chairman: PCN San Pedro*

*Moderators: RAT Ochoa & VP Garduce, Jr.*

1020-1030 Total knee replacement in the elderly: Pearls and Pitfalls *II Guloy III*

1030-1040 Total Knee Arthroplasty in Patients 75 Years Old and Older *AN Tanchuling, Jr.*

1040-1050 Uni-Compartmental Knee replacement in the Elderly *CS Mow*

1050-1105 Osteotomy for the Degenerative Knee *RJ Bartlett*

1105-1130 Open Forum

**LUNCH SYMPOSIUM III: GETZ Pharmaceuticals** [Isla 1 & 2]

1130-1245 Defining Treatment Options in Osteoarthritis *LDD Caro*  
Closing Ceremonies

**SPECIAL SESSION V: Residents' Research Forum** [Palawan 1]

1300-1400 (8 Papers)

## POA 61ST ANNUAL CONGRESS FOREIGN SPEAKERS

### ROBERT JOHN BARTLETT [Australia]

Dr. Bartlett practices in Heidelberg, Victoria, Australia and married to Carol Christine. He finished his MB and BS Degree at the University of Melbourne in 1967 and became a Fellow Royal of the Australasian College of Surgeons in 1973.



He is currently an Honorary Consultant Orthopaedic Surgeon at the Austin Hospital in Melbourne; a Senior Lecturer at the University of Melbourne; Treasurer Executive Committee of the ISAKOS; and Australian Delegate to the APOA, APKS and APOSSM. He is also a Past President of the Asia-Pacific Orthopaedic Association – Knee & Sports Medicine, and the Australian Knee Society.

He is a member of local and international associations and societies as well as a lot of articles in famous publications. He was awarded travelling fellowships for the Australian Orthopaedic Association; Royal Australasian College of Surgeons; APOA and Asia Pacific Orthopaedic Society Sports Medicine. He is also member of a number of sporting clubs.



### MOHIT BHANDARI [CANADA] *Jose V. Delos Santos Memorial Lecturer*

Prof. Mohit Bhandari is the Canada Research Chairman in Musculoskeletal Trauma, Associate Chair of the Division of Orthopaedic Surgery, Associate Professor of the Department of Surgery, Associate Faculty of the Department of Clinical Epidemiology

and Biostatistics, and Co-Chair of the CLARITY Research Group (Clinical Advances through Research and Information Translation at McMaster University) at the McMaster University.

He is also the Director of the Center for Bone Healing and Research. E ranks 7<sup>th</sup> in the 2010 Top 20 cited Surgeons in 20 years. He is an (Kappa Delta) Award Winner for the 2010 American Academy of Orthopaedic Surgeons-OREF. He received a medal in research from the Royal College of Physicians and Surgeons of Canada in 2009.

He was awarded Visionaries Under 40 in Hamilton Distinction and a Kirkley Young Investigator Award in 2005. He received a JE Edouard Samson Award for most significant contribution in to Canadian orthopaedic research (Canadian Orthopaedic Research Society) in 2003. He is an Associate Editor of the Indian Journal of Orthopaedics and Co-Managing Editor of the Orthopaedic Trauma Directions in Zurich, Switzerland.

He obtained over 17 million dollars in research funding and has over 600 publications (papers, book chapters, editorships, presentations) over the past 6 years. His research interests include Clinical trials, Meta-analysis, Study Methodology, Evidence-Based Practice. Musculoskeletal Trauma is his research focus.

### MELLYCK J. CHEHADE [Australia]

Professor Chegade is an orthopaedic surgeon, with a degree in medicine and a PhD in biomechanics from the University of Adelaide in Australia. He works at the Royal Adelaide Hospital specialising in trauma surgery and is the current President of the Australasian Orthopaedic Trauma Society. He has strong interests in both research and teaching and directs the Australian Musculoskeletal Education Collaboration (AMSEC) to develop evidence based competency standards for musculoskeletal health professionals. He works with several national and international committees including the Scientific and Medical advisory board for Osteoporosis Australia, the Osteosynthesis and Trauma Care (OTC) foundation South Pacific (current president), the ANZ Association for the Surgery of Trauma and the International Surgical Wound Management Board. His research interests are in education, biomechanics, bone repair, wound management, osteoporotic fracture management and prevention, and the *in vivo* assessment of fracture mechanics.



### HW BILL CUMBERLAND [Australia]

Dr. Cumberland, current President of the Australian Orthopaedic Association (AOA), had his MBBS degree at the University of Sydney (Honors II) and received a Dunn Surgery Prize during graduation. He is also a Prosector of the Department of Anatomy. He had his titles in FRACS in 1984, FRCS in 1985 and FAOrth in 1986.

He is presently the Director of Training - Orthopaedic Registrar(S) Hastings District Hospital, Port Macquarie Base Hospital and Port Macquarie Private Hospital from 1992 to Present. He is also the current Chairman Code of Conduct Review Committee of the AOA. He was 2nd and 1st Vice-president of the AOA in 2008 and 2009 respectively. He held positions with the AOA and Australian Society of Orthopaedic Surgeons as state committee member and chairman of the NSW Regional Branch; Chairman of the Conjoint Sydney Board of Studies, AOA Registrar Training Programme; initially Committee Man Federal Committee, and subsequently NSW Branch Director, Board of Directors; Foundation Chairman,

## FOREIGN FACULTY

Rural Surgeons Committee; Chairman Continuing Professional Development Committee; and Convenor, NSW Regional Branch, Scientific Meeting, Port Macquarie.

He has been Session Chairman of the Society Internationale Surgery of Traumatic (SICOT) Sydney 1997; Continuing Education Committee Meeting, Alice Springs, 1999/2000; Continuing Education Committee Meeting, Gold Coast, 2001; and Australian Arthroplasty Society, Sanctuary Cove, 2004. He also had a number of papers and publications presented.

### EDWARD VA LIM (USA)

Dr. Lim is a board certified and re-certified orthopedic surgeon with primary specialty interests in joint replacement, reconstruction and trauma.

He was born in the Philippines and obtained his undergraduate degree at the University of the Philippines in Manila. He completed his medical education (MD cum laude) at the University of the Philippines - College of Medicine in 1977. Following a five-year Orthopaedic Surgery Internship and Residency program at the University of Cincinnati Medical Center, additional training included an AO Trauma Fellowship in Hannover, West Germany and Davos, Switzerland, and a second Fellowship at the University of California, San Francisco - San Francisco General Hospital. He then returned to join the faculty at the University of Cincinnati. From 1992 to 2002, Dr. Lim served as Vice Chairman and Associate Professor of the Department of Orthopaedic Surgery and Director of the Division of Orthopaedic Trauma at the University of Cincinnati Medical Center.

During this period, Dr. Lim had a busy clinical practice at University Hospital, Christ Hospital, and Good Samaritan Hospital. He was responsible for orthopedic residency education and was actively involved with orthopaedic education in the Philippines where he returned (and continues to do so) several time each year to volunteer his time and service.

Dr. Lim has published numerous articles on orthopaedics and related topics. He continues to be an invited lecturer for educational courses throughout the United States and Asia. In 1997, he completed a Masters of Business Administration at Xavier University in Cincinnati (MBA), as well as a Physician Leadership Program through the Health Alliance in Cincinnati. In the clinical practice of orthopaedic surgery, Dr. Lim has also briefly practiced in Marietta, Ohio (1989 - 1992) and Richmond, Indiana (2002 - 2005).

Dr. Lim is a Fellow of the American Academy of Orthopaedic and an Examiner for the American Board of Orthopaedic Surgery. He also serves as an editor for the Journal of Trauma and continues to be a volunteer Associate Professor at the University of Cincinnati, Department of Orthopaedic Surgery.



He is a member of the Ohio State Medical Association, The Cincinnati Academy of Medicine, Orthopaedic Trauma Association, American Orthopaedic Association.

In June 2006, Dr. Lim returned home to Cincinnati to resume his orthopaedic surgery and joint replacement practice at the Christ Hospital MOB and the Jewish Medical offices in Kenwood, Cincinnati, Ohio. Dr. Lim resides in Cincinnati, Ohio with his wife Julia, and their three children, Elizabeth, Meredith and Edward.

### JIN-FU LIN [Taiwan]



Dr. Jin-Fu Lin is currently a Consultant Spine Surgeon at the Central Clinic Hospital and at the Bonecare Orthopaedic Group, Taipei, Taiwan. He took his medical education at the China Medical College in Taichung and Orthopaedic training at the Department of Orthopaedics, Taipei Jen-Ai Municipal Hospital. He

continued to pursue for spine subspecialty and trained under Prof. Henry H. Bohlman from the Dept. of Orthopaedics, Case Western Reserve University, Cleveland, Ohio, USA and Prof. Robert B. Winter from Minnesota Spine Center, Minneapolis, Minnesota, USA.

His current hospital appointments include: Attending Staff, Dept of Orthopaedic Surgery, Provincial Taipei Hospital and Chief of Dept. of Spinal Surgery, Taipei Hospital, Dept. of Health, Taiwan.

He had received several awards through his research papers pertaining to the spine. He also has several academic presentations, publications, and domestic and international presentations. His special Interests include Lumbar Degenerative Disorders, Analgesic Discography, Lateral Retroperitoneal Approach and Lumbar Interbody Fusion.

### LOOI KOK POH [Singapore]

Dr. Looi is an eminent orthopedic, hand, wrist and reconstructive microvascular surgeon, and the Director of the Hand Wrist and Microsurgical Centre, located in Gleneagles Medical Centre and the SHO Clinic, in Parkway East Medical Centre, Singapore.



Dr Looi completed his basic medical and surgical degrees in Singapore and progressed to become a fellow of the Royal College of Surgeons of Edinburgh in 1994. He then furthered his training at Mayo Clinic, Rochester, Minnesota, USA, where he resided and honed his skill in orthopedics, hand, wrist and microsurgery with many renowned surgeons from around the world.

## FOREIGN FACULTY

Dr Looi currently serves as the Chairman of Wrist Interest Group of the Singapore Society for Hand Surgery and is a visiting doctor to the Department of Hand & Reconstructive Microsurgery at the National University Hospital of Singapore, where he continues to train doctors and treat patients. He also served as the past President of the Singapore Society for Hand Surgery.

A regular speaker at local, regional and international meetings, Dr Looi has much of his academic research featured in numerous publications and is involved in ongoing National Medical Research Council funded research projects with the National University Hospital.

Dr Looi is also a recipient of numerous scholarships and awards such as the NUH Young Doctors Award of 2000, the Young Orthopedic Surgeon Award of 2000, SOA ambassador to HKOA in 2000, and the Ministry of Health Manpower Development Plan Fellowship to USA (Hand Surgery) in 1999.

Dr Looi is now director of the Hand Wrist and Microsurgical Centre Pte Ltd located in Gleneagles Medical Centre as well as the SHO Clinic Pte Ltd at Parkway East Medical Centre in Singapore. He continues to provide the most up-to-date care for patients with sports, orthopedic, hand, wrist and reconstructive microsurgical conditions.

He currently holds the positions: Senior Sports Orthopedic Hand and Wrist Surgeon; Senior Reconstructive Nerve and Micro Vascular Surgeon; Director, Hand Wrist and Microsurgical Centre Pte Ltd; Director, SHO Clinic Pte Ltd; Visiting Doctor, Department Hand, Wrist and Reconstructive Microsurgery, National University Hospital; Past President, Singapore Society for Hand Surgery; and Chairman Wrist Interest Group, SSHS.

### **BRUCE M. MCCORMACK [USA]**

Dr. McCormack is a Board Certified neurosurgeon who has pioneered minimally invasive spinal surgery techniques including thoracoscopic and lumbar endoscopic spinal surgery procedures. He has been in practice in San Francisco since 1992. In 1998, Dr. McCormack founded the Neurospine Institute at California Pacific Medical Center, and serves as its director. Dr. McCormack earned his M.D. at Columbia University College of Physicians and Surgeons and his undergraduate degree from Brown University. He interned in general surgery at Mount Sinai Hospital in New York and served his residency in neurological surgery at New York University Medical Center. Dr. McCormack completed two fellowships in spine surgery at the University of New Mexico and the University of Florida. He held a full time faculty position at UCSF Department of Neurosurgery as Assistant Professor from 1994-1998.



### **CHRISTOPHER S. MOW (USA) (Mao Xian-Guang, MD)**

Dr. Christopher S. Mow is currently a Clinical Associate Professor and International Program Director at the Department of Orthopaedic Surgery, Stanford University Medical Center, Stanford, CA. He took his MD at the New York University School of Medicine (1982-1986); His BA at the Cornell University Asian Studies (1978-1982); and HS at the Phillips Exeter Academy (1974-1978). Dr. Mow had his medical internship at the Lenox Hill Hospital, New York, NY (1986-1987) and pursued his orthopedic residency at the Hospital for Special Surgery, Cornell University Medical Center, New York, NY (1987-1991). He also an Orthopaedic Board Certification passer in Written (1991), Oral (1994), Recertification (2004). Dr. Mow had his fellowship training as an Adult Reconstructive Fellow at the Department of Orthopaedics, University of Colorado Health Sciences Center, Denver CO (1991-1992). He presently holds honorary positions which include: Honorary Professor of Orthopaedic Surgery, Zhongshan Sun Yat-sen School of Medicine, Guangzhou, Peoples' Republic of China; Yang Ming Medical College, Taipei, Taiwan; Honorary Professor of Orthopaedic Surgery; Honorary Professor of Orthopaedic Surgery, No.1 University Hospital, West China University of Medical Sciences, Chengdu, People's Republic of China; Honorary Professor of Orthopaedic Surgery, Tianjin Hospital, Tianjin, People's Republic of China; and Honorary Professor of Orthopaedic Surgery, Tianjin First Medical Center, Tianjin Second Medical University, Tianjin, Peoples' Republic of China.

He presently has the following editorial, committee and board positions: Faculty Review Board, University of Malaya, Kuala Lumpur, Malaysia; Honorary Founding Patron, Indonesia Hip and Knee Society, Jakarta, Indonesia; Chairman, Board of Directors, Liu Kong-le Foundation for Medical Education and Exchange, Hong Kong SAR, China; Consultant Reviewer, Clinical Orthopaedics and Related Research; Committee Member, Research and Grant Board, American Association of Hip and Knee Surgeons; Board of Directors, Asian American Institute for Research and Education, Pittsburgh, PA (President Savio L. Y. Woo, PhD); Committee Member, Evaluation and Examination Committee, American Academy of Orthopaedic Surgeons (AAOS); Board of Directors, Chinese Speaking Orthopaedic Society, Hong Kong, China; Committee Member, Hip, Knee, and Adult Reconstruction, American Academy of Orthopaedic Surgeons (AAOS); and Board of Directors, Lau Foundation for Chinese Medical and Cultural Education, Taipei, Taiwan, Republic of China.

**ORSO LORENZO OSTI [Australia]**

Dr. Osti is born in Genoa Italy, happily married to Meegan and has 6 children. He spent his medical education at the University of Rome where he got his Specialist Diploma in Orthopaedic and Traumatic Surgery. He passed the Australian Medical Council Examination in 1992 then proceeded to take his PhD in Medicine; Fellowship in Orthopaedic Surgery (FRACS) with the Royal Australian College of Surgeons; and Fellowship of Australian Orthopaedic Association (F A Orth A).



Dr. Osti is a Clinical Senior Lecturer of the Department of Orthopaedics & Trauma at the University of Adelaide since 1993. He is also a member of the Advisory Board of the Spine Journal in Philadelphia USA; Editorial Board of the European Spine Journal; Whiplash Best Practice Taskforce and Technical Advisory Group TRAC SA in South Australia; and Spinal Prosthesis Clinical Advisory Group, Commonwealth of Australia.

He is an Australian Councillor of the Spine Section of the Asia Pacific Orthopaedic Association; Chairman of the Surgical Services Committee at Calvary Health Care in North Adelaide, South Australia; and Adjunct Lecturer of the Division of Health Sciences at the University of South Australia. He is a member to a lot of national and international societies and received a number of awards.

**DAVID ALEXANDER SHERLOCK [Scotland]**

*Philippine Council for the Bone and Joint Decade Keynote Lecturer*

Mr. Sherlock went to King Alfred's Grammar School, Wantage in Berkshire and University College in Oxford initially to read Chemistry for a year then changed to Medicine at the University of Oxford Medical School.

His qualifications include: D.Phil. for thesis entitled "Experimental Anatomical Studies on the Organization of the Diencephalon", Department of Human Anatomy, Oxford; M.A. (Upper 2nd Honours Degree in Physiological Sciences), B.M. and B.Ch. University of Oxford; University of Oxford; and F.R.C.S. (England) in 1981.

He is Consultant of the Orthopaedics and Trauma to Southern General Hospital and Royal Hospital for Sick Children in Glasgow from May 1988 – December 2009. He is now retired but working part-time at the Southern General Hospital. His postgraduate training included two years of general surgery, vascular surgery and urology.

**ORTHOPAEDICS:** His orthopaedic training comprised three years as a Senior Registrar and three and a half years as a Registrar in Orthopaedics and Traumatology, six months of

accident work as a Casualty Officer and eight months spent as a Senior House Officer in elective Orthopaedic Surgery. I was trained in the full spectrum of orthopaedics and trauma. I have been a consultant in orthopaedics and trauma for 21 years. He works half in paediatric orthopaedics and trauma and half in general adult orthopaedics. For the first 4 years after appointment he undertook acute adult trauma receiving but now only perform secondary surgery/treatment for adult trauma cases.

The environment of a teaching hospital facilitates research which he continues to pursue in the fields of obstetric brachial plexus palsy, congenital hip displacement and Perthes' disease particularly. He runs specialist clinics for congenital hip dislocation, Perthes' disease and club feet in addition to his general paediatric orthopaedic clinics. Along with Mr. Hems and Andrew Hart, he provides service for obstetric brachial plexus palsy for the whole of Scotland. He has devised a number of GP and patient information letters on common problems in children's orthopaedics. In the adult sector he continues to see and treat a wide range of general orthopaedic problems in addition to running a specialist back clinic. He was previously the medical advisor to the Paisley Pirates Ice Hockey team which kept me up to date in the management of sports injuries.

**RESEARCH:** Between my pre-clinical and clinical medical studies, I studied for a D. Phil in the Department of Human Anatomy with Dr G Raisman, researching the nervous connections of the diencephalon of the rat. In addition to setting up various experimental projects, I became proficient in preparing and analyzing material for routine light and histochemical microscopy, auto-radiography, and electron microscopy. I operated on rats and mice using the operating microscope to make stereotaxic lesions in the brain and to perform peripheral nerve anastomoses.

As a consultant I have continued my interest in research despite a very heavy clinical work load. In addition to contributing to a book on sports medicine I have produced two single author papers - a considerable rarity these days (see publications).

**TEACHING:** He is responsible both for undergraduate and postgraduate teaching. At the Southern General he provides teaching to undergraduates and also contributes to postgraduate teaching, in both hospitals.

He runs the postgraduate training program for junior staff at the Royal Hospital for Sick Children with the aim of providing a comprehensive grounding in all aspects of paediatric orthopaedics. He has a reputation nationally which results in referrals from Inverness to Carlisle. He had been invited to speak on various topics in orthopaedics in Aberdeen, St Andrews, Dundee, Edinburgh, Glasgow, Oswestry, Hull and in Shanghai, China.

He keeps knowledge up to date by participating in continuing medical education (CME). I am a member of the Scottish

## FOREIGN FACULTY

Paediatric Orthopaedics Club, the British Society for Children's Orthopaedics and the Girdlestone Orthopaedic Society.

He is an examiner for the FRCS (Orthopaedics) examination, which is the exit examination at the end of orthopaedic training. He also acted as assessor for the medical ombudsman. His extensive medico legal practice has given him considerable experience in assessment and the long-term outcomes of disability resulting from injury.

### **BENJAMIN TOW PHAK BOON (Singapore)**

Dr. Tow is currently a Consultant at the Spine service of the Singapore Gen'l Hospital; 2007-Tutor and Lecturer Duke-NUS Graduate Med'l School; 2007-Clinical Tutor Yong-Loo Lin NUS Medical School; 2009-SGH Blood Transfusion Committee member; and 2010-Clinical Core Faculty Member [TY

Residency program]. Anglo Chinese Secondary School was his secondary School; junior college at Raffles Junior College; MBBS at the University of Singapore; obtained Full Registration with the Singapore Medical Council and General Medical Council of UK.

