



# The Hong Kong Society for Surgery of The Hand 32<sup>nd</sup> Annual Congress 香港手外科醫學會第三十二屆學術會議

**30-31 March, 2019**

Invited International Speakers:

Marc Garcia-Elias (Spain)

Shohei Omokawa (Japan)

Rosemary Prosser (Australia)

Sarah Mee (UK)

## CARPUS DISCOVERY

**Venue:** Lecture Theatre, 7/F, Block H, Princess Margaret Hospital, Hong Kong SAR

**Co-organizers:**

Department of Orthopaedics & Traumatology, Prince of Wales Hospital

The Chinese University of Hong Kong

Department of Orthopaedics & Traumatology, Princess Margaret Hospital



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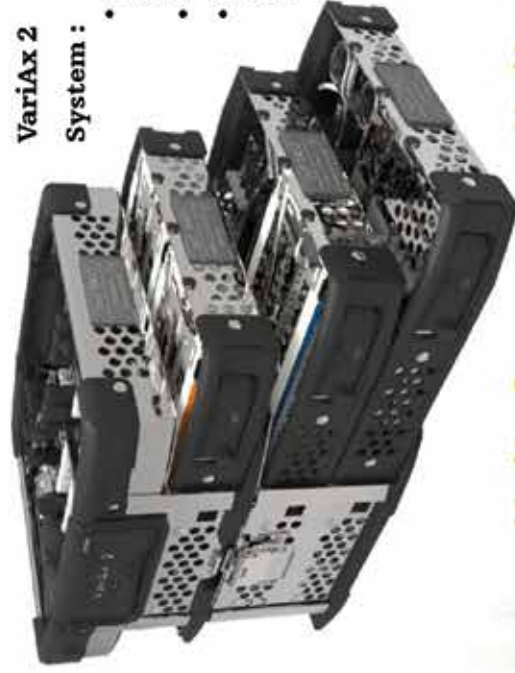
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# Message from the President



**Dr Hin-Keung WONG**

**President**

*The Hong Kong Society for Surgery of the Hand*

On behalf of the Hong Kong Society for Surgery of the Hand, it is my pleasure and honour to welcome you to join our 32nd Annual Congress to be held on 30-31 March 2019 at the Lecture Theatre of Princess Margaret Hospital. The theme of this year's congress is 'Carpus Discovery'. We have invited some reputable international speakers to come to Hong Kong to share their valuable experiences. They are Prof Marc Garcia-Elias from Spain, Prof Shohei Omokawa from Japan, Ms Sara Mee from the United Kingdom, and Dr Rosemary Prosser from Australia.

Besides the main congress, we also have a whole week packed with the nurse symposium, the therapist symposium and the cadaveric workshop. I would like to thank the Organising Committee for their hard work to make all the programmes successful and useful.

I also need to express my deep appreciation to the commercial sponsors for their continued support. Please take some time to visit the industrial exhibitions.

I would like to welcome the visiting scholars and ambassadors from mainland China and Asian Pacific countries to join our congress. It is a good opportunity to exchange the knowledge and surgical skills and strengthen the friendship among hand surgeons in this region.

Finally, I would like to thank all the participants for the support and the enthusiasm. I hope everyone find the congress educational and enjoyable.

# Message from the Co-chairpersons of the Organising Committee



**Dr Jeffrey J Siu-Cheong KOO**  
*Co-chairperson  
Organising Committee  
32nd Annual Congress*



**Dr Emily Ka-Yan YIP**  
*Co-chairperson  
Organising Committee  
32nd Annual Congress*

On behalf of the Organising Committee, it is our great pleasure to welcome you all to the 32nd Annual Congress of the Hong Kong Society for Surgery of the Hand.

The main theme of the congress this year is 'Carpus Discovery'. Wrist joint is a fascinating part of our body. All the eight carpal bones are connected together with a complex configuration of ligaments. This allows variable mobility of the hand yet without sacrificing its stability. However, once injured, the harmony between these structures are disrupted leading to instability and subsequent development of carpal degenerative arthritis. Understanding the wrist biomechanics is important in apprehending the progress of various pathology.

We are privileged to have invited world-class prominent speakers in the field of wrist pathology for this year annual congress and workshop – Professor Marc Garcia-Elias, Professor Shohei Omokawa, Professor Amit Gupta, Dr Bo Liu, Ms Sarah Mee and Dr Rosemary Prosser. Also, we have our local hand and wrist experts contributing their enormous knowledge and support to our congress.