He is a member of the Back Society Singapore – Treasurer, executive-committee member since June 2003.

And a member of the Singapore Orthopaedic Association member since May 2004 and is currently 2008 – 2010 Treasurer and Ex-co Member. He is married to Lim Hsien Jer with three kids Luke, Mark and John. His interests include Spinal Surgery & minimally invasive spines surgery



## POA 61ST ANNUAL CONGRESS LOCAL SPEAKERS



### **JUDITH VALERIE M. AKOL**

Dr. Judith Valerie Mendoza Akol was a scholar for two semesters and graduated Cum Laude for BS in Biology at the University of the Philippines (UP), Diliman. She took her Degree in Medicine at the College of Medicine, UP Manila. She had her Medical Clerkship at the UP Philippine General Hospital (PGH) and residency training

at the Department of Orthopedics of the same hospital.

She had her Fellowship on Musculoskeletal Oncology at the Department of Orthopedics and Traumatology at the Chinese University of Hong Kong. She is currently an active staff of the Cebu Orthopaedic Institute; Department of Orthopedics, Chong Hua Hospital; Department of Orthopedics, Vicente Sotto Memorial Medical Center; and a visiting staff at the Department of Surgery, Perpetual Succour Hospital and Department of Surgery, Visayas Community Medical Center all in Cebu City.

Dr. Akol is currently the President of the POA Central Eastern Visayas and a member of the Philippine Musculoskeletal Tumor Society.

### **BENIGNO A. AGBAYANI, JR.**

Dr. Benigno A. Agbayani Jr. obtained a Bachelors of Science in Biology from the University of the Philippines in 1986 and a Medical degree from the University of the Philippines in 1991. He completed his residency in Orthopedics from the Philippine General Hospital in 1996 and gained a two year accredited fellowship in



Arthroscopy and Joint Reconstruction from the Flinders University and Medical Center in Australia in 1998.

Dr. Agbayani is the Co-Founder of Advanced Orthopedics for Joint Replacement and currently the Vice Chairman of the Department of Orthopedics of Manila Doctors Hospital. His other professional affiliations include the Philippine Orthopedic Association, the Philippine Hip and Knee Society, the Philippine Shoulder Society, the Philippine Orthopedic Society for Sports Medicine and the Asia Pacific Arthroplasty Society. He is an active consultant and vice chair of the section of Orthopedics at the Manila Doctors Hospital, and a visiting consultant at Cardinal Santos Medical Center and at the Medical Center Manila.

Dr. Agbayani was President for the Philippine Shoulder Society from 2005-2007, President of Sportsmed Inc. 2001-2005 and was an Associate Clinical Professor in Orthopedics, Adult Section, Arthroplasty and Sports Injury at the University of the Philippines College of Medicine and Philippine General Hospital from 2001 to 2007.

Dr. Agbayani devotes his spare time with his family and friends and enjoys traveling, photography, reading books on Philosophy, History, Non-Fiction and Science as well as listening to music and playing tennis and coaching basketball.



### **SVETLANA MARIS OLASO-AYCARD**

She is a graduate of the University of Santo Tomas Faculty of Medicine and Surgery and trained in Physical Medicine and Rehabilitation in A. Mabini Rehabilitation Center of the same institution.

Currently, she is the head sports physician of the Philippine Basketball Association, National Basketball Association - Asia and the team physician of the Smart Gilas Team Pilipinas. Her interest in musculoskeletal medicine stemmed from her deep involvement with the Philippine Council of the Bone and Joint Decade which encompass musculoskeletal injuries, osteoporosis and road trauma.

Aside from her clinical rehabilitation practice, she teaches in the Department of Medicine and the Department of Rehabilitation Medicine of the UST-Faculty of Medicine and Surgery. She is also involved in the promotion and dissemination of the musculoskeletal diagnostic ultrasound in the country as a co-founder of the PSCMU Inc (Philippine Society of Clinical Musculoskeletal Ultrasonography).

#### PETER B. BERNARDO

He graduated from the UP College of Medicine, took his Residency at the Department of Orthopedics UP-PGH. He took his Fellowship in Hip and Knee Surgery at the Niigata University, Niigata, Japan in 1991. He was the ESSKA - APOSSM Travelling fellow in 2000. He was a former President of the Philippine Hip and Knee Society [2007- 2008] and the ASEAN Arthroplasty Association [2009]. He is the current president of POSSM and a Clinical Associate Professor of the Dep't of Orthopedics UP-PGH.



#### LAURO R. BONIFACIO

Dr. Lauro R. Bonifacio the current president of the POA and he had been member of the POA Board of Trustees since 2003 and a current council member of the ASEAN Orthopaedic Association. He is an international member of the American Academy of Orthopaedic Surgeons; member of Societe International de Chirurgie

Orthopedique et De Traumatologia (SICOT); and member of the AO Trauma Asia Pacific. He is a life member of the Philippine Medical Association and a Life member and member of the Board of Governors of the Philippine College of Surgeons

He is married to Annabelle with 3 kids. He finished his medical degree at the Far Eastern University College of Medicine and had his Medical Internship at the Far Eastern University Hospital. He pursued his training and took up his orthopedic and traumatology residency training at the Philippine Orthopedic Center (Formerly National Orthopedic Hospital). He had his Fellowship in Adult Reconstructive Joint Surgery at the Department of Orthopedic Surgery, National University Hospital, National University of Singapore.



Dr. Bonifacio currently holds a Masters Degree in Hospital Administration which he finished at the College of Public Health, University of the Philippines. He also a Career Executive Service Officer (CESO VI) conferred by the Career Executive Service Board (CESB) of the Civil Service Commission)

#### RAFAEL C. BUNDOC

Dr. Rafael C. Bundoc graduated from the UP College of Medicine ('86) and finished his residency at the Department of Orthopedics at the UP-PGH Medical Center. Dr. Bundoc finished his Master Degree in Science in Biomechanics in Scotland. He had his Fellowship in Spine Surgery at the Nuffield Orthopaedic Center in Oxford, England and at the Prince of Wales Hospital, Chinese University of Hong Kong.



Awards: Ten Outstanding Young Men (TOYM) in the Field of Medicine (1997); Ten Outstanding Scientists (TOYS, 2000) given by National academy of Science and Technology (2000); and Metrobank Outstanding Teacher Award (2005). Currently, Dr. Bundoc heads the Integrated Biomechanical Laboratory at the UPPGH; an Associate Professor and Professor of Anatomy at the UP College of Medicine; and Consultant at the Spine Service of the Department of Orthopedics - UP PGH Medical Center

#### JOSE RAUL C. CANLAS



Dr. Jose Raul C. Canlas finished his elementary and high school education at the Ateneo de Manila. He finished his BS Degree at the College of Arts and Sciences, University of the Philippines (UP), Diliman then pursued his degree in Medicine at the UP College of Medicine. He had his Medical Internship at the Philippine General Hospital (PGH) and orthopedic residency training at the Department of Orthopedics of the same hospital. He specializes in Sports Medicine and Orthopedic Surgery had his post graduate training at the Minneapolis Sports Medicine Center, Minneapolis, Minnesota.

Among his honors include: Olympism Award, Philippine Olympic Committee, 2003; Award of Recognition, Highest Score, Philippine Board of Orthopedics Diplomate Exam, 1993; Cum Laude, University of the Philippines, 1982; Sports Editor of the Year, National Press Conference for Secondary Schools, 1978;

He is also a current member of different associations and societies which include: Medical Committee, International Basketball Federation (FIBA), 1998 to present; Medical Director, Philippine Center for Sports Medicine, Philippine Sports Commission, 1998 to present; Board of Directors,

## LOCAL FACULTY

Gatorade Sports Science Institute Asia 2004 to present; Director, Institute of Orthopedics and Sports Medicine, St Luke's Medical Center Global City, 2008 to present; Assistant Director, Institute of Orthopedics and Sports Medicine, St Luke's Medical Center, 2006 to present; Executive Director, Moro Lorenzo Sports Center, Ateneo de Manila, 2001 to present; Team Physician Ateneo Seniors Basketball Team, 1999 to present

He had been very active in the medical sports committees including the medical team/team physician for previous Olympics, ASEAN and FIBA tournaments for the Philippine delegation. He was also a past president of the RP Surfer's Association.

### NOEL B. CARILO

Graduated Bachelor of Science at the University of the Philippines and finished medicine at the University of the East College of Medicine. He finished his residency in Orthopedics at the Philippine Orthopedic Center. He had his fellowship in hand, microsurgery, and peripheral nerve surgery at the Singapore General Hospital under the sponsorship of the Colombo Plan in 1982 and an Update fellow in Reconstructive Orthopedic Microsurgery at Alexandra Hospital in Singapore in 1985. He became a diplomate in orthopedics in 1983 and became a fellow of the Philippine Orthopedic Association in 1985. In 1987 he became a fellow of the Philippine College of Surgeons.

Since 1983 he has been a consultant in orthopedics at the Philippine Orthopedic Center dealing mostly in orthopedic trauma as he is a senior consultant of one of the trauma services in that center. Since 1985 he has been connected with St. Luke's Medical Center where he practices orthopedics subspecializing in hand, microsurgery, and peripheral nerves surgery. Currently, he heads the section of Hand, Microsurgery, and Peripheral Nerves Surgery at the St. Luke's Medical Center QC Institute of Orthopedics and Sports Medicine.

He became president of the Philippine Orthopedic Association, Inc. in 1999, and president of the Philippine Orthopedic Society for Sports Medicine in 2001. He was a member of the Philippine Board of Orthopedics in 2006, the specialty board for orthopedic surgery in the country. He is a founding member of the Board of Trustees of the Philippine Orthopedic Association Foundation, Inc and currently continuing to serve the foundation in his capacity as member of the board of trustees.

Dr. Noel Carilo, in his desire to organize the subspecialties of orthopedics, is a founding member of the Philippine Hand Society (previously Philippine Society for the Surgery of the Hand) among other orthopedic subspecialties. He has been a lecturer on various orthopedic, hand and upper extremity

topics in orthopedic meetings locally and in the ASEAN region.



### ADRIAN B. CATBAGAN

Dr. Adrian Catbagan is an MD graduate at the UP-PGH College of Medicine and had his Orthopedic Residency at the Department of Orthopedics, UP-PGH. He specializes in Spine Surgery through Spine Fellowships at the University of Hongkong and Hospital St. Vincent de Paul in Paris. He is a consultant at the Asian Hospital, Saint

Luke's Medical Center and the East Avenue Medical Center.

### RAFAEL S. CLAUDIO

Dr. Rafael S. Claudio is currently the Chairman of the Department of Orthopedics, The Medical City. He is also the current and founding head of the Musculoskeletal Tumor Unit of the Philippine Orthopedic Center.

Dr. Claudio is a Past President of the Philippine Society of Oncology and Philippine Musculoskeletal Tumor Society.

He took up his Medical Degree at the University of the Philippines, College of Medicine (1981) and Orthopedic Residency at the Philippine Orthopedic Center (1984 – 1989). Dr. Claudio took his post-graduate fellowship on Musculoskeletal Oncology and Adult reconstructive surgery at the University of Gothenburg-Sahlgren Hospital, Gothenburg, Sweden (1989 – 1990).



### JOSE MARIA R. CORUÑA

Dr. Coruña finished elementary education at the La Salle Grade School in Bacolod City; High School education at Ateneo de Manila Quezon City; BS Biology at Ateneo de Manila University in Quezon City; Medicine at the University of the East Ramon Magsaysay Memorial Medical Center College of Medicine; Medical

internship at the University of the Philippines-Philippine General Hospital; Post internship rural service at Morong Health Center, Morong, Rizal; and Orthopedics residency at UP-Philippine General Hospital. He had his fellowship in Adult Reconstructive Surgery, Total Joints Replacement & Biomechanics at the Hennepin County Medical Center, Minneapolis, Minnesota, USA.

He is the first inducted president of the POA Western Visayas Chapter and had represented the Visayas region to the POA

## LOCAL FACULTY

Board of Trustees. He is also currently a trustee at-large of the Philippine Board of Orthopaedics.

He was an Instructor in physiology at the Ateneo de Manila University and Riverside College. He is a volunteer orthopedic surgeon for the Negros Occidental Rehabilitation Foundation, Inc. & Volunteers for the Rehabilitation of the Handicapped, Inc. He is a member of several medical associations; a certified Clinical Densitometrist by the International Society of Clinical Densitometry; Faculty, Professor I at the University of St. La Salle College of Medicine, Bacolod City 2007; Medical Director of the DPOTMH Riverside Medical Center 2009; and a Member of the Board of Directors, Riverside Medical Center, Inc. 2009

He is a husband, father, teacher and surgeon. He is happily married to Maria Teresa David-Coruña. Father to Jose Carlos (Kayo) & Juan Agustin, IV (Chinkin); Father in law to Winnie & Jo Anne and Grandfather to Cirilo Miguel (Riguel)

### DELFIN D. DE VERA, JR.

Dr. De Vera is currently an active consultant at the St. Luke's Medical Center – Global City, an Orthopedic Oncology Consultant at the Quezon City General Hospital and Department head of the Quezon City Rescue-Sagip Buhay.



He was inducted as Fellow of the POA last year and ranked number 2 at the PBO Diplomate Exams in 2008. He had his residency training and post grad training Orthopedic Surgical Oncology Fellowship at the Philippine Orthopedic Center. He finished his post-grad internship at the Quirino Memorial Medical Center; Medicine at the Fatima College of Medicine; BS Psychology at the University of Sto. Tomas; high school at the Lourdes School of Quezon City.



### CESAR CIPRIANO DE LEON DIMAYUGA

Dr. Cesar L. Dimayuga finished his Doctor of Medicine at the UP College of Medicine and had his medical internship at the Philippine General Hospital. He trained as an orthopedic resident at the Department of Orthopedics, UP-PGH. He then pursued his postgraduate training in

Orthopedic Oncology and Sports Medicine and Arthroscopy at the Case Western Reserve University, University Hospitals of Cleveland, Cleveland, Ohio.

Dr. Dimayuga is currently an active consultant at The Medical City, Philippine General Hospital and Capitol Medical Center. He is also an Associate Clinical Professor at the Department of Orthopedics, Philippine General Hospital. He is a founding member and founding current president of the Philippine

Musculoskeletal Tumor Society. Dr. Dimayuga is also the Head of the Chemotherapy Unit, Cancer Institute, Philippine General Hospital and a Member, Advisory Board of Asia Pacific Musculoskeletal Tumor Society, since 2006

### DANIEL V. DUNGCA

Dr. Dungca obtained his medical degree from the University of the Philippines College of Medicine. He had his orthopaedic residency training at the UP-PGH Department of Orthopaedics. He pioneered the Fellowship Program on the Methods of Ilizarov at the UP-PGH, after which he did his Fellowship in Paediatric Orthopaedics as a Registrar at the KK Women's and Children's Hospital in Singapore. He is currently the head of the Ilizarov and Limb Deformity Service of the Jose R. Reyes Memorial Medical Center Department of Orthopaedics. He is also the Vice-President of the North Luzon Chapter of the POA, Secretary of the ASAMI-Philippines, as well as the PRO of the Paediatric Orthopaedic Society of the Philippines.



### ALBERT CESAR S. FALLER, JR.

Dr. Faller is a board certified orthopaedic surgeon with primary specialty interests in orthopaedic trauma, shoulder and knee arthroscopy and sport related injury diagnosis and treatment.

He obtained his undergraduate degree at UST and completed his medical education at the same institution.

Following a one-year Post-Graduate Medical Internship at the Sto. Tomas University Hospital, he underwent a 4-year Residency Program at the Jose R. Reyes Memorial Medical Center (Department of Orthopaedics and Traumatology).

Additional training included Orthopaedic Fellowship at the University Orthopaedics and Sports Medicine at the University of Cincinnati Medical Center Cincinnati, Ohio, USA under the supervision of Dr. Angelo J. Colosimo. These trainings focused on Sports Related Injury, Diagnosis and Treatment for High School and College Football Games and conduct of Orthopedic Physical Examinations of all college athletes applying for the National Football League. He also trained in Orthopaedic Trauma and Joint Replacement at Eastern Indiana Orthopedics from Jan 2003 to March 31, 2003 under Dr. Edward VA Lim. His latest fellowship is in shoulder arthroscopy, Seoul National University Bundang Hospital.

He is an active consultant at Asian Hospital and Medical Center, Mary Mediatrix Medical Center, Lipa Medix Medical Center and Daniel M. Mercado Medical Center.

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### MANOLITO M. FLAVIER

Ateneo de Manila University is where Dr. Flavier took his elementary and high school; he had his Pre Medical (BS Biology) and Medical education at the University of Santo Tomas. He had his Internship at the Santo Tomas University Hospital and was awarded as an outstanding intern. He finished his residency training in orthopedics at the Philippine Orthopedic Center (POC) and is currently employed as a Consultant.

Dr. Flavier took General Orthopaedics and Joint Replacement Surgery at the Christ Hospital in 2008 in Cincinnati, Ohio, USA

Dr. Flavier is a Medical Specialist I, a Consultant of the Trauma Service V and member of the research committee in POC. He is also the Country Representative of AO Trauma Asia Pacific on Research. He is also a HEMS Coordinator.



medical internship at the UP-PGH and had his orthopedic residency at the Department of Orthopedics of the same hospital. He had his fellowship in Total Joint Replacement and Biomechanics at the Hennepin County Medical Center, Minneapolis, MN in 1992-1994.

Dr. Guloy currently chairs the Department of Orthopedic Surgery since 2008; Section Head of the Total Joint Replacement Service of the Department of Orthopedics since 2005; and Chairman of the OR Committee of the Asian Hospital and Medical Center. He had been the Section Head of the Total Joint Replacement, Institute of Orthopedics and Sports Medicine at the St. Luke's Medical Center and had been an Anatomy Instructor, Department of Physical Therapy of the Delos Santos Medical Center.

Dr. Guloy received a lot of honors for the researches presented during annual case presentations. He was a past president (2006 & 2007) of the POA South Luzon Chapter; a member of the Philippine Hip & Knee Society and an international member of the AAOS. His publications include: Patellar button size in primary total knee arthroplasty, *Journal of Orthopedic Surgery*, 4(1) June 1996, page 35-40; Composite models of the proximal femur of 15 adult Filipinos, *Philippine Journal of Orthopedics*, December 1991; and Measurements and correlation analysis of the adult Filipino femur, *Philippine Journal of Orthopedics*, December 1990.

### MARIO B. GERONILLA

Dr. Mario B. Geronilla finished his Doctor of Medicine at the College of Medicine University of the Philippines and had his Rotating Internship at the UP-PGH Medical Center he pursued his career in orthopedics through his residency training with the Department of Orthopedics, UP - PGH Medical Center. He had his fellowship

at the University of Minnesota, USA; had fellowship in Multiple Trauma at the St. Paul Ramsey Hospital; Joint Replacement Surgery Hennepin County Medical Center, Metropolitan Medical Center, Minneapolis, Minnesota.

Dr. Geronilla is a past president of the Philippine Orthopaedic Association, Philippine Board of Orthopaedics and Philippine Orthopaedic Trauma Society. He is also a trustee of the POA Foundation, Inc. he is a very active fellow of the POA and is a member of a lot of committees/societies within and outside POA.

Currently, he is the Chairman, Department of Orthopedics, Philippine General Hospital; Capitol Medical Center, Section Chief; Cardinal Santos Medical Center; San Juan de Dios Hospital; and East Avenue Medical Center.

### ILUSTRE I. GULOY, JR.

Dr. Ilustre I. Guloy, Jr. specializes in Hip and Knee Joint Replacement Surgery. He finished his Bachelor of Science in Biology at the University of the Philippines (UP) Diliman and medical degree at the UP-Philippine General Hospital (PGH). He had his



### JUANITO S. JAVIER

Dr. Juanito S. Javier is presently the President of the Pediatric Orthopaedics Society of the Philippine. He is also the Head of the Pediatric Orthopaedic Section, Department of Orthopaedics, University of the Philippines - Philippine General Hospital. He is also the Senior Consultant of the Ilizarov

and Limb Reconstruction Service of the same institute. He is the founding president of the Association for the Study and Application of the Methods of Ilizarov (ASAMI) Philippines. He was a former president of the ASEAN- ASAMI. He is an Associate Editor of the Philippine Journal of Surgical Subspecialties and a reviewer for the *Acta Medica Philippina*. He finished his medical degree at the College of Medicine, University of the Philippines. He also received his Master in Orthopaedic Surgery (MChOrth) from the University of Liverpool. He obtained his training in General Orthopaedics at the Philippine General Hospital. He had further training at the Royal Hospital for Sick Children in Yorkhill, Glasgow, Glasgow Royal Infirmary and the Countess of Chester Hospitals. He also trained in Advanced Ilizarov (Limb Reconstruction and Lengthening) Surgery at Lecco, Italy.

## JOSE ANTHONY Q. JOCSON

Dr. Jose Anthony Q. Jocson finished his grade and high school years at the Ateneo De Manila. He was cum Laude in B.S. Zoology at the University of the Philippines-Diliman and took his medical degree at the UP College of Medicine and had his residency at the Department of Orthopedics, UP-Philippine General Hospital. He was a Registrar of the Shoulder and Elbow Unit at the Nuffield Orthopaedic Centre, University Of Oxford.



He is currently an Associate Professor in Orthopedics at the Department of Orthopedics, UP College of Medicine-Philippine General Hospital and Associate Professor at the Ateneo School of Medicine and Public Health. He is also an Associate Professor and Section Head of Orthopedics at the San Beda College of Medicine. He was a past president of the Philippine Shoulder Society and Philippine Society of Emergency Care Physicians, Inc.

He is currently an attending orthopedic surgeon at the Philippine General Hospital, University of Perpetual Help-DALTA Medical Center-Las Piñas, Medical Center Manila and Asian Hospital and Medical Center

Dr. Jocson is married for the past 16 years to Irene Ibarrola-Jocson, an ophthalmologist and has three children- Bea, 15 years old; Pael, 12 years old; Carmen, 5 years old. His Greatest Recent Accomplishment was completing his first full marathon (42.195 km, MAY, 2010).



## LIBERATO ANTONIO C. LEAGOGO

Dr. Liberato Antonio C. Leagogo, Jr. completed his elementary and high school education at the La Salle Greenhills and pursued his pre-medicine at the University of the Philippines (UP) and degree in medicine at the UP College of Medicine. He had his medical internship at the UP-Philippine General

Hospital (PGH) and orthopedic residency at the Department of Orthopedics of the same hospital. He also had his post-graduate training in Traumatology and Total Joint Replacement at the Departments of Orthopedics, Hennepin County Medical Center-University of Minnesota, USA in 1985-1986.

He is currently an Associate Professor VII at the UPCM-PGH ; an active staff at the Cardinal Santos Medical Center, UP-PGH Medical Center and Medical City, He is an Associate of the Philippine Orthopedic Institute, Inc. and an Active Associate of the Makati Medical Center. He is also a Visiting staff of the Asian Hospital and Medical Center.

Dr. Leagogo is the current Chairman of the Department of Orthopedics, Makati Medical Center since 2008. He is also

the Section Chief of the Adult Section, Department of Orthopedics, UP-PGH since 2007. He was also Section Chief of the Trauma Section, Department of Orthopedics, UP PGH from 1998- 2007. He was a past president of the Philippine Hip and Knee Society from 2001-2002 and had been a PRO of the Philippine Orthopaedic Society for Sports Medicine in 1998.

He had numerous honors and citations as well as authored and co-authored research papers, publications, and had attended local and international seminars, meetings and workshops. He is a member of the Mu Sigma Phi Fraternity, Philippine General Hospital Physician's Association, Philippine Medical Association - Makati City Chapter and a Charter Member of the Philippine Orthopedic Society for Sports Medicine. He is a founding member of the Philippine Orthopaedic Trauma Society and a member of the Philippine Hip and Knee Society and Tissue Banking Society of the Philippines. His International memberships include: Asian Association of Dynamic Osteosynthesis (AADO); Societe International de Chirurgie Orthopedique et De Traumatologia (SICOT); Western Pacific Orthopedic Association (WPOA); Hip Section, WPOA; American Academy of Orthopaedic Surgeons (AAOS).

Dr. Leagogo is married to Librada dela Fuente-Leagogo and with child Alizza Marie.

## ALBERTO MA. V. MOLANO

He took High school, BS Biology and medicine at the University of Santo Tomas. He had numerous awards which include Awardee to the Ten Most Outstanding Student Leaders of the Philippines (1984) and Quezon Awardee for Exemplary Leadership in UST (1985). He had his Orthopedic Surgery Residency at the UST Hospital.

He furthered his education by Training in Arthroscopic Surgery at Placentia Southern California; Fellowship Training in Arthroscopic Surgery, Sports Medicine and Joint Replacement at the Singapore General Hospital; AO Workshop Course (Association for the Study of Internal Fixation), Singapore & AO Advanced Course, Davos, Switzerland; Shoulder Arthroscopy Arthrex Course, Jobe-Kerlan Clinic; AAOS Shoulder Arthroscopy Course, Rosemont, Illinois, USA; Spine Operative Course, De Puy – Johnson & Johnson, Gwangju, South Korea; Joint Replacement and Reconstruction Course, De Puy – Johnson & Johnson Sydney, Australia; AAOS Advanced Shoulder Arthroscopy Course in Rosemont, Illinois; Shoulder and Knee Arthroscopic Surgery Cadaveric Workshop (De-Puy Mitek) Salt Lake City, Utah; and AANA, The Masters Experience in Hip Arthroscopy



Dr. Molano is currently the Chairman of the Department of Orthopaedics and Department of Medical Education, Faculty of Medicine and Surgery at the UST Hospital. He is also the head of the UST Hospital Orthopaedic Care Center and USTH Orthopaedic Learning Center. He is an Associate Professor in

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Orthopedic Surgery of the Faculty of Medicine and Surgery at UST. He is a Master of Health Professions Education, University of the Philippines National Teacher Training Center in Health Professions.

He is currently the President of the Philippine Shoulder Society. He is an active consultant at the University of Santo Tomas Hospital, Cardinal Santos Medical Center and Asian Hospital. He had been chairman and course director for numerous meetings at the USTH. He had undertaken a number of clinical studies and authored a lot of local and international researches.



### MANUEL V. PECSON III

Dr. Manuel V. Pecson III is a BS Biology Graduate at the De La Salle University and had his MD Degree at the University of the East Ramon M. Magsaysay Memorial Medical Center. He finished his orthopedic residency at the Makati Medical Center and had his fellowship in Sports Medicine at the Singapore General Hospital. Dr.

Pecson is currently an Active Staff at the Asian Hospital and Medical Center; a Consultant Staff at the Philippine Orthopaedic Institute/Makati Medical Center

### ESTER Z. GONZALES-PENSERGA

She is a graduate of the Cebu Institute of Medicine, Class 1981, and took up her residency in Internal Medicine in the same institution. She pursued her subspecialty training in Rheumatology in the University of the Philippines – Philippine General Hospital and later took a rotation in Washington University Hospital in St. Louis, Missouri in 1988. She then assumed a faculty position in the University of the Philippines College of Medicine. She pursued further studies in Biochemistry in the UP College of Medicine Post Graduate School and graduated in 2002 with a Certificate in Biochemistry.

Her line of interest is osteoarthritis and rheumatoid arthritis for which she has presented and published papers locally and internationally. She continues to do research in other rheumatologic conditions like SLE, osteoporosis, ankylosing spondylitis and the vasculitides. Among her current projects are: Osteoarthritis Special Interest Group of the Philippine Rheumatology Association, the clinical practice guidelines for the treatment of knee Osteoarthritis and the UP Rheumatoid Arthritis Database and Registry (UP RADAR).

Dr. Penserga is currently an Associate Professor at the University of the Philippines College of Medicine; Section Head, Section of Rheumatology, UP-PGH; Active Consultant, San Juan de Dios Hospital; Medical Specialist III, East Avenue



Medical Center; Member, Osteoarthritis Research Society International, Member, Osteoporosis Society of the Philippines Foundation, Inc.; and a Certified Clinical Densitometrist. She is a Fellow and Past President of the Philippine Rheumatology Association and a Fellow of the Philippine College of Physicians



### ANTONIO A. RIVERA

Dr. Antonio A. Rivera, year 1998 president of the POA, took up grade school, high school college and pre-med at the Ateneo De Manila University and Medicine at UP Manila. He had a straight Surgical Internship and General Surgery Internship at the Harlem Hospital Center in New York, USA. He had Orthopedic Residency

training at the University of Cincinnati, Cincinnati, Ohio and had a Spine Fellowship at the University of Hong Kong.

He has licensures with the Ohio Board of medical Examiners, USA and with the Philippine Board of Medical Examiners. Besides being a Diplomate of the PBO, he is also a Diplomate of the American Board of Orthopaedic Surgery. His international memberships include: American Orthopaedic Society for Sports Medicine (Fellow); American College of Surgeons (Fellow); ASEAN Orthopaedic Association; Asia-Pacific Orthopaedic Association (APOA, formerly WPOA); Association of Surgeons of Southeast Asia; American Academy of Orthopaedic Surgeons (International Affiliate Member). He is also a Founding member of: Asian Federation of Sports Medicine; Knee & Orthopaedic Sports Medicine Section, WPOA; Asian Shoulder Association; International Association for Dance Medicine & Sciences; and the Asia Pacific Orthopaedic Society for Sports Medicine.

Dr. Rivera is currently having his private practice at the Makati Medical Center, Cardinal Santos Medical Center (previous Medical Director) and Asian Hospital Medical Center (previous Medical Director)

### BEE GIOK K. TAN-SALES, MD

Dr. Bee Giok Tan-Sales, is a Diplomate of the Philippine Board of Rehabilitation Medicine and American College of Sports Medicine. She is a Fellow of the Philippine Academy of Rehabilitation Medicine and has an MBA degree in health at the Ateneo Graduate School of Business, a Certified Clinical Densitometrist (CCD) BMD and a reader of the International Society of Clinical Densitometry.



She finished Doctor of Medicine at the Faculty of Medicine and Surgery and residency training at the Department of Rehabilitation Medicine, University of Santo Tomas (UST).

She had his fellowship in Pediatric Rehabilitation Medicine at the New York University Medical Center.

She is currently an Associate Professor and Chairman of the Department of Rehabilitation Medicine, UST Faculty of Medicine and Surgery. She is also the Section Chief of the Section of Physical Rehabilitation and Sports Medicine at the San Juan de Dios Hospital. She is an Active Medical Staff in UST and Cardinal Santos Memorial Hospital and Unit Head of the Bone Densitometry Unit, Cardinal Santos Medical Center.

Dr. Tan Sales is the founding president of the Philippine Society of Clinical Musculoskeletal Ultrasonology and Founding Dean of the College of Physical Therapy in San Juan De Dios. Her past positions include: Chairperson, Board of Examiner, Philippine Board of Rehabilitation Medicine (2003 up to 2006); President, Philippine Academy of rehabilitation Medicine (1999-2000); President, Sports Medicine Association of the Philippines (1989-1991); Treasurer, Asian Federation of Sports Medicine (1992 to 1996); and Chairman, XVI SEA Games Medical Committee, Philippines (November 24-December 5, 1991)



#### JOSE ANTONIO G. SAN JUAN

Dr. San Juan is currently a Partner of the Cebu Orthopaedic Institute and the Training Officer of the Department of Orthopaedics at the Chong Hua Hospital in Cebu City. He is affiliated with other hospitals which includes the Vicente Sotto Memorial Medical Center, Cebu Doctors' University Hospital and Perpetual Succour Hospital.

He had his Medical Education at the UP College of Medicine, Class of 1994. He finished his residency training in orthopedics at the UP-PGH Department of Orthopaedics and was chief resident in 1999. He furthered his study by taking up hi fellowship training in Joint Reconstruction and Arthroscopic Surgery at the Flinders Medical Center-Repatriation General Hospital in Adelaide, South Australia (2000) and at the University of Cincinnati Medical Center in Cincinnati, Ohio, USA (2001).

Dr. San Juan served as President of the POA Central Eastern Visayas Chapter in 2006 and had been a Board of Trustees (Visayas Representative) of the POA in 2008.

He is also a member of the Philippine Hip and Knee Society, Philippine Orthopaedic Society for Sports Medicine, Philippine Orthopaedic Trauma Society and an International Affiliate Member of the American Academy of Orthopaedic Surgeons. His special interests include: J o i n t Reconstruction (Primary and Revision Joint Replacement); Arthroscopic Surgery (ACL Reconstruction); Pelvic and Acetabular Fractures; and Multimodal Analgesia in Orthopaedic Surgery

#### DR. JONATHAN N. SEMBRANO

Dr. Jonathan N. Sembrano MD currently is an Assistant Professor in Orthopaedic Surgery at the University of Minnesota Medical School and a staff surgeon at the Minneapolis VA Medical Center. His main practice is spine surgery, with special research interest in minimally-invasive surgical techniques, computer navigation, and advanced intraoperative imaging. He graduated from medical school at the University of the Philippines – Manila, and finished orthopaedic residency training at the Philippine General Hospital. He then completed clinical fellowship training in spine surgery (Twin Cities Spine Center, Minneapolis, MN), pediatric orthopaedic surgery (Shriners Hospital, Portland, OR), and adult reconstruction (University of Minnesota, Minneapolis, MN).



#### CARLO EMMANUEL JOSON SUMPAICO

Dr. Carlo Emmanuel J. Sumpaico has Full Registration with the General Medical Council, United Kingdom since 2007-2009. He had his medical degree in the University of the Philippines, internship at the UP-Philippine General Hospital (PGH) and orthopedic residency training at the

Department of Orthopedics of the same hospital.

Dr. Sumpaico is currently a consultant at the Department of Orthopedics at the Medical City and PGH. He had also been a Clinical Fellow from February 2007 – March 2008 at the Department of Orthopaedics, Royal Hospital for Sick Children in Glasgow, Scotland. He had also been a consultant at the Caritas Health Clinics and FortMed Clinics and a Chief House Staff in Orthopaedic Surgery at the Asian Hospital and Medical Center.

His research appointment include his membership to the Ethics Review Board (Team A) at Philippine General Hospital and Assistant Vice-Chairman of the Research Committee, Department of Orthopedics, Philippine General Hospital

#### JOSE FERNANDO C. SYQUIA

Dr. Syquia specializes in Arthroscopic Surgery and Joint Replacement and Adult Reconstructive Surgery. He took BS in Physical Therapy at the University of Santo Tomas and graduated Summa cum Laude and pursued his medical degree at the UST Faculty of Medicine and Surgery and graduated Magna cum Laude. He had his Internship at Makati Medical Center and orthopedic residency at the Philippine Orthopedic Center. He has his



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masters degree in Business Administration in Health at the Ateneo Graduate School of Business.

He had his post graduate training in General Orthopedics and Arthroscopy at the Ludwig Maximilian University – Klinikum Grosshadern, Munich, Germany; Orthopedic Trauma and Sports Medicine at the University of Cincinnati Medical Center, Cincinnati, Ohio, USA; Foot and Ankle Surgery at the Center for Orthopedic Care, Cincinnati, Ohio, USA; and Joint Replacement Surgery in Stanford University Medical Center, California, USA

He is currently the President of the Advanced Orthopedics for Joint Replacement. He is the chief of the Section of Joint Replacement Surgery and Section of Orthopedic Trauma at UST Hospital. He is an Assistant Professor 2 and Chairman of the Admissions Committee at the UST Faculty of Medicine and Surgery. He is Chief of the Section of Shoulder and Elbow Surgery at the, Institute of Orthopedics and Sports Medicine, Saint Luke's Medical Center. He is a consultant at the Cardinal Santos Medical Center, University of Santo Tomas Hospital, Makati Medical Center, and St. Luke's medical Center.

Dr. Syquia is a PRO of the Philippine Hip and Knee Society; Board Member of the Philippine Orthopedic Trauma Society; Member of the POA Research Committee; and an Editorial Consultant of the Philippine Journal of Surgical Specialties. He has two publications: Initial Management of Orthopedic Emergencies: A Guide for the Family Physician, Emergency Room Physician, and General Practitioner. UST Publishing House, 2003 and Understanding Total Joint Replacement: The Hip and the Knee. UST Publishing House, 2005.



**ANTONIO N. TANCHULING, JR.**

Dr. Antonio N. Tanchuling, Jr. is a Clinical and Research Fellow in Total Joint Replacement Surgery, Minneapolis Orthopedic and Arthritis Institute - University of Minnesota; and Orthopedic Biomechanics Laboratory, Minneapolis, Minnesota, U.S.A. 1995-1997. He is currently the Director of

the Institute of Orthopedics and Sports Medicine, St. Luke's Medical Center, Quezon City. He is also the Head of the Center for Joint Replacement Surgery at the St. Luke's Medical Center, Quezon City and a Staff of the Geriatric Center of the same hospital. He is an Asst. Professor II, Orthopedics, St. Luke's Medical Center-William Quasha Memorial College of Medicine, Quezon City.

Dr. Tanchuling was a Past President (2004-2006) of the Philippine Hip and Knee Society and current Chairman of the Philippine Board of Orthopedics, Inc. He has 61 international and 27 national research journal publications. His research interests are Geriatric orthopedics, Total Joint Replacement and Infections in Orthopedics.

**ERNESTO C. TENORIO, JR.**



Dr. Ernesto C. Tenorio, Jr. is a graduate of the University Santo Tomas Faculty of Medicine and Surgery and finished his residency training at the Philippine Orthopaedic Center. He took his AO-MIO course at the Maharaj Nakorn Chiang Mai University Hospital, Chiang Mai, Thailand May 2006. Currently, he is the community development officer of AO Trauma Philippine chapter and an active AO Trauma faculty here and abroad. He is the chairman of the department of Orthopaedic Surgery Taal Polymedic Hospital and Medical Center and Tagaytay Hospital and Medical Center. He is also an active consultant at the Our Lady of Caysasay Medical Center, Medical Center Western Batangas, NL Villa Memorial Medical Center and United Doctors Medical Center.



**MELECIA ANTONIO VELMONTE**

Dr. Melecia Antonio Velmonte is a Professor Emeritus of the University of the Philippines College of Medicine. She is a Fellow of the Philippine Society of Microbiology and Infectious Diseases. She is also the Founder of the Philippines Hospital Infection Control Society. She is an Infectious Disease Consultant at the Manila

Doctors Hospital and Capitol Medical Center.

**JULIE T. LI-YU**

Dr. Julie T. Li-Yu is an Associate Professor at the University of Santo Tomas Faculty of Medicine and Surgery. She took her Masters of Science in Public Health, Major in Biostatistics at the University of the Philippines, College of Public Health. She currently heads the Joint and Bone Center – UST Hospital. She is Chief of the Section of Rheumatology –



Chinese General Hospital & Medical Center; Chairman of the Research Committee, UST and Chinese General Hospital and Medical center (CGHMC) Department of Medicine; Chairman of the Postgraduate Internship Committee, CGHMC. She is a Certified Clinical Densitometrist – International Society for Clinical Densitometry (ISCD). She is a Board Member of the Osteoporosis Society of the Philippines Foundation, Inc. (OSPFI) and Rheumatology Educational Trust Foundation, Inc. and Philippine Rheumatology Association. She has several research publications on the topics of osteoporosis, gout, systemic lupus erythematosus and other rheumatic conditions.

## POA 61ST ANNUAL CONGRESS ABSTRACTS

### **The Bone and Joint Decades: 2010 and Beyond - an Unfinished Business**

*Ester G Penserga, MD, for the Philippine Rheumatology Association, Member, Philippine Council for the Bone and Joint Decade*

The Bone and Joint Decade (BJD) is a global movement, proclaimed by the World Health Organization declaring that the first ten years of the 21<sup>st</sup> century be directed at bringing awareness to bone and joint diseases, their effects on the individual and society and to encourage research in the field, aiming at the widest spectrum of issues, from medical education, lay and patient concerns on treatment, self help programs and advocacy. All sectors of society, including government was encouraged to adapt and participate through voluntary and innovative efforts to bring BJD goals to reality in the unique settings of each nation and its people.