For overseas guests and delegates, apart from the stimulating scientific programme, we would like to encourage you to explore our fascinating city and to enjoy the superb cuisine and magnificent scenery in Hong Kong. Also, it is a wonderful time to establish new friendships and to meet up with old friends here.

We would also like to take this opportunity to express our sincere thanks to all the members of the Organising Committee. We must salute them for their selfless devotion to the complex and demanding preparatory work over the last few months. Without their effort, this programme would not be a successful one.

Last but not least, we would like to pay tribute to all our trusted commercial partners for their unfailing support and contribution in providing essential instruments and equipment as well as sponsorship to the workshop and Annual Congress.

We hope that you will feel enriched in your knowledge and pursue your passion in the field of hand surgery.

# Council of the HKSSH



## **PRESIDENT**

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Dr Esther Ching-San CHOW

Dr Siu-Ho WAN

## **SECRETARIAL ASSISTANT**

Ms Gloria Oi-Yin CHAN



# Organising Committee of the 32<sup>nd</sup> Annual Congress



## CO-CHAIRPERSONS

Dr Jeffrey Justin Siu-Cheong KOO

Dr Emily Ka-Yan YIP

## MEMBERS

Ms Gloria Oi-Yin CHAN

Dr Jennette Sze-Yan CHAN

Dr Ping-Tak CHAN

Mr Eric Tsz-Chuen CHUI

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Dr Margaret Woon-Man FOK

Dr Angela Wing-Hang HO

Dr Joshua Leong-Pan HUNG

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Mr Lewis Chan-Fai LAU

Dr Anderson Siu-Ming LEUNG

Dr Priscilla Oi-Yee LEUNG

Dr Michael Chu-Kay MAK

Dr Ka-Ki TAM

Dr Sara Hoi-Yiu TONG

Dr Wing-Lim TSE

Dr Hin-Keung WONG

Dr Siu-Ho WAN

Dr Edmund Leung-Kai YAU

Dr Douglas Yu-Bun YUNG

# Overseas Faculty



**Professor Marc GARCIA-ELIAS**

*HKSSH Visiting Professor*

**Co-Founder & Staff Member**

*Institut Kaplan  
Hand and Upper Extremity Surgery  
Barcelona  
Spain*

**President-Elect**

*International Federation of Societies for Surgery of the Hand*



**Professor Shohei OMOKAWA**

**Professor**

*Department of Hand Surgery  
Nara Medical University  
Nara  
Japan*



**Professor Amit GUPTA**

**Clinical Professor of Orthopaedic Surgery**

*Department of Orthopaedic Surgery  
University of Louisville  
Kentucky  
USA*

**Chairman**

*AO North America Hand Education Committee*



# Overseas Faculty



**Dr Bo LIU**

*Consultant and Assistant Chief  
Department of Hand Surgery  
Jishuitan Hospital  
Beijing  
China*



**Ms Sarah MEE**

*Consultant Hand Therapist  
Wrist and Hand Unit  
Chelsea and Westminster Hospital  
London  
United Kingdom*



**Dr Rosemary PROSSER**

*Principal and Director  
Sydney Hand Therapy and Rehabilitation Centre  
Sydney  
Australia*

# Local Faculty



**Dr Esther Ching-San CHOW**

*Associate Consultant  
Department of Orthopaedics and  
Traumatology  
United Christian Hospital*



**Dr Sheung-Tung HO**

*Consultant  
Department of Orthopaedics and  
Traumatology  
Caritas Medical Centre*



**Dr Margaret Woon-Man FOK**

*Associate Consultant  
Department of Orthopaedics and  
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Queen Mary Hospital*



**Dr Jeffrey Justin  
Siu-Cheong KOO**

*Associate Consultant  
Department of Orthopaedics and  
Traumatology  
Alice Ho Miu Ling Nethersole Hospital*



**Dr Pak-Cheong HO**

*Chief-of-Service and Consultant  
Department of Orthopaedics and  
Traumatology  
Prince of Wales Hospital*



**Mr Lewis Chan-Fai LAU**

*Training Officer (Allied Health)  
Hospital Authority Head Office*

# Local Faculty



**Dr Yuen-Fai LEUNG**  
*Chief-of-Service and Consultant*  
Department of Orthopaedics and  
Traumatology  
Tseung Kwan O Hospital