The Philippines responded to the call, with five specialty organizations, namely, the Philippine Rheumatology Association, Philippine Academy of Rehabilitation Medicine, Arthritis Care & Research Foundation of the Philippines, Osteoporosis Society of the Philippines Foundation, Inc. and the Philippine Orthopaedic Association, forming the Philippine Council for the Bone and Joint Decade (PCBJD) in the year 2000. The collective work resulted in the Philippine government's recognition of the BJD on July 5, 2004 through Presidential Proclamation 657 declaring the Bone and Joint Decade in the Philippines. It became the 54th government worldwide to recognize the BJD initiative.

The PCBJD started yearly nationwide awareness programs since its inception in 2000. Major cities in the country – Iloilo, Bacolod, Davao, Cebu and Cagayan de Oro City soon actively initiated public awareness campaigns with mass media and local government participation. The In-office Exercise program, 3pm Banat Buto, a major output, was introduced to big government and private offices for integration into their health programs. The PCBJD, likewise, got involved in launching the Road Trauma Prevention program, which was presented to the Metro Manila Development Authority. In these different projects, patient groups and pharmaceutical companies helped. The PCBJD was likewise represented in international meetings of the BJD, together with patient representatives. Abroad, similar projects materialized, notably, educational materials of Japan using the “manga” comics concept, the Netherlands’ project on improving medical curriculum on the diseases, Canada’s on line programs on exercises, among others. More than 100 governments worldwide have declared the BJD in their respective countries.

2010 marks the last year of the first decade of the BJD. For all the good intentions and the cohesive work done by the PCBJD, we see so much work still needs to be done, and several issues that have to be pursued. Similar to other member countries, including developed nations, engagement with government should be optimized. The Philippine public health priority still hinges on infectious diseases, cardiovascular diseases and cancer. Musculoskeletal diseases rank low in priority. Sustaining the programs that have been started, finding funds with which to

embark on landmark researches on musculoskeletal diseases are among the unfinished work. Despite these odds, we in the PCBJD will present and turn over to the next generation of advocates these programs to pursue, and build upon, so that the Filipino patient with bone and joint diseases can be fully managed and served.

### **Recognition of Soft Tissue Sarcomas: History, Physical Examination and Diagnostic Modalities**

*Delfin D De Vera, Jr, MD, FPOA*

Differentiating soft tissue mass symptoms from those of more common and self-limiting processes can be difficult. Careful attention to detail in the initial history and physical examination can help identify those patients appropriate for more aggressive early screening studies. Early detection of both primary and metastatic soft tissue lesions is important because tumor size and pretreatment status are important variables that affect patient outcome. Delayed diagnoses should be minimized, if possible; however, evaluation need not be at the expense of appropriate, rational, and cost effective medical care.

Current imaging techniques have markedly improved our ability to evaluate soft-tissue tumors. Despite these improved modalities, the ultimate goal of imaging remains unchanged: detecting the suspected lesion and establishing a diagnosis or, more frequently, formulating an appropriate differential diagnosis, and radiologic staging of a lesion. This lecture is not intended as a summary of the radiologic manifestations of soft-tissue tumors, but will present a systematic approach to evaluation, emphasizing in differentiating benign from malignant soft-tissue lesions.

### **Complications and Pitfalls in the Management of Soft Tissue Tumors**

*Rafael S. Claudio, MD, FPOA, MBA-H*

While soft tissue tumors are extremely common, soft tissue sarcomas are relatively rare, thus easily lending themselves to complications in management. Complications arise from errors in diagnosis and deficiencies in proper planning or execution of treatment. Mistaking malignant lesions for benign ones are the most common diagnostic pitfalls and often leads to disastrous consequences, usually due to inadequate surgery. Untoward outcomes include local and systemic spread, unnecessary amputation, and inoperability.

Complications of surgical treatment frequently involve unsatisfactory oncologic margins and local recurrence, wound closure and healing problems, infection, and neuro-vascular injury. Additional local complications, such as fibrosis, skin necrosis and contiguous joint stiffness, commonly arise from adjuvant irradiation of surgical sites.

Routine re-excision with wide margins is advocated for inadequately excised malignant tumors. Accurate pre-operative

tumor imaging is imperative. A multi-disciplinary surgical team, including a plastic and a vascular surgeon, may be required for complex, recurrent cases. Post-operative radiotherapy is employed to augment surgical margins when deemed inadequate. Amputation is a final recourse when other efforts to address complications prove futile.

Adherence to the principles of tumor surgery, as well as close cooperation with the radiologist, pathologist and adjunct surgical specialists, provide the best preventive measures against pitfalls in soft-tissue sarcoma management.

### History and Natural History of Legg-Calve-Perthes Disease

*Carlo Emmanuel J. Sumpaico, MD, FPOA*

Three authors in 1910 described the same “bony affliction” simultaneously yet individually. 100 years later, this same “bony affliction” (Legg-Calve-Perthes disease) still baffles the orthopedic surgeon. First part of the lecture gives us an insight as to who Arthur Legg, Jacques Calve and Georg Perthes were. The second part deals with the natural history of the disease, with emphasis on incidence, etiology and classification.

### Basal Joint Arthritis

*Looi Kok Poh, MD*

Osteoarthritis of the thumb trapeziometacarpal joint is a common clinical problem. One thing is indisputable: basal joint osteoarthritis of the thumb has many different clinical presentations, and one technique cannot be used for all of the different stages and all patients’ individual needs. When conservative treatment has been exhausted, there are a wide range of surgical options to choose from. Treatment should be tailored to the individual patient.

The early stages of basal joint osteoarthritis are most commonly seen in middle-aged women. The use of anti-inflammatories, splinting and corticosteroid injections serve only as palliative measures. Only the mildest cases of transient synovitis will escape the inevitable progressive loss of cartilage and hence the need for surgical treatment.

Classically, the basal joint has been treated by surgical means only when conservative options have been exhausted. The principal option has been, and remains, some type of open resectional arthroplasty.

Earlier stages demand a more conservative option that allows for future interventions if the primary treatment is not successful. Metacarpal Osteotomy and Arthroscopic approaches are excellent in these stages where joint debridement, synovectomy and capsulorrhaphy can be done through a few punctures. Even in more advance stages, partial trapeziectomy and interposition arthroplasty can be arthroscopically achieved.

In advanced stages, resection of trapezium, and ligament reconstruction with interposition arthroplasty are worthy choices to consider. Other options, include arthrodesis, which can provide

excellent pain relief but has the obvious limitation of loss of motion, or joint replacement. The author will discuss the merits of each of these options.

### Wrist Arthrodesis and Arthroplasty

*Looi Kok Poh, MD*

For decades, wrist arthrodesis and arthroplasty have been considered reliable procedures for the treatment of arthritic wrists. Their main aim is to achieve pain relief and secondary objective to preserve motion and stability.

Wrist arthrodesis provides complete pain relief and stability at the expense of all wrist function. Total wrist arthroplasty preserves some function of the wrists to enhance performance of the wrist while providing some stability of the wrist. There is always a risk of implant failure and consequent need of revision surgery.

Partial wrist arthrodesis or limited wrist fusion aims to provide pain free stable wrist construct and still preserve motion through intact joints. Isolating the particular arthritic articulation in the multiplanar wrist joint is pertinent so that only the affected joint is fused. A stable and functional wrist can be restored while eradicating pain from the affected joint.

Generally with adaptive motion or adequate compensatory maneuvers, activities of daily living can be performed without difficulty or assistance. This will certainly have a positive impact in the quality of patient’s life.

To appreciate the principles of the various types of limited fusion, an understanding of the intricate anatomy and biomechanics is pertinent. The author will discuss the diagnosis, indications and management strategies of the various approaches.

### Finger osteoarthritis: Current Status of and Issues in Diagnosis and Treatment

*Noel B. Carilo, MD, FPOA*

The lecture will give a general overview of finger osteoarthritis, the current basis for diagnosis, and the current trends in pharmacologic, surgical, and rehabilitative treatment. The talk will include common pragmatic approaches to treatment that will be evaluated based on current available evidences.

This session will answer the question “are we scientifically supported with what we are doing in treating our patients with finger osteoarthritis?” Sample cases will be elaborated.

### Fragility Hip Fractures: The (Not So) Simple Truth

*Mohit Bhandari MD, PhD, FRCSC*

Hip fractures are associated with a 30% mortality rate at 1 year and profound temporary, and sometimes permanent, impairment of independence and quality of life. Furthermore, approximately 30% of surgically treated hip fractures require revision surgery. These revisions are associated with a large

burden of morbidity and mortality. The disability adjusted life-years lost as a result of hip fractures ranks in the top 10 of all cause disability globally. While there is general consensus regarding the operative management of non-displaced fractures of the femoral neck, the optimal choice for the stabilization of displaced femoral neck fractures remains controversial. Several key issues including optimal surgical treatment, consequences of treatment and future opportunities for research are presented.

### **Operative Treatment of Trochanteric Hip Fractures, Role of IM Nails & Post Hip Fracture Rehabilitation**

*Mellick J Chehade*

With an increasing aged population the incidence of fragility hip fractures has increased dramatically and is expected to continue to do so until beyond 2050 in the Asian region. Effective and efficient acute management and rehabilitation measures are critical. The evidence for “best practice” is either lacking or conflicting in many areas. This includes the role of IM nails in hip fractures. This is in part because of the confounding effect of medical co morbidities and the lack of appropriate outcome measures. Because of both resource limitations and awareness of effectiveness, current rehabilitation practice often falls well short of its true potential. All of these issues require attention if management is to be optimised.

### **End of life decisions and Hip Fracture**

*Mellick J Chehade*

Mortality after hip fracture averages around 25-30% at one year overall however in some subgroups mortality greatly exceeds this within the first few months. The preinjury level of function varies from fully independent and living at home to totally dependent and bed-bound. Clearly the management objectives in these groups are different yet in most western and well resourced institutions the default position is for operative management. Even when the management goals of these patients are judged to be palliative, acute care and operative treatment usually results. The primary goals of surgery are the relief of pain and restoration of function. Functional recovery is not always possible and effective non operative modalities exist that may be employed to address pain. The financial costs of surgery and hospitalisation are also very high. A much more considered approach is required if management is to be optimised. This includes the promotion of legally sound “advanced directives” to allow the patient’s expressed wishes regarding “end of life” decisions to be determined prior to their loss of capacity. There is also the need for a greater understanding of the role of non operative palliative care measures and how these may be instituted. Importantly an attitudinal change is required by health professionals and our societies that fail to recognise that the provision of acute hospital based care and surgery may come at an unacceptably high price including additional emotional and financial stresses to patients and their families. Our primary objective must be to facilitate “death with dignity” which does not always require hospitalisation and surgical intervention and in some cases may be hindered by it.

### **Pre-Participation Evaluation for Sports in the Elderly**

*Svetlana Maris O. Aycardo*

Regular exercise has been proven to decrease mortality and age related morbidity in older adults. However, before initiating a program, most older adults should undergo a history and physical examination. The purpose of pre-participation evaluation is not to exclude one from exercise or sports but to promote safe participation in sports or exercise.

It is recommended that older individuals should obtain a medical clearance from their physician prior to maximal exercise testing and before their participation in vigorous exercise. In addition, health screening of the participant should be conducted in order to optimize safety during exercise testing and participation to be able to develop an individualized, safe and effective exercise prescription.

After the completed health screening, the participant should have a pre-participation evaluation which will provide a baseline measure of body composition, cardiovascular endurance, flexibility, and muscle strength. The protocols for testing older individuals need to be modified for any special needs they may have.

### **Sports Rehabilitation in elderly**

*Bee Giok K. Tan-Sales, MD, FACSM, FPARM, MBAH, CCD*

Ageing population, improved health care, and increased longevity, lead to increased elderly population. In the Philippines, people over 60 yrs old are 6.0 to 6.7% (6.3 million) of the total population (94 M) as of 2010. In 2030, the elderly population is projected to rise to 14.3 M. Ageing is inevitable and ageing successfully is a choice. Individuals who chose to age successfully inevitably engaged in sports, exercise and physical activity. Life-long physical activity becomes a reality to enhance quality of life. Individual who engaged in sports at younger age and sustains it through old age reaps the maximum benefits of exercise. While healthcare practitioners advocate sports for all, inappropriate exercise or over exercise oftentimes lead to injury most specially the at risk population — the elderly.

The incidence of sports injuries cited and the differences in physiologic responses in exercise that will influence the approach to sports injury rehabilitation will be discussed.

### **The Philippine Knee Ligament Registry: Results of the Cebu Pilot Study**

*Jose Antonio San Juan, MD, FPOA, Raymond Gomez, MD, Alvin Adolfo, OTRP*

Long term outcomes of Orthopaedic Procedures or Techniques serve as a guide as to whether we need to improve on how we perform surgeries, how we select our patients and what implants or technology we use. To be able to evaluate well such outcomes, we need adequate numbers and a uniform way of evaluating the techniques and the patients. The Philippine Orthopaedic Society for Sports Medicine thus embarked on this project, the Philippine Knee Ligament Registry to be able to address these

issues in our setting. A Pilot Study was conducted in Cebu from March – October 2010 to test run the mechanics of the Registry and compliance to the protocol. Based on the initial results of this Pilot Study, we believe that the PKLR is sustainable and an efficient way of providing long term results of our knee ligament surgeries.

### **Arthroscopic Rotator Cuff Repair**

*Alberto Ma. V. Molano, MD, FPOA, MHPEd*

The age of the shoulder is upon us, numerous researches have been recently published which has led to our further understanding of this unique joint. The arthroscopic treatment of rotator cuff tears is now de rigueur in advanced countries, the speaker will present the most recent basic and clinical evidence that support the early arthroscopic treatment of rotator cuff tears.

### **Mini-Open Roator Cuff Repair**

*Antonio A. Rivera, MD, FPOA*

The principles of diagnosis of a rotator cuff tear have been well elucidated. In this symposium, two approaches to rotator cuff tear are discussed. This paper discusses the Mini-open Approach. The standard open approach is through an anterior longitudinal, deltoid splitting incision, through which both the anterior acromioplasty and the rotator cuff repair are done under direct vision. The Mini-open approach presupposes an Arthroscopic evaluation and subacromial debridement and decompression as needed, and the so-called mini-open incision is a 2-3 cm extension of the lateral portal. The rotator cuff tear is visualized and repaired under direct vision.

The principles of repair are similar in all approaches. Arthroscopic repair requires more expertise, while the direct vision afforded by the miniopen approach allows a less experienced surgeon to practice inserting anchors, catching the cuff, and practicing knot-tying. The postoperative outcomes are similar, and related more to the repair than to the approach. More specific advantages and disadvantages of this approach will be discussed.

The mini-open approach is recommended for the surgeon who can perform basic shoulder arthroscopy, yet still unfamiliar with arthroscopic repair techniques. For those with no arthroscopic experience, a well done open decompression and rotator cuff repair will do just as well, albeit with a longer scar and a more painful immediate postoperative course.

### **Proximal Humeral Fractures**

*Jose Nathony Q. Jocson, MD, FPOA*

Proximal humerus fractures are the second most common upper extremity fracture, and the third most common fracture in individuals 65 years and above. It mainly occurs in osteoporotic bone, and although the vast majority of fractures are either undisplaced or minimally-displaced, roughly 20% may need operative treatment. Knowledge of shoulder anatomy and a thorough understanding of the deforming forces acting on the

various fragments are essential in the management of these fractures. Operative management may require ORIF or arthroplasty. The goal of treatment is a pain-free, functional upper extremity.

### **The Stiff Shoulder**

*Albert Cesar S. Faller, MD, FPOA*

Idiopathic adhesive capsulitis of the shoulder was first described by Duplay in 1834, is a common cause of shoulder pain and disability. It is estimated to affect 2–5% of the general population and 10–20% of people with diabetes. Appropriate treatment is dependent on an accurate diagnosis and understanding of the specific pathoanatomy. In this lecture, we will outline the various anatomic causes of shoulder stiffness and provide a guide for clinical diagnosis and treatment.

### **Intracapsular Hip Fractures in the Elderly**

*Jose Fernando C. Syquia, MD, FPOA*

In this talk, we will focus on the femoral neck fracture. This fracture is common in the elderly population due to the prevalence of osteoporosis in this age group. It is often due to a low-energy injury, such as a fall from a standing position. These fractures may be displaced or undisplaced. An x-ray of the hip is often enough to confirm the diagnosis; however, in some cases, a bone scan or even an MRI may be needed to make the diagnosis of an occult fracture. Undisplaced fractures may be treated with internal fixation devices. On the other hand, the treatment for displaced fractures in the elderly is controversial. Most studies would recommend some form of arthroplasty.

### **Distal Femoral Fractures**

*Ernesto C. Tenorio, Jr., MD, FPOA*

Distal femur fractures can result from either high energy trauma or low energy trauma. High energy trauma such as motor vehicle accidents, sports and pedestrian accidents are more likely in men ages 15-50, whereas low energy trauma such as falls from standing height at home are more likely to lead to distal femur fractures in women aged 50 or more years. In these older adults distal femur fractures may result from osteoporotic conditions. The osteoporosis leads to comminution and may pose problems for fixation. Treatment of distal femur fractures has evolved over the years, but despite this, they remain difficult to treat and carry an unpredictable prognosis. Distal femur fractures can be a cause of severe permanent disability if misalignment or limb shortening occur or if the knee is affected due to instability or reduced range motion.

### **Displaced Acute Femoral Neck Fractures In the Elderly: To Fix**

*Jose Fernando C. Syquia, MD, FPOA*

Current literature recommends that arthroplasty is the better option when dealing with displaced femoral neck fractures in the elderly, whether the fracture is acute or not. Internal fixation

has a role in the treatment of undisplaced intracapsular hip fractures. Although there was a higher reoperation rate when compared to arthroplasty, internal fixation for undisplaced fractures resulted in a shorter operation time, shorter hospital stay, lower incidence of perioperative complications, and a lower one-year mortality rate.

### Acute Femoral Neck Fractures in the Elderly

*Manolito M. Flavier, MD, FPOA*

Femoral neck fractures are common in the elderly, usually secondary to a fall and with the growing elderly population, Hip fractures are expected to be more common. Current operative management ranges from internal fixation to arthroplasty. There are however several issues with regards to management of displaced femoral neck fractures. Considerations to include are the physiologic age of the patient rather than the chronologic age, their level of activity as well as the patient's medical condition. Hemiarthroplasty still has its indications, namely, for patients with lower functional demands, older physiologic age and a normal hip joint. Whether to use a unipolar or a bipolar, literature shows that there is no difference in dislocation, acetabular erosion, reoperation, DVT and walking. On the issue of using a cemented or cementless stem, cemented stems are associated with less pain and lower revision with the advantage of immediate stability but with the risk of sudden death. The problem with hemiarthroplasty is the issue with acetabular erosion, lower functional scores and longevity as compared with Total hip replacement.

### The Treatment of Displaced Fractures of the Femoral Neck in the Elderly: The Use of Total Hip Replacement for these Fractures

*Liberato Antonio C. Leagogo, Jr., MD, FPOA*

There is no question that for the young patients with displaced femoral neck fractures, closed reduction or open reduction and internal fixation is the treatment of choice at this time. The femoral neck fracture should be given a chance to heal.

However, for the elderly patients, the alternative is either a hemiarthroplasty or a total hip replacement. The Philippine Orthopaedic Association came out with a clinical practice guideline recently outlining the different methods of fixing femoral neck fractures for the young and elderly patients. The latter is defined as those who are 60 years old and beyond.

We believe that the term elderly is of two classes: the old and the young ones. The old patients who have poor cognition, dependent, with grave co-morbidities and with limited function should be treated with a hemiarthroplasty. Total hip replacement, on the other hand, would be the better management in the physiologically young elderly who are still active, healthy, independent, and have several years to live. There has been an increasing number of this subset of elderlies because of improved social and medical conditions thus the relevance of this debate.

### Pathophysiology and Management of Degenerative Disk Disease

*Jin-Fu Lin, MD*

The spectrum of degenerative disc disease (DDD) ranges from early disc degeneration in adolescence (juvenile discogenic disease, Fig. 1) to the elderly with or without degenerative scoliosis (Fig. 2. A), and one or more discs may be affected. The etiology of DDD seems to have a genetic predisposition, except iatrogenic adjacent segment disease (ASD), according to identical twins studies and environmental factor is considered playing a lesser role. Abnormal nerve ingrowth in the endplates, inner annulus, and nucleus is thought to be the cause of pain. There is a wide discrepancy between imaging and symptomatology that in patients with similar image findings, the pain intensity varies from minor to excruciating, and it is further confounded by concurrent spinal stenosis and renders diagnosis difficult.



Fig. 1: 18 y, male. Chronic LBP 2 years. Degenerated L5 - S1 disc (arrow).

We arbitrarily classified DDD into two categories: without and with vacuum sign based on images and clinical presentations. 1. Painful DDD without vacuum sign (type 1) usually occurs below 50 years old and rarely above that age. Clinical presentation is chronic fluctuating low back pain (LBP). The pain intensity is increasing in stepwise fashion with time. At the peaks of pain attack, the pain is persistent and the patient cannot tolerate any fixed posture for a few minutes, and even sleep is disturbed; at the lows of pain, the pain becomes tolerable or negligible, but is not completely gone. The durations of the peaks and lows vary from hours, days, or weeks. 2. In painful DDD with vacuum sign (type 2, detected by reformatted CT, Fig. 2A), the mean age of the patients is generally older: above 50 years old. They present with chronic LBP (+/- thigh pain) with claudication in feature that back or thigh pain is aggravated by prolonged standing and walking and relieved by sitting and lying. The clinical pictures are similar to neurogenic claudication of spinal stenosis. We postulate it is due to anterior column insufficiency. In both types, backache may refer below the knee and has been called pseudoradicular pain.

In younger patients, below 50 years old, with type 2 DDD, they may have the same pain pattern of type 1 DDD; beyond that age of type 2 DDD, the pain pattern of type 1 DDD is rarely seen. It is unknown whether the pain pattern may change in the same subjects who have type 1 DDD which transits to type 2 when getting older. It needs a longitudinal study to verify.

Our diagnosis of type 1 DDD is based on typical clinical presentation and compatible to a standard graph of pain pattern (peaks and lows). The efficacy of pain provocation discography is uncertain. Furthermore, it seems no literature had ever mentioned its use in type 2 DDD and we had only one instance of provoked pain in type 2 DDD. In type 2 DDD, spinal stenosis has to be ruled out firstly by using selective nerve block when in doubt. Modic changes of MRI is helpful in localizing the painful disc in type 2 but not type 1 DDD. We use functional analgesic discography in diagnosing type 2 DDD by injecting anesthetic agent to relieve pain (Fig. 2 B); it is ineffective in type 1 DDD and



Fig. 2: 70 y, female. Claudication LBP 5 year . A. Reformatted CT shows vacuum 3-levels vacuum discs with degenerative scoliosis . B. LBP was relieved by L1-2, L2-3 analgesic discography (2 ml bupivacaine) for 1 hour. C. LBP relieved by 2-level arthrodesis.

treatment, canal stenosis should be addressed primarily. Interbody fusion is indicated in intractable, carefully selected cases. We prefer to use lateral retroperitoneal access to minimize tissue trauma; and use of standalone cage supplemented with an intravertebral plate (Fig. 3 B, C) to stabilize the segment without additional screw-based instrumentation to reduce device-related issues.



Fig. 3. 32 Y, F, LBP 5 years. A: 3-level degenerated discs. B,C: underwent lateral fusion, using cage-intravertebral plate device. Preoperative VAS 10 improved to 2.

share with the audience.

### Adjacent Segment Degeneration in the Lumbar Spine: Causes and Surgical Strategies for Prevention

Orso L. Osti, MD

Senior Visiting Spinal Surgeon, Calvary Healthcare North Adelaide, South Australia

Spinal fusion despite ongoing controversy, its' significant associated risks and obvious drawbacks, is increasingly performed for degenerative spinal conditions and due to the explosion of implants and technology, its popularity has continued to grow.

Since the late 1980's however concern has been raised in relation to the potential for the fusion to accelerate naturally occurring degenerative changes at adjacent segments. The issue remains if fusion does significantly alter the natural history of disc

renders the patient more painful. The pitfall is possible false-positive outcomes due to epidural leakage of the anesthetic agent through the torn annulus resulting in minor degree of epidural spinal block that root and disc pain are both masked.

In surgical treatment, canal stenosis should be addressed primarily. Interbody fusion is indicated in intractable, carefully selected cases. We prefer to use lateral retroperitoneal access to minimize tissue trauma; and use of standalone cage supplemented with an intravertebral plate (Fig. 3 B, C) to stabilize the segment without additional screw-based instrumentation to reduce device-related issues.

In conclusion, there are many unresolved issues regarding diagnosis and treatment of DDD which frustrate both parties of patients and healthcare providers. We try to provide a limited scope of clinical experiences to

degeneration. Weinhofer in 1995 had suggested that disc pressure in vitro increased above surgically stabilised segment. Rahm in 1996 published a five year follow of 49 patients after PLIF with a 35% incidence of adjacent segment degeneration (ASD).

Lee Langrana in 1984 concluded that all types of fusion increased stress on adjacent segments especially to the facet joints. Kumar et al in 2001 however suggested that correlation existed between changes in the sagittal planes and ASD after lumbar fusion. This was confirmed by other authors suggesting that loss of segmental lordosis following posterior fusion increased the load on adjacent segments.

This observation is consistent with data from Penta et al which in 1995 reviewed long term follow up of anterior fusion and found ASD only if pre-existing degeneration had been documented at the time of surgery. Transitional syndrome may therefore be prevented by correction of the sagittal deformity at the level of the fusion and above. It is paramount that pre-existing degeneration is identified at adjacent segments when planning to fuse and semi-rigid constructs either stand alone and/or hybrid by unloading the disc but preserving some movement may also be employed for prevention of ASD.

The Adelaide experience with semi-rigid fixation suggests that ASD after Dynesys instrumentation (semi-rigid implants) is much less likely than in similar series following spinal fusion with a rate of no more than 4% at two year follow up compared to rates as high as 40% after fusion with similar follow up.

In my current Practice hybrid instrumentation is routinely used when disc degeneration is present, adjacent to an isthmic and/or degenerative spondylolisthesis.

In conclusion ASD may be limited if accurate restoration of sagittal alignment of fused segment is achieved and pre-existing degeneration of adjacent segment is identified. Hybrid and semi-rigid constructs have an important role to play and have been proved to be effective and safe.

### Long Term Follow Up of Semi-Rigid Instrumentation in the Lumbar Spine

Orso L. Osti, MD

Senior Visiting Spinal Surgeon, Calvary Healthcare North Adelaide, South Australia

**INTRODUCTION:** To investigate the clinical outcomes of semi-rigid (Dynamic) surgical stabilization in the lumbar spine and its long term effects on treated and adjacent discs.

**METHODS:** 25 patients with prevalent leg pain treated with Dynesys instrumentation for degenerative lumbar pathology between 2005 and 2007 by the Senior Author (OLO) were prospectively evaluated. Oswestry disability index (ODI) and visual analogue scale (VAS) were used prior to surgery and at least 12 months after surgery in all patients. Disc degeneration of treated and adjacent discs were examined on pre-op and post-op MRIs by an independent Radiologist and graded using the classification by Boos (Spine 2001).

**RESULTS:** At a median follow up of 19 months, average improvement in the ODI score was 24% (range 10%-58%). VAS for back pain improved from 5 to 3 and for leg pain from 7 to 3. Only 7.5% (3 out of 40) of adjacent discs had deteriorated one grade.

**DISCUSSION:** The two year clinical outcome of semi-rigid stabilization (Dynesys) in this study was comparable to previously published fusion procedures for similar indications. Radiological prospective evaluation of disc morphology in this series suggested that an added advantage of the system was the maintenance of disc height at the operated segment and prevention of disc degeneration at adjacent levels. The semi-rigid system used in this series appeared to be a safe and effective alternative to spinal arthrodesis in selected cases of degenerative lumbar spine pathology.

### Options for Bone Loss Secondary to Osteomyelitis

*Daniel V. Dungca, MD, FPOA*

Chronic osteomyelitis is quite frequently encountered in provincial practice in the Philippines. A number of these cases would consult orthopaedic surgeons only after traditional healing practices like herbal solutions and poultices have failed. They usually present with large sequestered bone segments with varying attempts at involucrum formation. Treatment of these cases would involve not just massive antibiotic dosages but also removal of the sequestered bone segment, leading to bone gaps. Options for reconstructing the bony defects would include bone grafts, synostosis or bypass, and bone transport. Bone grafting would usually suffice for small defects with good soft tissue coverage. Synostosis or bypass bone grafting can be applied for forearm and tibial defects. Bone transport by the Methods of Ilizarov allows for correction of large segment bone defects as well as simultaneous correction of associated deformities and soft tissue loss. The treatment method most applicable for these cases will ultimately depend on locally available resources and the expertise of the treating surgeon.

### Options in the Management of Septic Arthritis Sequelae Using the Ilizarov Method

*Juanito S. Javier, MD, MChOrth, FPOA*

Destruction of the joint is the inevitable consequence of untreated septic arthritis. Salvage procedures are the options left for these cases of septic arthritis. Joint fusion is an option frequently resorted to. The versatility of the Ilizarov fixator allows it to be modified for the different joints in the body and at the same time provides the compression required to increase the rate of joint fusion. In some instances, contracture and even limb shortening accompanies the destruction of the joint. Likewise, the Ilizarov Method could be tailored for these conditions. A unique way of reconstructing a destroyed hip joint, called Pelvic Reconstruction, is described as well.

### Overview of Total Joint Replacement in the Provincial Setting

*Jose Maria R. Coruña, MD, FPOA*

This is my personal experience as an arthroplasty surgeon practicing in Bacolod City. I am both a clinic based as well as training institution based orthopedic surgeon who was given a chance to do fellowship training in arthroplasty and arthroscopy late in life with an established private practice to leave behind. Upon returning to the Philippines and to Bacolod in particular, referrals started to pour in and eventually an arthroplasty practice slowly mushroomed. The negatives, easily overcome, include the following factors: the provincial arthroplasty surgeon seemingly falls under the shadow of the Metro Manila icons; we are not the first choice among the rich and we are nowhere affordable for the very poor. These are surmountable.

### Total Hip Arthroplasty in Acute Femoral Fracture in the Elderly

*Peter B. Bernardo, MD, FPOA*

Displaced fractures of the femoral neck in the elderly can be treated either by open reduction and internal fixation, hemiarthroplasty or total hip replacement. The indication for THA is when the patient sustains a hip fracture with a pre-existing symptomatic hip disease. However, recent evidence suggests a reevaluation of the role of THA in displaced femoral neck fractures. Recent studies show superior results and more durable function in elderly patients when compared to hemiarthroplasty and ORIF [open reduction and internal fixation]. Likewise, recent advances in improved bearing surfaces allowing use of larger femoral heads, combined with improved surgical techniques have decreased the dislocation rate and other mechanical problems.

### Hip Fractures in the Elderly

*Bill Cumberland MB,BS(Syd Hons), FRACS, FRCS(Ed Orth), FAOrthA  
President Australian Orthopaedic Association*

The Australian experience of fractures of the neck of the femur is reviewed from several perspectives. Biomechanics are considered in relationship to fracture fixation.

Incidence of hip fractures, their aetiology, and their prevention in Australia are discussed, including falls prevention program. Research into the effect of co-morbidities on outcome of hip fractures in the elderly is revealed.

### THR Bearing Surfaces: Current Status

*Christopher S. Mow MD*

*Deputy Chief, Clinical Associate Professor, Dept. of Orthopaedic Surgery, Stanford University Medical Center*

Great strides have been made in the last decade in the improvement of the durability of bearing surface materials in THR. The introduction of highly crosslinked UHMWPE, and resurgence of hard on hard bearing surfaces (that being ceramic

on ceramic and metal on metal) have greatly improved the wear characteristics over the traditional metal on polyethylene bearing couple. However, each of these has significant drawbacks and several serious unforeseen complications have recently come to the forefront. In the case of highly crosslinked UHMWPE, concerns about the weakened mechanical properties and vulnerability to long term in vivo oxidative degradation are growing with the first generation of these materials. Manufacturing strategies to improve strength and decrease oxidation include Vitamin E doping and improvement of the post-irradiation annealing process. With the increase in utilization of ceramic on ceramic THR, the phenomenon of joint squeaking has emerged as a major issue. And of course, the metal on metal THRs just this year have been subjected to a British FDA warning in April, as well as a product recall by Depuy Johnson and Johnson on August 26 due to pseudotumor reactions. Thus overall, no bearing surface is perfect, and further refinements are needed to improve performance.

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### TKR in the Elderly: Pearls and Perils

*Ilustre I. Guloy III, MD, FPOA*

Pearls are nuggets of good ideas while perils are pitfalls and complications. Performing the perfect total knee replacement is always the goal of every good orthopedic surgeon and it is through both our personal and colleagues' experiences that shape how we ultimately do it. Hopefully, the basic principles of total knee replacement are already part of our mindset and so the focus of this talk will be on fine tuning some of these principles: correct surgical technique and logical thought processes.

### Total Knee Arthroplasty in Patients Seventy-Five Years Old and Older

*H. M. Calleja, M.D., A.N. Tanchuling, Jr, M.D.*

*Center for Joint Replacement Surgery, St Luke's Medical Center, Philippines*

**Introduction:** With the advancement of modern medicine, the elderly population is growing and life expectancy rising. It is estimated that 1-3% of the elderly population will eventually require joint arthroplasty. Even with highly encouraging results of outcomes from total knee arthroplasty, this procedure is still

met with hesitation by elderly patients, their relatives, and orthopedic surgeons alike. In this study, we determined the outcomes of total knee arthroplasty in the 75-year old and above age group.

**Methods:** Between 2003 and 2008, 53 patients underwent primary total knee arthroplasty who were 75 years and older at the time of surgery in our institution, 39 of which were included in our study. We retrospectively reviewed patients' charts, recording characteristics, perioperative details and complications of patients. All were then followed up by personal or telephone interview. Average follow up duration was 3.83 years and mean age at follow up was 81 years old. Patients were asked to evaluate the results on a subjective grading scale. Functional outcome of the procedure at time of follow up was measured using the knee society functional rating system.

**Results:** Among this group of patients only one patient died. Significant causes of morbidity were 2 patients that had supracondylar periprosthetic fracture of the femur and 2 patients who developed periprosthetic infection, diagnosed at 3 years and the other at 6 months post operatively. 50% of the patients were independently ambulating and 95% were community ambulators. On subjective grading, 50% were satisfied and 39% were very satisfied. The mean Knee Society functional score was at 79 points (range, 20-100).

**Conclusion:** In this study, the low mortality and high patient mobility should be encouraging to surgeons and patients alike. In the elderly, total knee arthroplasty gave patients a high degree of satisfaction and a good knee function despite their age.

### Uni-Compartmental Knee Replacement in the Elderly

*Christopher S. Mow MD*

*Deputy Chief, Clinical Associate Professor, Dept. of Orthopaedic Surgery, Stanford University Medical Center*

Unicompartmental Knee Arthroplasty has seen a great resurgence in the previous decade. According to US Medicare data, the number of UKA cases increased from 6570 in 1998 to 44,990 in 2005. Improvements in materials and surgical techniques, as well as better management of post arthroplasty pain control and rehabilitation, have led to broadening of the indications for this procedure. Advantages of the UKA over TKA include preservation of uninvolved or minimally degenerated other compartments, reduced surgical dissection, time, and blood loss, less pain and easier postoperative rehabilitation, and higher level of postoperative activity allowable for the patient. Potential disadvantages, even in the ideal candidate, are the uncertain long term survivorship of the implant, and less reliable pain relief compared to TKR. In the context of the low demand elderly patient, UKA may be considered for the patient with isolated medial compartment disease as a less morbid procedure than TKR for the patient with high comorbidity. Technical factors such as proper assessment of bone quality and proper alignment remain key to success and avoidance of early failure.

## Osteotomy for the Degenerative Knee

Robert John Bartlett

**Introduction:** With the normal full length femorotibial angle measuring 4.9 degrees valgus in one leg stance, 75 percent of the weight bearing load passes through the medial compartment (Hsu). The case for high tibial osteotomy lies with the assumption of the mechanical basis for osteoarthritis of the knee i.e. that articular cartilage is designed to be loaded at 20 – 25 kg/cm and that loads in excess of 35 kg/cm lead to matrix breakdown (Sledge). The subsequent synovial response and subchondral bone response results in pain and functional impairment.

**Aims and Principles of Osteotomy:** The mechanical effect of the realignment through osteotomy thus unloading the damaged compartment is intended to relieve pain and slow progress of disease (Kostiuk) – this may require over correction of the mechanical (Yasuda). The osteotomy should be made through cancellous bone, as close to the site of deformity as possible and provide a stable correction with compression. Other symptomatic pathology needs to be addressed and additional simultaneous procedures such as arthroscopy or anterior cruciate ligament reconstruction may be required.

**Indications and Requirements for Osteotomy:** Relative factors which may determine the extent of required correction involve the active patient with a mobile varus knee and symptomatic medial compartment osteoarthritis. Ideally the younger patient with a stable knee and a relatively healthy opposite compartment improve indications. A gait pattern assessment pre-operatively and observation of any varus thrust may also influence the extent of correction. Full length hip – knee – ankle, weight bearing x-rays are part of the assessment with surgery ideally restricted to Ahlback grades one or two. The patient is adequately informed and the surgeon is confident with the technique.

**Potential Advantages:** Pain relief is achieved whilst preserving physiological joint surfaces and retaining bone stock and neurology; A predictable range of movement is achieved; A high impact activity level is permitted; Prosthetic complications are avoided e.g. osteolysis.

**Potential Complications:** High tibial osteotomy has had varied popularity due to high morbidity, uncertain outcome and high complication rates. Infection, haematoma, thrombo-embolism, infra-patellar contracture syndrome, arthrofibrosis, common peroneal nerve palsy, anterior tibial or popliteal artery damage, penetration of the knee joint with the osteotomy or fracture or fixation device, avascular necrosis of the proximal fragment, delayed union, non-union or mal-union of the osteotomy.

**Results:** Many authors have shown high success rates in terms of pain relief (Muller) with that success diminishing with longer follow-up time (Matthews, Insall, Hernigoe). Some have shown only 5 to 5.4 year delay before revision to total knee arthroplasty (Tregonning, Sanderson).

There is a high correlation rate between lasting pain relief and correction of the mechanical axis into the desired valgus (Lovasz, Tjornstrand, Coventry, Ivarsson, Ruddan). Fujisawa showed cartilaginous healing of the eburnated sub-chondral bone in the

medial compartment with adequate correction to the valgus. Terry demonstrated that alignment of the mechanical axis correlated better with results than did time from operation. Function can be improved with low impact activities e.g. walking, stair climbing, but true activity levels as measured on the Tegner scale have not improved significantly (Nagel, Wang, Kettelkamp, Rudan).

**Osteotomy in the Presence of Instability:** An increasing indication for valgus high tibial osteotomy is the physiologically varus knee alignment with post traumatic lateral instability (double varus), or lateral and postero-lateral instability associated with hyper-extension (triple varus), with the high adduction moment on walking (Prodromus). These cannot be balanced by soft tissue procedures alone.

Chronic anterior cruciate ligament instability with varus will increase the posterior tibial slope up to 24 degrees (Berchuk). If both pain and instability symptoms are disabling some have recommended high tibial osteotomy only (Fowler) whilst others report a high rate of second surgery for anterior cruciate ligament reconstruction (Jakob, Macintosh) and others recommend a combined procedure of high tibial osteotomy and ACL reconstruction (Gachter, Dejour, Lerat). We have also noted good results and a low complication rate with 21 such cases of combined surgery.

**Operative Technique:** Pre-operative assessment of the site and nature of pain, activity level range of movement and stability of the knee is followed by gait observance and radiology. This includes one leg standing, hip knee – ankle views for assessment of the femorotibial angle and mechanical axis and varus/valgus stress views for assessment of capsular laxity and joint “spaces”,

Templating is then used to determine the angle of wedge osteotomy required to correct the mechanical axis to the desired point on the lateral tibial condyle. This point will be influenced by the degree of medial compartment osteoarthritis, stability of the knee, and degree of varus thrust on walking.