**Dr Wing-Lim TSE**  
*Consultant*  
Department of Orthopaedics and  
Traumatology  
Prince of Wales Hospital



**Dr Michael Chu-Kay MAK**  
*Associate Consultant*  
Department of Orthopaedics and  
Traumatology  
Prince of Wales Hospital



**Dr Emily Ka-Yan YIP**  
*Associate Consultant*  
Department of Orthopaedics and  
Traumatology  
Tuen Mun Hospital



**Dr Alex Wing-Hung NG**  
*Consultant*  
Department of Imaging and  
Interventional Radiology  
Prince of Wales Hospital



# HKSSH Visiting Scholars 2019

## CHINESE SCHOLARS



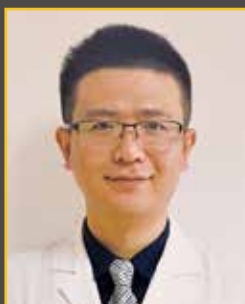
**Dr Tao LI 李涛医师**

**Associate Chief of Doctor**  
Department of Hand Surgery  
Wuhan Union Hospital  
Tongji Medical College  
Huazhong University of Science and Technology  
Wuhan, Hubei



**Dr Jingyi MI 糜菁熠医师**

**Vice President of Hospital**  
Associate Professor  
Wuxi Ninth People's Hospital  
Wuxi Orthopaedic Hospital  
Soochow University  
Wuxi City, Jiangsu



**Dr Hwawei Howard YIN 尹华伟医师**

**Hand Surgeon**  
Huashan Hospital  
Fudan University  
Shanghai

## ASIAN PACIFIC SCHOLARS



**Dr Hong-Je KANG**

**Associate Professor**  
Wonkwang University Hospital  
Iksan  
Korea



**Dr Young-Woo KIM**

**Director**  
Institute for Hand and Reconstructive Microsurgery  
W Hospital  
Daegu  
Korea

# Exchange Ambassadors 2019

## JAPANESE SOCIETY FOR SURGERY OF THE HAND (JSSH) AMBASSADOR



**Dr Yuki FUJIHARA**

*Chief Physician Consultant  
Nagoya Ekisaikai Hospital  
Nagoya  
Japan*

## KOREAN SOCIETY FOR SURGERY OF THE HAND (KSSH) AMBASSADOR



**Dr Jong-Pil KIM**

*Professor  
Chief of Hand and Microsurgery Division  
Department of Orthopaedic Surgery  
Dankook University College of Medicine  
Cheonan  
Korea*