A lateral approach allows exposure of the tibial tubercle, patellar tendon, Gerdy's tubercle, lateral surface of the tibia and superior tibiofibular joint. The fibular is mobilised by osteotomy through the superior tibiofibular joint. Using the jigs and cutting guides of the First Step system, the chosen angle wedge osteotomy is made at and immediately above the tibial tubercle leaving the medial bridge intact. Excision and closure of the wedge allows the desired correction and stable fixation is obtained using the compression staple.

Wound drainage, pressure dressing and protective splint are applied. Static quadriceps and passive flexion exercises with partial weight bearing are permitted until observation of bone healing at about 6 weeks. An associated patellar tendon anterior cruciate ligament reconstruction or lateral capsular reconstruction may be required.

**Conclusion:** Patient selection and surgical technique are the critical factors in obtaining lasting success. Clearly the young active patient with a painful varus but stable and mobile knee

with Ahlback grade 1 – 2 osteoarthritis represents the ideal candidate.

However, if one assumes that the running and jumping and high impact activity produce surface loads that exceed the limits of polyethylene then patients with Tegner activity levels of more than four should be treated with replacement arthroplasty but should be considered for osteotomy regardless of age

## FREE PAPER SESSION ABSTRACTS

### **The Impacted Varus (A2.2) Proximal Humeral Fracture In Elderly Patients Treated By Minimal Percutaneous Kirschner-Wire (K-Wire) Fixation: A Case Control Study**

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**INTRODUCTION:** Best treatment option for fractures of the proximal humerus in elderly patients is still controversial. An epidemiological study has shown that one of the most common humeral fractures is the varus impacted (A2.2) fracture and accounts for 13% of all the proximal humeral fractures (Court-Brown et al. Acta Orthop Scand 2001). The main characteristic of this fracture is the medial displacement of the greater tuberosity which weakens the lever arm of the shoulder and can lead to subacromial impingement. There are no well-defined criteria for “an acceptable degree” of angular displacement before deciding on surgery in patients with impacted varus (A2.2) fractures of the proximal humerus. The functional results of nonoperative treatment are suboptimal despite the patients’ high subjective impression.

Of the operative treatment options, a less invasive, closed reduction and percutaneous K-wire fixation would decrease pain, improve range-of-motion and strength, and decrease complications. However, the major concern facing the surgeon when using this technique is the difficulty in obtaining a secure fixation of the implant in elderly patients with osteoporotic bone stock, with the risk of K-wire migration and loss of fracture reduction.

We hypothesized that a minimally-invasive, percutaneous osteosynthesis with K-wire would decrease pain and improve shoulder function in elderly patients with an impacted varus (A2.2) fracture of the proximal humerus. The purpose of our retrospective case-control study was to assess the intermediate-term clinical, functional and radiographic results of K-wire osteosynthesis in patients over 65-years of age affected by impacted varus (A2.2) fracture of the proximal humerus. Moreover, we compared the results of the study group (surgically-treated patients) with a group of patients with similar fractures that were treated nonoperatively (control group).

**STUDY DESIGN:** A case control study, treatment study; Level of Evidence III.

**METHODS:** From January 2004 to December 2006, a total of 568 patients were treated at our institution with a diagnosis of proximal humeral fracture. A review of the hospital charts identified 54 patients treated surgically using K-wire fixation with the following inclusion criteria: (1) an impacted varus (A2.2) proximal humeral fracture in which the inclination angle on the day of the diagnosis was greater than or equal to 25 degrees; (2) patients over 65-years of age with enough communicative skill to complete a Constant score (CS); (3) the absence of previous shoulder injury or disease; (4) the ability to perform routine activities independently appropriate for an elderly person (for example, housework, independent personal toilet, dressing and shopping); and (5) a minimum follow-up of 36 months after the initial injury. Fractures were assessed by plain radiographs (true anteroposterior views, scapular-Y views and axillary views) and CT scan. The fractures were then classified according to the AO system by an experienced orthopaedic surgeon with special interest in the shoulder. The shoulder function was recorded utilizing the Constant score (CS), modified Constant score (MCS) without correction for handedness and the QuickDASH score.

The control group (nonoperatively treated patients) was carefully selected and matched to the study group (surgically treated patients) for age, type of fracture and degree of displacement. There were 58 patients in the control group.

The patients in the study group were treated with a closed reduction and percutaneous fixation, using an average of 3 or 4 partially-threaded, 2.5-mm K-wires. Surgery was performed on an average of 4 days (range, 1-9 days) after the initial injury. **SURGICAL TECHNIQUE:** The patient was placed on the operating table in a beach-chair position and a fluoroscopic intensifier was positioned. The patient’s affected upper extremity was prepared from the shoulder to the fingertips to allow complete mobility of the arm during operation. The fracture was reduced under fluoroscopy by external manipulation. Once the reduction was satisfactory, 3 to 4 partially-threaded, 2.5-mm K-wires were inserted in the antero-lateral side of the upper arm, through the distal part of the deltoid muscle insertion, in a distal-to-proximal, lateral-to-medial, and anterior-to-posterior direction. In 9 cases, an open reduction followed by K-wire fixation inserted through the skin was used as it was not possible to reduce the fracture by closed manipulation.

Plain radiographs were obtained at 1 week, 2 weeks and 6 weeks postoperatively for both the study group and the control group. If the plain radiographs demonstrated sufficient healing of the fracture at 6 weeks postoperatively, the K-wires were removed in the outpatient department by unscrewing without the need for anaesthesia. All patients were asked to wear a shoulder immobilizer sling with the upper limb in the so-called safe position for 3 to 4 weeks in the control group and until the removal of the K-wires in the study group. Pendulum exercise and passive assisted range-of-motion exercises, with up to 60 degrees of forward elevation and abduction, and up to 0 degree of external rotation, were begun at 2-3 weeks postoperatively or after trauma. An active assisted range-of-motion exercises were commenced once the sling had been removed. A standard physical therapy program for the proximal humeral fracture was prescribed to all the patients (both the study group and the control group).

Twenty-two of the 54 patients in the study group had a CT scan of the shoulder at latest follow-up evaluation. At the time of latest follow-up, the degree of fracture displacement, in particular the varus malalignment, was measured on plain radiographs and CT scan (if available) of the shoulder.

**RESULTS:** The average follow-up in the study group was 52 months (range, 36 to 75 months) and the mean follow-up for the control group was 48 months (range, 36 to 74 months). K-wire osteosynthesis in our series yielded consistently good results in older patients (greater than 65-years of age) who sustained an A2.2 proximal humeral fracture, with an average MCS of 86 points and a QuickDASH score of 13.6. The study group had a statistically significant higher CS and modified Constant score at latest follow-up than did the control group. In an effort to clarify which of the parameters in the CS had the most significant effect on the outcome, we compared the single parameters of the MCS between the 2 groups. The MCS showed significantly better results in the study group for pain, ability to sleep, flexion, abduction, strength, and ability to work at specific levels ( $p < 0.05$ ). However, there was no significant difference between the 2 groups in the ability to work, to engage in recreational activities, or external/internal rotation. One explanation for this may be the fact that older patients have a low functional demand that generally compensates for the poor functional outcomes. The mean QuickDASH score was 13.6 in the study group and 27.3 in the control group.

It was observed during the follow-up that the amount of fracture displacement was significantly related to the MCS ( $p < 0.05$ ). The strength and abduction were significantly related to the varus angle ( $p < 0.05$ ). However, the overall analysis of the CS, QuickDASH score, and pain extrapolated from the MCS did not show any significant correlation between the degree of fracture displacement and clinical outcome.

Eleven complications were seen in 54 patients in the study group (surgically-treated group). Two patients had a superficial wound infection, 1 had a deep infection, 1 had a deep vein thrombosis of the upper extremity, and 7 patients had migration of the K-wire.

There was a 13% (7/54) incidence of K-wire migration in our study, without major consequences on clinical outcome. None of the patients had a neurovascular injury.

**CONCLUSIONS:** Operative management of the impacted varus (A2.2) fracture of the proximal humerus in elderly patients treated with minimally-invasive, percutaneous K-wire osteosynthesis yields good clinical and functional results that are superior compared to a group of patients with similar fractures treated non-operatively. We conclude that minimally-invasive, percutaneous K-wire osteosynthesis for impacted varus (A2.2) fractures of the proximal humerus is a safe, effective and reproducible surgical technique and provides optimal functional results in elderly patients.

## A Comparative Study of Clinical and Radiographic Outcomes of Unstable Colles Type Fractures Of The Distal Radius In Patients Older Than 65 Years: Nonoperative Treatment Versus Volar Locking Plating DV Patel

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**INTRODUCTION:** Fractures of the distal radius sustained in the elderly osteoporotic population are common. Osteoporosis primarily weakens the metaphyseal bone by decreasing the trabecular bone volume. Osteoporotic fractures of the distal radius often show a large metaphyseal defect or void which increases fracture instability. Most patients initially require closed reduction using procedural sedation in an emergency department. Decision making for operative or nonoperative treatment for elderly patients with osteoporotic fractures of the distal radius is difficult. The current literature concerning the treatment of distal radius fractures in the elderly is controversial. There is unanimity in the literature that stable fractures can be treated by closed reduction and cast immobilization with satisfactory functional outcome in most cases. However, in unstable, comminuted, intra-articular fractures of the distal radius, where fracture reduction cannot be maintained with cast immobilization, additional fixation has been suggested.

Some authors have suggested that elderly patients with fractures of the distal radius should be treated nonoperatively even if there is an unstable fracture situation because there is no correlation between the quality of fracture reduction and functional outcome. Patient's age, activity level, lifestyle requirements, associated comorbidities, and the degree of osteoporosis should be included in the decision-making process. It is debatable whether anatomic alignment on radiographs is correlated with a better functional outcome in low-demand elderly patients.

The purpose of our retrospective study was to compare the functional and radiographic outcomes of closed reduction and casting (CAST group) with open reduction and internal fixation (ORIF group) with volar locking plate for unstable Colles type distal radius fractures in low-demand patients older than 65 years.

**STUDY DESIGN:** A retrospective comparative study; Level of Evidence III.

**METHODS:** Between January 2000 and December 2005, a total of 272 consecutive patients (greater than 65 years of age) were treated for unstable Colles type fractures of the distal radius. We retrospectively analyzed the data acquired from these patients who were treated either with open reduction and volar plating (ORIF group) or with closed reduction and plaster immobilization (CAST group). Patients who were living in nursing homes ( $n = 23$ ), dependent patients with dementia, or who needed help with activities of daily living ( $n = 16$ ), those with multiple medical comorbidities ( $n = 15$ ), previous fractures of the wrist ( $n = 12$ ), volar-angulated fractures (Smith fractures,  $n = 9$ ), bilateral

fractures (n = 8), open fractures (n = 5), and ipsilateral limb injuries (n = 14) were excluded from our retrospective study. Patients with stable fractures, who did not lose their fracture reductions (n = 19) during the first 2 weeks after initial injury, continued plaster immobilization and were by definition excluded from our study. Thus, 151 patients matched the inclusion criteria. Six patients could not attend the final follow-up evaluation. Thirteen patients died of unrelated medical illnesses and were excluded. Therefore, 132 of the 151 patients (87%) were included in the study.

All fractures were classified according to the AO/ASIF classification system and were initially reduced under local anesthesia in the emergency department and immobilized with a below-elbow forearm plaster cast. Radiographs were used to assess the fracture alignment after manipulation. Instability was defined as a failure to hold the reduced position of the fracture within the forearm cast. Patients with a loss of reduction at 1 or 2 weeks (loss of dorsal tilt of more than 20 degrees, shortening of 3 mm or more, and articular step-off of 2 mm) were advised to have surgical treatment. After accurate information about operative and nonoperative treatment modalities, 59 patients decided to have surgery and were treated with open reduction and internal fixation (ORIF group) using volar locking plate systems. Seventy-three patients declined surgery and were treated with plaster cast immobilization (CAST group). There was no randomization of the patients into the operative or nonoperative group. The two groups were not significantly different in age, gender, cause of injury, injured side, hand dominance, and fracture classification.

Functional assessment included measurement of active range of wrist extension, flexion, pronation, and supination using a goniometer. Grip power was measured with a dynamometer. Wrist pain was evaluated using the visual analog scale (VAS) [VAS 0 = no pain, VAS 10 = severe pain]. Functional subjective outcome was measured with the Disability of the Arm, Shoulder, and Hand (DASH) questionnaire (range, 0-100, with 0 for best result) and the patient-rated wrist evaluation (PRWE) scores (range, 0-150, with 0 for being asymptomatic). Subjective and objective data were summarized in the modified Green and O'Brien score (range, 100-0, with 100 for the best result). Radiographic assessment included measurement of dorsal tilt, radial inclination and radial shortening. Radiographic evidence of fracture union was recorded. Posttraumatic arthritis at follow-up was classified using the Knirk and Jupiter classification system.

**RESULTS:** In the present series, 132 patients underwent a detailed clinical, functional, and radiographic assessment at an average of 85.5 months (range, 49 to 123 months) after injury or surgery. There were 40 men and 92 women. Their mean age at the time of injury or surgery was 76 years (range, 67 to 95 years). Fifty-nine patients were treated by open reduction and internal fixation of the fracture (ORIF group) using a volar locking plate. In the ORIF group, 30 patients had intra-articular fractures and 29 had extra-articular fractures. Seventy-three patients were treated by closed reduction and plaster cast immobilization (CAST group). In the CAST group, 35 patients had intra-articular fractures and 38 had extra-articular fractures. The mean follow-up time for the ORIF group was 87.2 months (range, 52 to 123 months)

and for the CAST group was 83.7 months (range, 49 to 118 months).

At latest follow-up, there was no significant difference between the two groups for mean ranges of motion, grip strength, DASH score, PRWE score, and modified Green and O'Brien score ( $P > 0.05$ ). Pain level was significantly less for the patients in the CAST group ( $P < 0.05$ ). Clinical deformity (prominent ulnar head) of the injured wrist was present in 51 of 73 patients (70%) in the CAST group and none in the ORIF group. Despite this deformity, none of the patients were dissatisfied with the clinical appearance and functional result of their wrist. Satisfactory reduction was achieved intraoperatively in all fractures for the ORIF group. In the ORIF group, an average loss of dorsal tilt of 1.5 degrees, radial inclination of 0.6 degrees, and radial length of 0.7 mm occurred within the first 6 weeks after surgery in those fractures with a high degree of metaphyseal comminution. No statistically significant difference in loss of reduction was seen between intra-articular and extra-articular fractures ( $P > 0.05$ ). In 29 fractures for the CAST group (40%), no primary reduction of the fracture was achieved. At latest follow-up, in the CAST group, dorsal tilt, radial inclination, and radial shortening averaged -20.8 degrees, 18.6 degrees, and +4.7 mm, respectively. Malunion occurred in 32 of the 44 primarily reduced fractures (73%) for the CAST group at latest follow-up. Dorsal tilt, radial inclination, and radial shortening (ulnar variance) were significantly better in the ORIF group compared with the CAST group ( $P < 0.05$ ).

In the ORIF group, of the 30 patients with intra-articular fractures, 3 patients (10%) had grade 1 arthritis and 11 (37%) had grade 2 arthritis at latest follow-up. In the CAST group, of the 35 patients with intra-articular fractures, 18 patients (51%) had grade 1 arthritis and 7 (20%) had grade 2 arthritis. In the ORIF group, of the 29 patients with extra-articular fractures, 13 patients (45%) had grade 1 arthritis and 3 (10%) had grade 2 arthritis. In the CAST group, of the 38 patients with extra-articular fractures, 12 patients (32%) showed grade 1 arthritis and no patient had grade 2 arthritis. There was no correlation between radiographic signs of osteoarthritis and the DASH score, PRWE score, and pain level ( $P > 0.05$ ).

Overall, 8 patients (13.6%) from the ORIF group developed a complication (one patient had a superficial wound infection; 3 had flexor tenosynovitis; 2 had carpal tunnel syndrome; and 2 had a delayed fracture union). None of the patient had implant failure. Three patients (4%) from the CAST group developed complex regional pain syndrome type 1. The symptoms resolved in 2 patients with physical therapy and analgesics; one patient required a series of sympathetic blocks to relieve pain. She has moderate residual symptoms in her affected upper extremity at latest follow-up.

**CONCLUSIONS:** Radiographic results (dorsal tilt, radial inclination, and radial shortening) after unstable Colles type fractures of the distal radius are significantly better in patients treated by ORIF using a volar locking plate as compared with those treated by cast immobilization ( $P < 0.05$ ). At a mean follow-up time of 85.5 months, the clinical outcomes of active range of motion, the PRWE, DASH, and modified Green and O'Brien scores did not differ between the two methods of treatment. The pain level was

significantly less in the CAST group ( $P < 0.05$ ). There was no difference between the subjective and functional outcomes for the operative and nonoperative treatments in a cohort of patients older than 65 years. We found that unsatisfactory radiographic outcome in older patients does not necessarily translate into unsatisfactory functional outcome. Based on the numbers studied in this series, we believe that nonoperative treatment may be the preferred treatment option for elderly patients ( $> 65$  years of age) with unstable Colles type fracture of the distal radius.

### **A Comparative Study of Clinical and Radiographic Outcomes of Unstable Colles Type Fractures of The Distal Radius In Patients Older Than 65 Years: Nonoperative Treatment Versus Volar Locking Plating**

*Dipak V. Patel, MD, MSc Orth., MS Orth., D Orth., FCPS Orth., and Yashika D. Patel, MD*

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moderate residual symptoms in her affected upper extremity at latest follow-up.

**CONCLUSIONS:** Radiographic results (dorsal tilt, radial inclination, and radial shortening) after unstable Colles type fractures of the distal radius are significantly better in patients treated by ORIF using a volar locking plate as compared with those treated by cast immobilization ( $P < 0.05$ ). At a mean follow-up time of 85.5 months, the clinical outcomes of active range of motion, the PRWE, DASH, and modified Green and O'Brien scores did not differ between the two methods of treatment. The pain level was significantly less in the CAST group ( $P < 0.05$ ). There was no difference between the subjective and functional outcomes for the operative and nonoperative treatments in a cohort of patients older than 65 years. We found that unsatisfactory radiographic outcome in older patients does not necessarily translate into unsatisfactory functional outcome. Based on the numbers studied in this series, we believe that nonoperative treatment may be the preferred treatment option for elderly patients ( $> 65$  years of age) with unstable Colles type fracture of the distal radius.

### **Functional Outcome of Non-Bridging External Fixator vs. Closed Reduction And Casting In The Treatment Of Distal Radius Fracture: A Randomized Controlled Study**

*Jofrey D. Ang, MD*

Early recovery of functions, full range of motion and stable anatomic reduction were the advantages claimed by using the non-bridging external fixator. This prospective nonrandomized controlled trial compared a non-bridging external fixator with a cast for the treatment of the distal radius fractures in terms functional, radiographic, range of motion, pain control and time to union. The two groups (13 external fixator, 19 casting) were followed up for a mean period of 19.16 weeks (range, 18-21 weeks). The mean age of the study population was 30.8 years and mostly male (26 subjects).

In terms of radiographic outcome, both treatments were able to provide reduction with good to excellent results. There were no reduction rated fair and nor poor. In terms of maintaining the reduction, the study favors the external fixation (100%) compared to 84.2% of the casting group. All fractures

The gartland and werley functional score and pain score concluded that the fixator group was advantageous only in the short term period and comparable with the cast group in long term result.

The range of motion for the external fixator group was only valuable in the first 2 initial periods and comparable to cast group after 8 and 12 weeks. The difference in terms of long term outcome were not significant statistically but significant during the initial 2 weeks.

Therefore, the external fixator group had superior results with respect to early recovery, but the differences in long term function are not significant.

**Keywords:** *Fracture, Distal Radius, Casting, External fixation*

## Dilated Portals Vs. Traditional Stab Incisions In Knee Arthroscopy - A Randomised Control Trial R

Rahim

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**Introduction:** Arthroscopy of the knee has spared patients large incisions and decreased morbidity compared with those of open procedures, but it has not eliminated pain completely. We believed that the method in which we make our portals affects the post-operative pain experienced at the portal sites. Our hypothesis was that creating entry portals with serial dilating causes less pain post-operatively compared to the traditional stab incision portal.

**Materials and Methods:** We conducted a prospective, randomized, patient blinded controlled trial of 40 consecutive patients undergoing arthroscopy of their knees in a private hospital under a single surgeon (SF). 20 patients underwent sequential dilating of their entry portals with 3 urinary dilators, while a second group of 20 patients had the traditional stab incision portal. The primary outcome measure was the visual analogue scale at day 5 (The time the bandage came off and patients were able to visualize the wound). Intraoperative complications, pain post-operatively, analgesic requirements (how many days used) were used as secondary outcome measures. A statistician was consulted for data analysis.

**Results:** No patients had portal site pain in the dilated group while 6 patients reported pain in the traditional/non-dilated group. 1 patient from the stab incision group had a portal site bleed. No intra-operative problems were experienced in anyone in the dilated group. No other outcome measures showed significant differences in results.

**Conclusions:** Our results show that dilatation is a safe procedure, associated with less pain at the portal sites.

## Interlocking of Intramedullary Nail after Bone Transport in Comminuted Tibial Shaft Fractures with Bone Loss Secondary to High Velocity Gunshot Injury in Adults

Rodolfo S. Bravo, Jr., RD Prudente, DA Chua, Jr., Ve Pundavela, RV Frez

This case series study was performed on five patients with comminuted fractures of the tibia with bone loss secondary high velocity gunshot injury. Ilizarov external fixator combined with a statically locked intramedullary nail with a hole near the docking site were used. The ASAMI grading criteria and system for both bone union and functional evaluation as well as the external fixation index and radiologic consolidation index were used to evaluate the results. Union was rated as excellent in three of five case (60%) cases while the remaining two cases was rated as good (40%). Functional results were rated as excellent in all cases. The mean duration of external fixation was 12.80 days (range, 11.76-13.50) per centimetre gain in length and the mean radiologic consolidation index was 34.92 (range, 33.60 - 36.15). All distracted segments were united clinically and

radiographically on latest follow-up. Pin tract infection was the only complication noted in two of five cases.

## Clinical Outcomes Of Surgically Treated Hip Fractures In Patients With End-Stage Renal Disease Receiving Long-Term Hemodialysis

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**INTRODUCTION:** Hip fractures in patients with end-stage renal disease and who are on long-term hemodialysis are associated with a high risk of mortality and frequent complications. The reported one-year mortality rates for elderly patients without end-stage renal disease who sustain a femoral neck fracture have ranged from 15% to 40%. The corresponding rate for patients who are on chronic hemodialysis because of end-stage renal disease is 50%. Hip fractures in this patient group are frequently complicated by problems such as hematoma, prolonged wound drainage, superficial or deep wound infection, implant failure, nonunion, and osteonecrosis of the femoral head. The purpose of our study was to report the clinical outcomes after surgical treatment of a hip fracture in patients with end-stage renal disease who are on chronic hemodialysis, and to evaluate how the type of hip fracture and treatment affect the clinical outcome.

**STUDY DESIGN:** Level of Evidence: Therapeutic Level III.

**METHODS:** During the enrollment period between 1995 and 2007, a total of 57 patients (63 hip fractures) with end-stage renal disease and receiving chronic hemodialysis were identified and retrospectively reviewed. The inclusion criteria were a diagnosis of chronic renal failure, dependence on hemodialysis, no functioning renal transplantation before the fracture, an ability to walk independently, and no history of hip disease or fracture. The exclusion criteria were treatment with peritoneal dialysis; a functioning renal transplantation before the fracture; an ability to walk that is dependent on the use of a cane, crutches, or walker; and a history of hip disease or fracture.

Of the 57 patients, 15 (17 hip fractures) were excluded from the study. The study group comprised the remaining 42 patients with 46 hip fractures. Forty-two patients (46 hip fractures) were analyzed in three groups. Group 1 consisted of 13 patients (13 hips) with an intertrochanteric fracture that was treated with internal fixation (eight were treated with a sliding hip screw and five were treated by a cephalomedullary nail). Group 2 consisted of 12 patients (14 hips) with a Garden type-1 or type-2 femoral neck fracture that was treated with osteosynthesis with use of three or four cannulated screws. Group 3 consisted of 17 patients (19 hips) with a Garden type-3 or type-4 femoral neck fracture that was treated with a bipolar hemiarthroplasty.

The outcome for each group was analyzed. Early complications (within the first month after hip fracture repair) and late

complications (after the first month) were recorded. Hematoma, infection, thromboembolism, and iatrogenic nerve injury were classified as early complications, and nonunion, osteonecrosis, and implant failure were considered late complications. Early mortality (death in the first year after repair of the hip fracture) and late mortality (death after the first year) were also analyzed. Survivorship analysis was performed. The mortality and complication rates for the three groups were compared.

**RESULTS:** There were 23 men and 19 women, with a mean age of 54 years (range, 23 to 84 years). The etiologies of end-stage renal disease were diabetes mellitus (15 patients), hypertension (7 patients), a combination of chronic glomerulonephritis and pyelonephritis (8 patients), a combination of nephrolithiasis and urethral stenosis (5 patients), amyloidosis (3 patients), and polycystic kidney disease (2 patients); the cause was unknown in 2 patients. The mean duration of hemodialysis (the total time on hemodialysis prior to hip surgery) for the 42 patients was 7.4 years (range, 8 months to 22 years). Eleven patients had renal transplantation after treatment of the hip fracture.

Of the 42 patients, 13 patients (13 hips) had intertrochanteric fractures and 29 patients (33 hips) had femoral neck fractures (Four patients had a bilateral femoral neck fracture). All of the intertrochanteric fractures and 30 of the 33 femoral neck fractures were caused by trauma. The other three were stress fractures of the femoral neck (a non-displaced femoral neck fracture without a history of trauma) possibly resulting from impaired bone quality due to end-stage renal disease.

In Group 1, nine complications (postoperative hematoma with prolonged drainage in 3 patients; superficial wound infection in 1 patient; deep wound infection in 1 patient and non-union in 4 patients) occurred in seven hips. Eight patients in Group 1 died. In Group 2, twelve complications (postoperative hematoma in 2 patients; deep wound infection in 2 patients, non-union in 6 patients and osteonecrosis of the femoral head in 2 patients) developed in eight hips. Seven patients in Group 2 died. In Group 3, only two hips had early complications (one patient had a superficial wound infection and one had a deep venous thrombosis); there were no late complications. Five patients in Group 3 died. The mean duration of follow-up for the entire series was twenty-eight months. Twenty of the 42 patients died (3 died due to respiratory failure caused by pneumonia; 2 died of infection-related complications; 2 died of a cerebrovascular accident; and 13 died of cardiopulmonary arrest). The overall mortality rate for the 42 patients was 48%. A comparison of the cumulative survival rates in all 3 groups, with use of the log-rank test, revealed no significant differences. Regression analysis of age, sex, and total hemodialysis duration in relation to mortality risk revealed that only age had a significant influence on mortality ( $p < 0.02$ ). Comparison of the overall complication rates showed that the patients in Group 3 (hemiarthroplasty for femoral neck fracture) had significantly fewer postoperative complications than those in the other two groups ( $p < 0.04$ ).

**CONCLUSIONS:** Surgical treatment of hip fractures in patients with end-stage renal disease who are on long-term hemodialysis is associated with frequent complications and a high mortality rate. Based on the available patient population studied in this series, we conclude that osteosynthesis is a reasonable and

acceptable treatment option for intertrochanteric fractures and non-displaced femoral neck fractures in patients with end-stage renal disease undergoing chronic hemodialysis. However, we believe that the displaced femoral neck fractures should be treated with hemiarthroplasty.

### Concurrent Fractures Of The Hip And Wrist In The Elderly: A Matched Analysis Of 38 Patients

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**INTRODUCTION:** Osteoporosis is a systemic disorder characterized by decreased bone mass and microarchitectural deterioration of osseous tissue leading to bone fragility and increased susceptibility to fractures of the hip, spine and wrist. Although, many studies have been reported for patients with isolated, osteoporotic fractures of the hip, wrist or spine, very little information has been published about patients who are admitted for simultaneous hip and wrist fractures. The incidence of concurrent hip and wrist fractures in the same patient is small but may represent a unique subpopulation of elderly patients with osteoporotic fragility fractures. We report a retrospective case-control study analyzing a group of elderly patients (aged above 60 years) admitted to our institution with simultaneous fractures of the hip and distal radius, and comparing with a matched control group. The purpose of our study was to identify the differences (if any) between a group of patients with a concurrent hip and wrist fracture, and a group of patients with an isolated hip fracture.

**STUDY DESIGN:** A retrospective case-control study; Level of Evidence III.

**METHODS:** We performed a retrospective review studying a series of 38 elderly patients (mean age 74 years, range 61 years to 92 years) who were admitted at our institution between 1997 and 2005 with a concurrent hip and wrist fracture. During the same study period (1997 to 2005), a total of 1,168 patients with isolated fracture of the hip were admitted to our institution. Thirty-eight matching patients were selected from a population of 1,168 patients admitted for isolated hip fracture. We matched the patients with a concurrent hip and wrist fracture (study group) with a group of patients of similar age, gender, race, and medical co-morbidities with isolated hip fractures (control group). Matching of co-morbidities included pre-morbid visual acuity, cerebrovascular disease, diabetes mellitus, dementia, and underlying infection. Matching was performed as closely as possible using the patients' inpatient charts. The parameters analyzed for these matched pairs included differences in pre-morbid ambulatory status, mechanism of injury, place of injury, degree of osteoporosis as measured by Singh's index, length of hospital stay and number of re-admissions to hospital. Singh's index of I, II and III was classified as severe osteoporosis and Singh's index of IV, V and VI was classified as minimal osteoporosis.

**RESULTS:** The mean age of patients with simultaneous hip and wrist fracture (study group) was 74 years. The female-to-male ratio in the study group was 5.3:1. The mean age of patients with isolated hip fracture (control group) was 70.3 years. The female-to-male ratio in the control group was 2.2:1. Prior to sustaining a fracture, 34 patients in the study group and 27 patients in the control group were community ambulators. In our cohort of 38 matched pairs, 25 patients in the study group (concurrent hip and wrist fracture group) sustained a fall at home and 29 patients in the control group (isolated hip fracture group) sustained a fall at home. Of the 38 patients in the study group, 28 sustained an intra-capsular fracture of the femoral neck and 10 sustained a peri-trochanteric fracture. Of the 28 patients with intra-capsular femoral neck fractures, 13 patients with non-displaced femoral neck fracture (Garden type-1 or type-2) underwent osteosynthesis with 3 or 4 cannulated screws, whereas 15 patients with displaced femoral neck fracture (Garden type-3 or type-4) were treated by a bipolar hemiarthroplasty. Of the 10 patients with peri-trochanteric fractures, 6 underwent fixation with a sliding hip screw and 4 had fixation with a cephalomedullary nail. Of the study group of 38 patients with distal radius fractures, 3 were treated by cast immobilization, 5 were treated by closed reduction and cast immobilization, 19 had closed reduction and stabilization with an external fixator, and the remaining 11 patients were treated by open reduction and internal fixation with a volar locking plate.

The median duration of stay in hospital was 20 days in the study group versus 14 days in the control group. Bone density assessment using Singh's index showed that 21 patients in the study group had severe osteoporosis (Singh's index of I, II and III), whereas 26 patients in the control group had severe osteoporosis. Eleven patients in the study group were readmitted to the hospital within the first year after the initial fracture, whereas 17 patients in the control group were readmitted within the first year after the initial fracture. Fifteen patients in the study group and 25 patients in the control group were able to ambulate (with or without a walker or cane) at the time of discharge from the hospital.

**CONCLUSIONS:** Our study reinforces previously reported data that elderly patients with simultaneous hip and upper limb fractures were more likely to be older, female and require a longer hospital stay. Our study population demonstrated a higher proportion of pre-admission community ambulators and lower 1-year re-admission rates which signify that they belong to a physiologically younger and more active cohort as compared with our control group of isolated hip fractures. Our matched analysis further showed that elderly patients with concurrent hip and wrist fractures were not significantly more osteoporotic. The concurrent upper limb injury was the likely reason for their impaired post-discharge ambulatory status. The most common location of injury in both groups of patients was at home. It is important to recognize this specific subgroup of patients presenting with simultaneous hip and wrist fractures to ensure that they receive optimal fracture care and rehabilitation.

#### **Use Of Medical Comorbidities To Predict Perioperative Medical Complications After Hip Fracture Surgery In Elderly Patients**

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**INTRODUCTION:** Fractures of the hip are the second leading cause of hospitalization in the geriatric population. In many cases, hip fractures are a sentinel event signaling a systemic decline in the patient's general health. Potential complications after hip fracture surgery include myocardial infarction, congestive heart failure, cardiac arrhythmias, pulmonary edema, gastrointestinal bleeding, bowel obstruction, stroke, acute renal failure, deep venous thrombosis, and pulmonary embolism. A recent systematic review revealed a lack of evidence regarding the optimum perioperative care of patients in the subacute period following surgery for a hip fracture (Beaupre et al. 2005).

While surgery is the definitive treatment for almost all hip fractures, evidence indicates that a return to optimal functional levels after the surgery is not determined by the type of operation but rather by preoperative comorbidities and postoperative complications (JD Zuckerman, N Engl J Med 1996). The mortality rates at one year after a hip fracture range from 18% to 33% (Gordon 1971; Dahl 1980). Therefore, the factors that contribute to mortality and major postoperative complications must be defined and analyzed in order to improve outcomes.

The purpose of our study was to define the complications after hip fracture surgery performed in a single hospital, and to identify care practices that may lead to improved clinical and functional outcomes in elderly patients with a hip fracture. We hypothesized that the American Society of Anesthesiologists (ASA) classification of medical comorbidities is a useful variable for the patient's general medical condition and would be a strong predictor of common medical problems occurring in the immediate postoperative period after a hip fracture surgery.

**STUDY DESIGN:** A retrospective review.

**METHODS:** Between January 1999 and June 2005, a total of 346 patients with intracapsular or extracapsular fracture of the hip were admitted at a single institution. Patients were included in the study if they had sustained low-energy trauma when they were more than sixty years old, had been treated at one institution that maintain electronic medical records, and had undergone operative fixation or prosthetic replacement. Patients were excluded from the study if they had metabolic bone disease other than osteoporosis, or if they had sustained multiple or high-energy injuries and/or non-orthopaedic trauma-related injuries. In addition, patients were eliminated if the ASA class had not been recorded. Sixty-eight patients did not meet the inclusion criteria and were eliminated from the study.

A retrospective review of the cases of 278 elderly patients who had undergone operative management of a hip fracture was performed. A retrospective chart review was performed with use of the hospital electronic medical record system to obtain data regarding age, gender, date of admission, admitting diagnosis, mode of injury, method of treatment, estimated blood loss in the operating room, type of anesthesia, ASA classification, length of hospital stay, perioperative medical and surgical complications,

complications requiring further surgery, transfer to the intensive care unit, death and cause of death, primary service, admitting service, readmission to the hospital within thirty days, and any medical problem (disease processes not directly or causally related to the surgical intervention).

All patients were assigned an ASA class as part of their anesthesia preoperative assessment. The American Society of Anesthesiologists (ASA) classification system is a useful risk-stratification system for elderly patients who sustain a hip fracture. It is nearly universally used, independent of medical and surgical evaluations, and represents an anesthesiologist's assessment of the general health and well-being of the patient. Typically, the ASA class is expressed as a five-tier system: 1 - a normal healthy patient; 2 - a patient with mild systemic disease; 3 - a patient with a serious, non-incapacitating systemic disease; 4 - a patient with a life-threatening, incapacitating systemic disease; and 5 - a moribund patient, with death expected in less than 24 hours.

Medical complications were defined as those requiring intervention by an internist or a medical specialist. Differences in complication rates among the ASA classes were determined.

**RESULTS:** The average age of the patients in our series was 76 years (range, 64 to 93 years) and there was no significant difference in the age of the patients among the ASA classes. There were 106 men and 172 women. There was no significant difference in gender distribution among the ASA classes. The average length of hospital stay was 12.7 days. Patients in ASA class 2 had a shorter average length of stay (9.6 days) than patients in class 3 (13.4 days) and a trend toward a shorter stay compared with patients in class 4 (15.7 days). No significant difference was identified between ASA classes 3 and 4 in terms of the length of hospital stay.

The average number of days prior to the hip fracture surgery was 2.8. Patients in ASA class 2 underwent fracture surgery significantly earlier than those in class 3 (at an average of 2.1 days compared with an average of 2.9 days). Patients in ASA class 4 were surgically treated at an average of 5.1 days after the initial injury.

There were 113 intracapsular and 165 extracapsular hip fractures. Treatment consisted of fracture fixation in 191 patients and prosthetic replacement in 87 patients. The percentage of patients with prosthetic replacement (as opposed to fracture fixation) was higher in the ASA class-3 and 4 groups than in the class-2 group. There was no significant difference in the rates of medical complications between the patients treated with internal fixation and those who were treated with an arthroplasty, either in the entire cohort or in any ASA-class subcohort. The average estimated blood loss was 245 mL and did not differ significantly among the ASA classes.

Medical complications were more common in patients in ASA class 3 ( $p < 0.001$ ) and those in ASA class 4 ( $p < 0.001$ ) as compared with those in ASA class 2. Patients in ASA class 3 had a 3.86 times greater chance of having a medical complication than did those in ASA class 2. Patients in ASA class 4 had a 7.52 times greater chance of having medical complications than did those in ASA class 2.

**CONCLUSIONS:** Fragility fractures of the hip are markers of declining health status. Preoperative comorbidities and postoperative complications can impact the return to function, and this in turn, can have profound medical, rehabilitative, social, and economic consequences. In our study, the ASA class strongly correlated with medical problems in the perioperative period following hip fracture surgery in the elderly patients. Patients identified as being at higher risk (in ASA class 3 or 4) preoperatively should be closely managed medically so that perioperative medical complications can be managed efficiently and effectively, and evolving medical issues can be addressed in a timely manner to optimize the functional outcome. We recommend a multidisciplinary care (including the services of an orthopaedic surgeon, geriatrician, physiatrist, social worker and skillful nursing staff) for elderly patients who sustain a fracture of the hip.

### Results of Replantation and Revascularization Surgery of the Hand and Wrist

*Emmanuel P. Estrella, MD, FPOA*

**OBJECTIVE:** The objective of this paper was to present the results of replantation and revascularization surgery of the hand or digit in a tertiary hospital setting and to describe the factors associated with survival of the replanted and revascularized digit.

**PATIENT AND METHODS:** From January 1, 2005 to July 31, 2010, a retrospective review of the Microsurgery Unit Database was done to determine the number of patients referred to the Unit for amputations of the upper extremity. The injuries were classified by mechanism of injury (guillotine, crush, avulsion, and gunshot/blast), level of injury, and whether or not a vein graft was used. A total of eight patients with eight hand parts underwent had replantation surgery and seven patients with 10 revascularized parts were reviewed. The average age at the time of surgery was 26 years (range, 4-68 years old).

**Functional Outcome.** Functional outcome was measured using the range of motion of the involved digit or body part using a finger or standard goniometer. Sensory recovery of the replanted or revascularized part was measured using the static 2-point discrimination test.

**RESULTS:** A total of 86 patients from January 2005 to July 2010 suffered amputation or near amputation injuries that were referred to the Microsurgery Unit. Of these patients, eight patients with 8 hand parts underwent replantation surgeries while seven patients with ten hand parts had revascularization surgeries for incomplete or near total amputation. In total, there were 15 patients with 14 men and 1 female (including four children) with an average age of 26 years old (range, 4-68 years old; including children). The overall viability rate was 72.2% (62.5% for replantation of complete amputations and 80% for revascularization of partial amputations). The average follow-up of the patients who had a successful replantation procedure was 19 months (median, 12 months). Those who had successful revascularization procedures after partial or near amputation of the hand or fingers had an average of 7.3 months follow-up.

(median, 4.3 months). The overall average follow-up for the two groups was 12 months (range, 3-48 months). Overall, the success rate for crush injuries was 45% ((5/11), and for guillotine type injuries, 100% (7/7).