## RUSSIAN HAND SURGERY SOCIETY (RHSS) AMBASSADOR



**Dr Nikolai KARPINSKII**

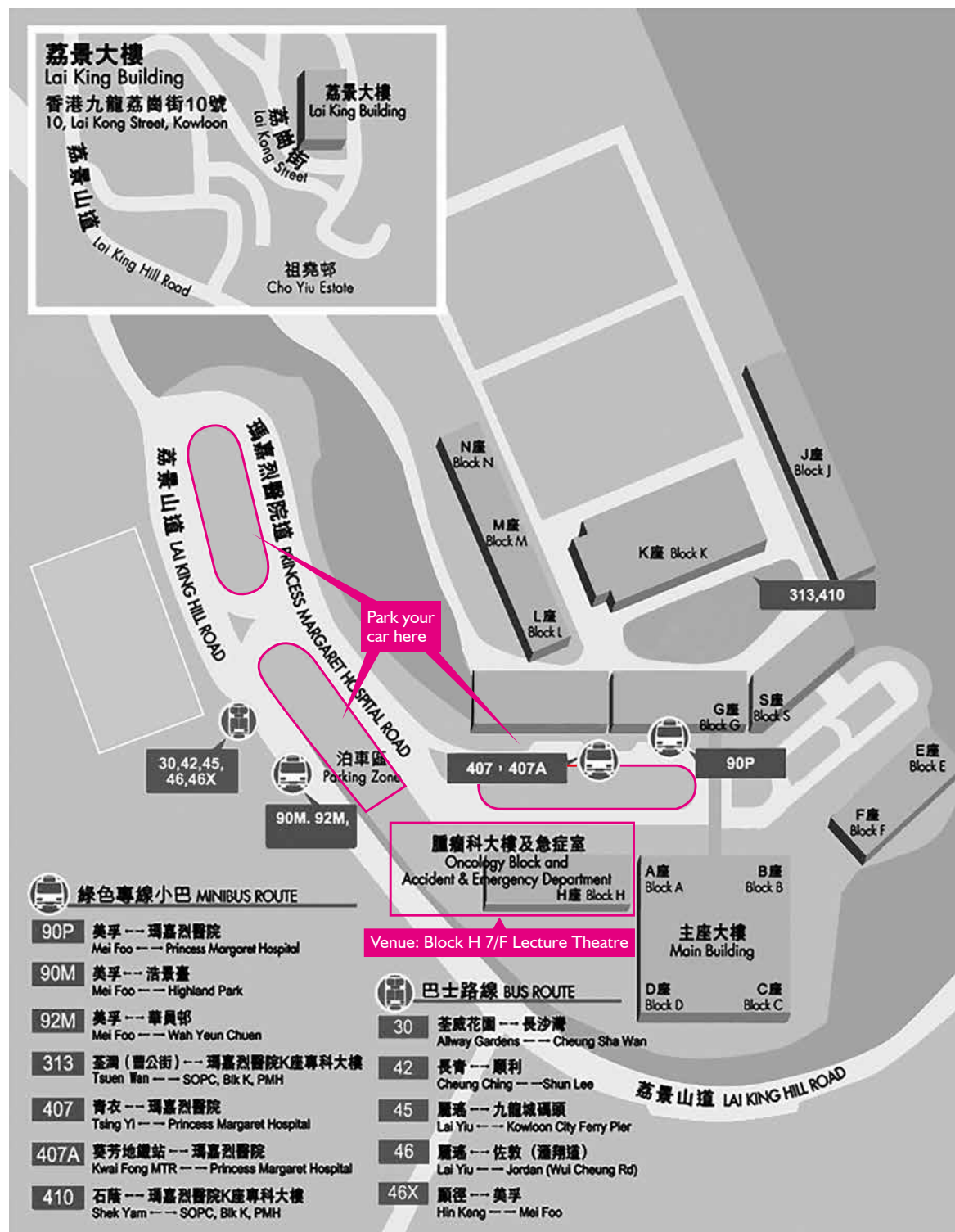
*Hand Surgeon  
Reaclinic  
Saint Petersburg  
Russia*

## Venue Information

## Venue

Lecture Theatre, 7/F, Block H, Princess Margaret Hospital

2-10 Princess Margaret Hospital Road, Lai Chi Kok, Kowloon, Hong Kong

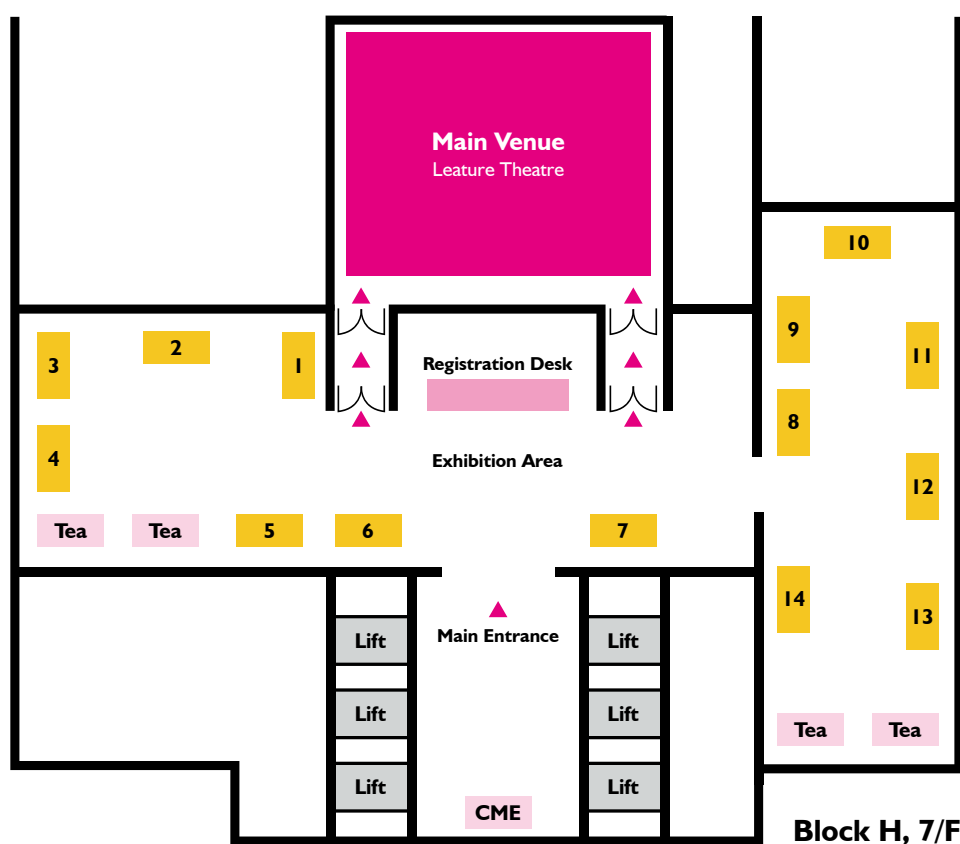




# Venue Information

## Locations of Programme

- Registration desk** : Next to the entrances of lecture theatre  
**Scientific exhibition booths** : Foyer, 7<sup>th</sup> Floor of Block H  
**Coffee and Tea** : Foyer, 7<sup>th</sup> Floor of Block H  
**Luncheon symposium** : Lecture theatre



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1	Carl Zeiss Far East Co., Ltd.
2	Karl Storz Endoscopy China Ltd.
3	Century Group
4	Hong Kin Medical Instrument Ltd.
5	The Industrial Promoting Co. Ltd.
6	Johnson & Johnson (Hong Kong) Ltd.
7	Stryker China Limited

Booth Number	Company Name
8	Convatec HK Ltd.
9	Gen-Y Medical (HK) Co. Ltd.
10	Astellas Pharma Hong Kong Co. Ltd.
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# Programme at a Glance

## 30 March 2019 (Saturday)

Time	Programme
08:00-08:30	Registration
08:30-10:14	Symposium I Advanced management in acute scaphoid fracture and scaphoid non-union
10:14-10:34	TEA BREAK
10:34-12:04	Free paper session
12:04-13:00	LUNCHEON SYMPOSIUM: Total wrist replacement
13:00-13:20	Opening ceremony and presentation of souvenirs
13:30-13:54	Plenary Lecture I Understanding wrist mechanics: A long and winding road
13:54-15:38	Symposium II Scapholunate dissociation: From acute to chronic
15:38-15:58	TEA BREAK
15:58-16:32	Plenary Lecture II Physical examination of the wrist: 5 storey approach
16:32-17:34	Symposium III Midcarpal instability
17:34-17:40	Round-up and announcement
17:40-18:40	AGM of the HKSSH
19:00-21:30	CONGRESS DINNER

## 31 March 2019 (Sunday)

Time	Programme
08:30-09:46	Symposium IV Kienböck's disease and other carpal bones avascular necrosis
09:46-10:06	TEA BREAK
10:06-11:26	Ambassadors and scholars session
11:26-11:33	RHSS Congress report
11:33-11:40	JSSH-HKSSH ambassador report
11:40-11:54	Plenary Lecture III Overview of trapezio-metacarpal (TMC) joint osteoarthritis
11:54-13:24	Symposium V First CMCJ and STT joints pathology
13:24-13:30	Closing remarks