**Functional Outcome.** Four of the 12 patients had no functional results because of no recovery yet was expected on recent follow-up. In all digital replantations, stiffness was present even after six months post replantation. Of the five patients who had successful replantation surgery, only four had functional results. The best results were from the through wrist and through-palm amputations. Protective sensation was achieved in all tested patients.

**Conclusion.** Successful replantation and revascularization surgery mainly depend on the mechanism of injury. Crush injuries tend to have poorer prognosis compared to guillotine type injuries. Replantation and revascularization surgeries require intensive post-operative rehabilitation to maximize the functional outcome.

### **Functional Outcome of Nerve Transfers for Upper Type Brachial Plexus Injuries**

*Emmanuel P. Estrella, MD, FPOA*

**Purpose.** The purpose of this study was to present the results of treatment using nerve transfers for elbow and shoulder function in patients with upper type (C5-C7) brachial plexus injuries. **Methods.** A retrospective review of a single surgeon's experience was done on the results of treatment using nerve transfers for shoulder abduction and external rotation and elbow flexion nine patients with upper type brachial plexus injuries from 2005-2008. The average age at the time of surgery was 32 years. The average time from injury to surgery was 6.6 months (range, 3-11 months). Two patients had single nerve transfers from the ulnar nerve to the biceps branch of the musculocutaneous nerve and seven patients had double nerve transfers from the ulnar nerve to the biceps branch and median nerve to the brachialis branch of the musculocutaneous nerve. All patients had additional nerve transfers of the spinal accessory nerve to the suprascapular nerve for shoulder abduction and external rotation. The average follow-up for all patients was 27.7 months (range, 12-48 months). **Results.** On latest follow-up, elbow flexion strength of M4 was achieved in 8/9 patients. The average time to achieve an elbow flexion grade M3 was 7.6 months (range, 5-12 months). The average elbow range of motion was  $128^{\circ} \pm 19^{\circ}$  with average elbow flexor strength of  $2.7 \pm 1.5$  kg. Shoulder abduction and external rotation was achieved in 8/9 patients (average of  $70^{\circ} \pm 41^{\circ}$  and  $61^{\circ} \pm 46^{\circ}$ , respectively). Complications include transient sensory abnormalities in four patients and transient motor weakness in one.

**Conclusion.** Nerve transfer procedures can result in functional recovery of the shoulder and elbow function in patients with upper type brachial plexus injuries.

### **Accuracy of Fluoroscopy in Closed Reduction and Percutaneous Fixation of Simulated Bennett's Fracture**

*Nathaniel S. Orillaza Jr., MD John T. Capo, MD, Tosca Kinchelow, MD, William Rossy, BS*

**Purpose:** Restoration of joint congruity has been shown to be an important factor in the prevention of arthritis in patients with Bennett's fracture. It is for this reason that surgical management is generally recommended for displaced intra-articular fractures of the base of the thumb metacarpal. Adequacy of closed reduction after pinning of Bennett's fracture is usually evaluated by uoroscopic examination. The purpose of this study is to determine the accuracy of uoroscopic examination compared to plain radiographs and direct visualization in closed reduction and percutaneous pin xation of simulated Bennett's fractures.

**Methods:** In 8 fresh-frozen cadaveric hands, Bennett's fractures were created and the incisions were closed. Under uoroscopic visualization the fractures were close reduced and pinned using 1.14-mm (0.045-in) K-wires. These reductions were all judged to be acceptably aligned with fracture stepoff and displacement less than 1.5 mm under uoroscopy. Anteroposterior and lateral plain radiographic lms were then taken to assess the reduction. Finally, the carpometacarpal joint was opened and visualized to directly assess the reduction for fracture stepoff, displacement, and gap.

**Results:** After percutaneous xation, all closed reductions were deemed acceptable. Examination with plain radiographs demonstrated an average anteroposterior view displacement of 0 mm, lateral view gap of 0.1 mm, and articular stepoff of 1.1 mm. direct examinations of the joints showed an average articular gap of 0.9 mm, stepoff of 2.1 mm, and displacement of 3.1 mm. The values for stepoff and displacement were signi cantly different when the direct measurements were compared to the uoroscopic measurements. Radiographic measurements were signi cantly different from direct measurements for displacement of the fracture fragments.

**Conclusions:** After closed reduction and percutaneous pinning of simulated Bennett's fractures in a cadaver model, the assessment of the articular gap, stepoff, and displacement as detected by uoroscopy is often in error compared to that detected by plain radiographs and direct examination. (J Hand Surg 2009;34A:637-641. Copyright © 2009 by the American Society for Surgery of the Hand. All rights reserved.)

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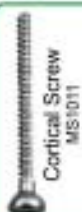
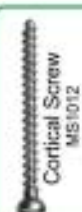










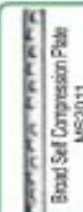


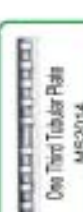























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one size

  
Athletic Elbow Supports  
CJ-001  
Blue  
S, M, L, XL, XXL

  
Elastic Elbow Support  
AJ-007  
Beige  
S, M, L, XL, XXL

● **ORTHOPEDIC PRODUCTS**

  
Comfort Hernia Aid  
CS-004  
S, M, L, XL

  
Arm Splint  
CS-001  
One size

  
Leg Splint  
CS-001  
Blue  
S, M, L, XL

  
Wrist Splint  
CS-002  
Black  
S, M, L, XL

● **KNEE SUPPORTS**

  
Athletic Parallel Supports  
CJ-008  
Blue  
S, M, L, XL, XXL

  
Charcoal Compression Knee  
AJ-011  
Grey w/ Black  
S, M, L, XL, XXL

  
Ankle Brace w/ Adj. Lace  
CB-001  
Beige or Black  
S, M, L, XL, XXL

  
Compression Elastic Ankle  
AB-004  
Black w/ Red  
S, M, L, XL, XXL

● **CERVICAL COLLAR**

  
Forming Cervical Collar  
CJ-001  
S/M, L/XL

  
2-Piece Plastic Collar  
CJ-011  
White  
S, M, L, XL

  
Pediatric Soft Collar  
AJ-002  
Skin or White  
S, M, L  
S: 3cm, M: 5cm, L: 7.5cm

  
Graduated Medical Compression Stocking  
S, M, L, XL, 2L

● **GRADUATED MEDICAL COMPRESSION STOCKING**



**United**  
Orthopaedic Corporation



**Sinawal Medical Supplies**

## Femoral

- Cobalt Chromium alloy
- 6 sizes (Left/ Right), Cemented
- Extended patella groove for better tracking
- Interchangeable between tibial sizes
- Locking screw for secure extension stem



## Tibial Insert

- UHMWPE
- 6 sizes with 7 thicknesses (8, 11, 13, 15, 18, 21, 25 mm)
- Build in metal ring reinforced for against shear force
- Screw locking to secure extension stem



## Tibial Baseplate

- Titanium alloy (Ti-6Al-4V)
- 6 sizes
- Full capture on insert for minimize movement



## Tibial Augment

- Titanium alloy (Ti-6Al-4V)
- 6 sizes 2 thickness (5, 10 mm)
- Screw locking to tibial baseplate



## Extension Press Fit Stem (Straight and Curved)



- Titanium alloy (Ti-6Al-4V)
- 3 lengths of straight stem
  - Short stem 30 mm in length diameter 14 mm
  - Long stem (75, 100 mm) with 5 diameters (10, 12, 14, 16, 18 mm)
- 100mm curved open slot distal stem comes in 5 diameters (10, 12, 14, 16, 18 mm)
- Grooves are added to increase flexibility

## Femoral Augment (Posterior and Distal)



- Cobalt Chromium alloy
- Posterior augment : 6 sizes in 4 and 8 mm thickness
- Distal augment : 6 sizes Left/ Right in 4 and 8 mm thickness
- Screw fixation

## Offset Adaptor



- Titanium alloy (Ti-6Al-4V)
- 2, 4 and 6 mm offset
- Fits both femoral or tibial component
- Full range orientation for tibial tibial alignment

**U2PSA**  
**Revision Knee**

S Y S T E M



**CE**  
6034

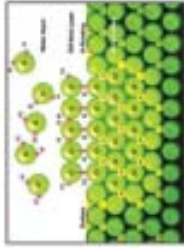
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## Advantage of U-Motion

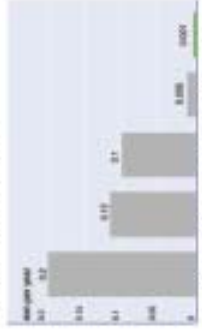
### Low Wear

- **Low Friction** - Superior tribology and friction properties protect the surface, thereby reducing the wear rate of alumina.



\*Ceramic Surface has ultra surface properties a micrograph of alumina/ceramic metal cup and the alumina.

- **Low Wear** - Wear rate of Ceramic-Ceramic wear couple is almost 1/40 to those of the metal-UHMWPE wear couple.<sup>1,2,3,4,5</sup>



### Large Diameter Head

- **Gain in Range Of Motion** - A larger head allows a wider range of motion<sup>6</sup>



\*Large ROM with large head

- **Reduce dislocation and fracture rate** - A larger head increases jumping distance<sup>6</sup>



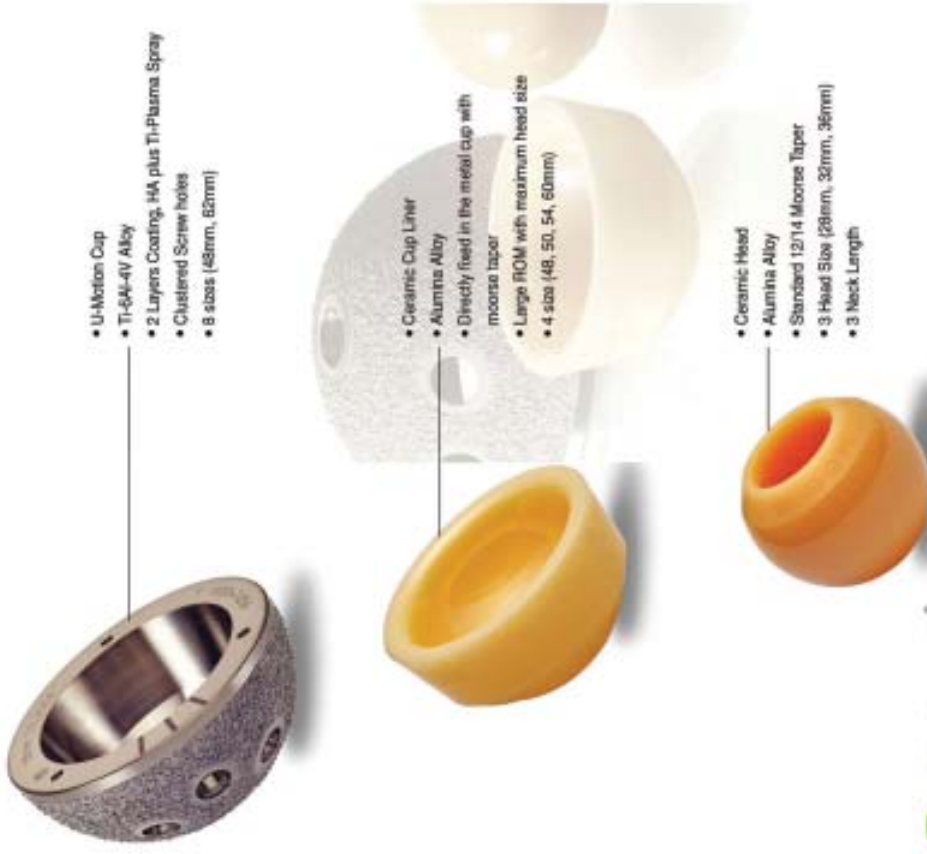
\*More resistance to dislocation

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# U2 U-Motion

## Acetabular Component



*Its a Better Choice for Young and Active Patients*

**Sinawal Medical Supplies**



## Trusted Quality Healthcare

United Laboratories, Inc. (UNILAB), the country's largest and leading pharmaceutical company, has more than 300 personal care, over-the-counter, and prescription brands to serve the Filipino family's healthcare needs.

From common illnesses (such as cough, colds, pain, allergy and fever) to diseases (such as hypertension, high cholesterol, diabetes, asthma, infections, tuberculosis, ulcer, anemia and cancer), we offer quality healthcare products that are proven safe, effective and affordable.

Many of our brands are part of the health and wellness of millions of Filipinos.

We deeply value your trust. It inspires us to always do our best to deserve it.



**Tramadol +  
Paracetamol**  
*Algesia*

Optimum Synergy  
to Optimize **Life**

37.5 mg / 325 mg TABLET



*The FASTEST STRIKE*  
brings **EXCELLENT OUTCOMES**

**Celecoxib**

**Celcoxx<sup>TM</sup>**

100mg, 200mg and 400mg Capsule

Conquer. Overcome. **Excel.**



 **Getz**  
pharma

# ETORICOXIB

## ARCOXIA™

### THE POWER TO MOVE YOU

## FAST AND LONG-LASTING POWER<sup>1,2</sup>

In a 24-hour clinical study of acute postoperative dental pain<sup>1,4</sup>

**ARCOXIA™ 120 mg<sup>b</sup> relieved pain in as early as 24 minutes after dosing**

**Analgesia persisted for as long as 24 hours**

A randomized, double-blind, placebo- and active-comparator-controlled, parallel-group, dose-ranging trial enrolled 388 men and women, 18 years of age and older with moderate-to-severe pain following extraction of 2 or more third molars, at least one of which was partially embedded in mandibular bone. Treatment consisted of ARCOXIA 60 mg (n=75), 120 mg (n=76), 180 mg (n=74), and 240 mg (n=76) once daily, naproxen 400 mg once daily (n=40), or placebo (n=49). Patients reported pain intensity and pain relief for 24 hours after dosing on a diary card. Onset of analgesia was determined with 2 patient-controlled stopwatches; the first stopwatch was stopped when patient achieved perceptible pain relief, and the second was stopped when patient achieved meaningful pain relief. The primary end point was TOPAIN. Onset of analgesia occurred as early as 24 minutes after dosing in at least 50% of patients taking ARCOXIA 120 mg. Analgesia persisted as long as 24 hours after dosing in 72% of patients taking ARCOXIA 120 mg.<sup>1,4</sup>



<sup>b</sup> ARCOXIA 120 mg should be used only for the acute symptomatic period (maximum use 8 days).

### IN PATIENTS WITH ACUTE POSTOPERATIVE DENTAL PAIN

## POWERFUL RELIEF FOR PATIENTS WITH ACUTE PAIN<sup>1,3</sup>

In these two studies<sup>1,4</sup>

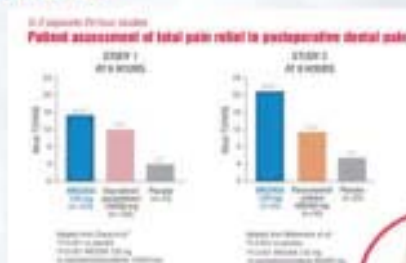
**ARCOXIA™ 120 mg offered patients superior pain relief**

• Patients receiving ARCOXIA experienced superior relief vs. oxycodone/pseudoephedrine 10/650 mg at 8 hours (P<0.001)<sup>1</sup>

• Patients receiving ARCOXIA experienced superior relief vs. paracetamol/codeine 650/650 mg at 8 hours (P<0.001)<sup>4</sup>

**Study A — Cheng:** In a double-blind, placebo- and active-comparator-controlled study, 25 patients with moderate to severe pain after surgical extraction of 2 or more third molars were randomized to receive single doses of ARCOXIA 120 mg (n=100), oxycodone/pseudoephedrine 10/650 mg (n=100), or placebo (n=25). Data were collected and assessments performed at 6 and 24 hours postdose. The primary end point was total pain relief over 8 hours (TOPAIN) calculated from time-weighted scores. Using a 5-point scale (0=none to 4=worst), patients rated pain relief at 12 prespecified time points (0.25 to 24 hours).<sup>1</sup>

**Study B — Mainwaring:** A randomized, double-blind, placebo- and active-comparator-controlled, parallel-group, single-dose trial enrolled 201 men and women 18 years of age and older with moderate-to-severe pain following extraction of 2 or more third molars, at least one of which was partially embedded in mandibular bone. Treatment consisted of ARCOXIA 120 mg once daily (n=50), naproxen sodium 500 mg once daily (n=51), paracetamol/codeine 650/650 mg once daily (n=50), or placebo (n=50). Patients reported pain intensity and pain relief on a diary card for 24 hours after dosing. The primary end point was TOPAIN.<sup>4</sup>



<sup>1</sup> The primary efficacy end point for the comparison of ARCOXIA 120 mg with oxycodone/pseudoephedrine 10/650 mg was total pain relief over 8 hours (TOPAIN). For comparison with paracetamol/codeine 650/650 mg, the primary efficacy end point was total pain relief over 8 hours (TOPAIN).

Clinical trials suggest that the selective COX-2 inhibitor class of drugs may be associated with an increased risk of thrombotic events (especially MI and stroke), relative to placebo and some NSAIDs (naproxen). As the cardiovascular risks of selective COX-2 inhibitors may increase with dose and duration of exposure, the shortest duration possible and the lowest effective daily dose should be used. The patient's need for symptomatic relief and response to therapy should be re-evaluated periodically.

Patients with significant risk factors for cardiovascular events (e.g. hypertension, hyperlipidemia, diabetes mellitus, smoking) should only be treated with etoricoxib after careful consideration.

#### REFERENCES:

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4. Mainwaring M, Thompson J, et al. A randomized, double-blind, parallel-group study comparing the analgesic effect of etoricoxib to placebo, naproxen sodium, and paracetamol/codeine using the dental extraction pain model. *Can J Pain*. 2008; 22(2):147-155.

Before prescribing, please refer to full prescribing information available at this exhibit booth.

ARCOXIA (etoricoxib) is a trademark of Merck Sharp & Dohme Corporation, a subsidiary of Merck & Co., Inc. Whitehouse Station, N.J., U.S.A.



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THE SAFETY AND EFFICACY OF  
CELECOXIB AS A COX-2 INHIBITOR

Investigational Trials in Osteoarthritis and Rheumatoid Arthritis: Preliminary and Phase Effects

DR. RICHARD L. HARRIS, DR. MICHAEL A. HARRIS, DR. C. DARRIN, and DR. STEVEN L. GIBB

celecoxib, 8, tends to all 4 trials, 80 mg/d, 100 mg/d, 200 mg/d, and 400 mg/d, with a safety profile similar to that of placebo. Celecoxib, 80 mg/d, achieved analgesic and anti-inflammatory effects in patients through celecoxib, 80 mg/d, without showing any evidence of 1 of the side effects of COX-2 inhibition associated with nonsteroidal anti-inflammatory drugs.

Analgesic and other inflammatory conditions are usually treated with drugs that inhibit pain and inflammation. Celecoxib, 80 mg/d, achieved analgesic and anti-inflammatory effects in patients through celecoxib, 80 mg/d, without showing any evidence of 1 of the side effects of COX-2 inhibition associated with nonsteroidal anti-inflammatory drugs.

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Start from a position of strength.

**CELECOXIB**

**CELEBREX<sup>®</sup>**

100mg, 200mg, 400 mg capsule

The identification and characterization of the 2 isoforms of COX has stimulated efforts to develop drugs that selectively inhibit either the production or the function of COX-2 without affecting the physiologic activity of COX-1. It is thought that such a drug would possess analgesic and anti-inflammatory properties without the adverse GI, renal, and/or platelet-related toxicity commonly associated with nonselective COX inhibitors. Celecoxib, 4-[5-(4-methylphenyl)-3-methylisoxazole-3-carboxylate], is a selective COX-2 inhibitor.

Celecoxib, 100 mg/d, achieved analgesic and anti-inflammatory effects in patients through celecoxib, 100 mg/d, without showing any evidence of 1 of the side effects of COX-2 inhibition associated with nonsteroidal anti-inflammatory drugs. Celecoxib, 200 mg/d, achieved analgesic and anti-inflammatory effects in patients through celecoxib, 200 mg/d, without showing any evidence of 1 of the side effects of COX-2 inhibition associated with nonsteroidal anti-inflammatory drugs. Celecoxib, 400 mg/d, achieved analgesic and anti-inflammatory effects in patients through celecoxib, 400 mg/d, without showing any evidence of 1 of the side effects of COX-2 inhibition associated with nonsteroidal anti-inflammatory drugs.

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