# Detailed Programme

30 March 2019 (Saturday)

Time	Programme	Speaker	Moderator
08:00-08:30	Registration		
	<b>Symposium I</b> <b>Advanced management in acute scaphoid fracture and scaphoid non-union</b>		
08:30-08:44	Overview of acute scaphoid fracture	SC Koo	
08:44-08:58	Robotic assisted percutaneous fixation for scaphoid fractures	B Liu	
08:58-09:12	Treatment of scaphoid non-union with arthroscopic bone grafting	WL Tse	WL Tse
09:12-09:26	Treatment of scaphoid non-union with non-vascularized bone grafting	YF Leung	SC Koo
09:26-09:40	Is bone grafting always necessary for scaphoid fracture delayed union and non-union	B Liu	
09:40-09:54	Advances in radiological assessment for carpal bone fracture and instability	A Ng	
09:54-10:14	Discussion		
10:14-10:34	TEA BREAK		
10:34-12:04	Free paper session (details on page 18)		PT Chan E Yau
12:04-13:00	LUNCHEON SYMPOSIUM: Total wrist replacement	A Gupta	HK Wong
13:00-13:20	Opening ceremony and presentation of souvenirs		SC Koo Emily Yip
13:20-13:54	<b>Plenary Lecture I</b> <b>Understanding wrist mechanics: A long and winding road</b>	M Gracia-Elias	
	<b>Symposium II</b> <b>Scapholunate dissociation: From acute to chronic</b>		
13:54-14:08	Management of scapho-lunate dissociation: My way	M Garcia-Elias	
14:08-14:22	Arthroscopic management for perilunate fracture dislocation	B Liu	M Fok
14:22-14:36	Treatment of SL and LT instability with dorsal capsulodesis: My experience	S Omokawa	SC Koo
14:36-14:50	Treatment of chronic SLD: Arthroscopic assisted box reconstruction	PC Ho	
14:50-15:04	Salvage procedures for SLAC	M Fok	
15:04-15:18	Rehabilitation for scapholunate injury	S Mee	
15:18-15:38	Discussion		
15:38-15:58	TEA BREAK		
15:58-16:32	<b>Plenary Lecture II</b> <b>Physical examination of the wrist: 5 storey approach</b>	PC Ho	
	<b>Symposium III</b> <b>Midcarpal instability</b>		
16:32-16:46	The clunking wrist: Pathomechanics and treatment	M Garcia-Elias	
16:46-17:00	Management of mid-carpal instabilities: Surgeon's point of view	PC Ho	A Ho
17:00-17:14	Management of mid-carpal instabilities: Therapist's point of view	R Prosser	M Mak
17:14-17:34	Discussion		
17:34-17:40	Round-up and announcement		
17:40-18:40	AGM of the HKSSH		
19:00-21:30	CONGRESS DINNER		

# Detailed Programme

31 March 2019 (Sunday)

Time	Programme	Speaker	Moderator
<b>Symposium IV</b> <b>Kienböck's disease and other carpal bones avascular necrosis</b>			E Yip T Cheung
08:30-08:44	Kienböck's disease: An overview	E Yip	
08:44-08:58	Evidence-based treatment in Kienböck's disease	ST Ho	
08:58-09:12	Treatment of Kienböck's disease: My way	S Omokawa	
09:12-09:26	Arthroscopic reconstructive procedures for Kienböck's disease	WL Tse	
09:26-09:46	Discussion		
09:46-10:06	TEA BREAK		
10:06-11:26	Ambassadors and scholars session (details on page 18)		HK Wong A Leung
11:26-11:33	RHSS Congress report	HK Wong	
11:33-11:40	JSSH-HKSSH ambassador report	E Yau	
11:40-11:54	<b>Plenary Lecture III</b> <b>Overview of trapezio-metacarpal (TMC) joint osteoarthritis</b>	S Omokawa	E Chow L Lau
<b>Symposium V</b> <b>First CMCJ and STT joints pathology</b>			
11:54-12:08	Arthroscopic first CMCJ fusion	E Chow	
12:08-12:22	Treatment of STT arthritis	M Garcia-Elias	
12:22-12:36	Arthroscopic partial resection arthroplasty for osteoarthritis of STT joint	S Omokawa	
12:36-12:50	Treatment for STT arthritis: Pyrocarbon interposition arthroplasty	M Mak	
12:50-13:04	Update on splint treatment for first CMCJ OA	L Lau	
13:04-13:24	Discussion		
13:24-13:30	Closing remarks		SC Koo E Yip

# Detailed Programme

## Free Paper Session (30 March 2019)

No.	Time	Title	Presenter
1	10:34-10:40	TFCC foveal tear arthroscopic reinsertion using the perifoveal reinsertion technique	JWC Ting
2	10:43-10:49	Management of ulnar impaction syndrome - Triangular fibrocartilaginous complex synovectomy versus decompression surgery	JWC Ting
3	10:52-10:58	Tendon rupture with the use of radiofrequency in wrist and hand arthroscopy	K Prashant
4	11:01-11:07	Is adipofascial flap the trick to prevent adhesions after plating of the proximal phalanx? Our experience after 11 years	S Lucchina
5	11:10-11:16	A modular surface gliding implant CapFlex-PIP for proximal interphalangeal joint osteoarthritis	M Brodbeck
6	11:19-11:25	Outcome after total elbow arthroplasty: A retrospective study of 16 procedures performed from 2005-2017	OYT Wan
7	11:28-11:34	Review of claw hand deformity correction	MSY Lee
8	11:37-11:43	Comparison of the effectiveness of lumbrical splint and wrist neutral splint on patients with carpal tunnel syndrome (CTS): A single-blinded randomised study	PS Chan
9	11:46-11:52	Will PIPJ flexion exert less tensile strength on terminal extensor, applying to mallet finger treatment?	J Mak
10	11:55-12:01	Flexor tendon rupture associated with metallosis after total wrist replacement - a case report	MCK Mak

\* 3 minutes of discussion after each paper presentation

## Ambassadors and Scholars Session (31 March 2019)

No.	Time	Title	Presenter
1	10:06-10:13	Effect of concomitant injuries and their treatment on the outcome of flexor tendon repair	Y Fujihara
2	10:16-10:23	Arthroscopic management of perilunate injuries: Does it work?	JP Kim
3	10:26-10:33	Proprioceptive approach to treat the wrist pain	N Karpinski
4	10:36-10:43	A case report of surgical resection of giant intrathoracic cellular schwannoma of the brachial plexus by thoracotomy and literature review	T Li
5	10:46-10:53	Arthroscopy assisted treatment for intraosseous cyst of carpus	J Mi
6	10:56-11:03	3D printing assisted accurate arthroscopic treatment of scaphoid fracture and nonunion	H Yin
7	11:06-11:13	PQ sparing technique in distal radius metaphyseal comminution fracture	HJ Kang
8	11:16-11:23	Predictors of survival rate in fingertip replantation	YW Kim

\* 3 minutes of discussion after each paper presentation



# Abstracts of Lectures



## Overview of acute scaphoid fracture

**Dr Jeffrey KOO**

*Department of Orthopaedics and Traumatology  
Alice Ho Miu Ling Nethersole Hospital*

Scaphoid fracture is the most common carpal bone fracture and typically occurs in active young adults with four times more common in men.

Advancement in radiological modalities such as CAT and MRI scan helps to improve the diagnosis of occult fracture and assess the vascularity of the scaphoid. However, despite these advances, scaphoid fracture treatment can be still challenging for both the surgeon and patient.

While cast immobilization is still the traditional treatment for stable undisplaced scaphoid fracture, operative treatment may be warranted if early return to is the major concern of the patient. For displaced fractures, internal fixation is the preferred technique through open reduction in either volar or dorsal approach. Arthroscopic-assisted approach can serve as an adjunct when combined to percutaneous technique.

In summary, acute scaphoid fracture treatment needs to consider both the personality of the fracture as well as patient's concern.



## Robotic assisted percutaneous fixation for scaphoid fractures

**Dr Bo LIU**

*Department of Hand Surgery  
Beijing Jishuitan Hospital*

Percutaneous fixation has been developed as a viable alternative to open surgery for undisplaced scaphoid fractures. However, this technique is technically demanding due to the small size and complex anatomy of the scaphoid. Despite using modern fluoroscopic methods, an experienced hand surgeon can still struggle to accurately place a screw within the scaphoid. The aim of the present preliminary clinical study was to demonstrate the efficacy, accuracy and safety of using a robotic-assisted computer navigated technique for percutaneous fixation of the scaphoid.

Ten males with acute undisplaced waist fractures underwent fixation with this method using a commercially available three-dimensional fluoroscopy unit and robotic navigation system. The mean total operative duration was 40 min, which comprised of a setup time of 18 min and planning and surgical time of 22 min. All patients required a single guidewire insertion attempt only and there were no screw protuberance or other complications. All fractures united at a mean of 8 weeks. At a mean follow-up of 6.5 months (range 6-8), the mean Mayo wrist score was 96.5, patient-rated wrist evaluation was 1.7, flexion-extension arc was 96.5% and grip strength was 91% of the contralateral wrist. Robotic-assisted percutaneous scaphoid fixation is feasible, safe and accurate, and offers a viable method for the treatment of these injuries.

# Abstracts of Lectures



## Treatment of scaphoid non-union with arthroscopic bone grafting

**Dr Wing-Lim TSE**

*Department of Orthopaedics and Traumatology  
Prince of Wales Hospital*

Scaphoid non-union is an uncommon complication of scaphoid fracture that may progress to carpal instability, progressive collapse and symptomatic arthritis. Before progressing to arthritis, achieving union with reconstruction of scaphoid length and alignment is recommended. Autologous bone grafting is the most widely accepted surgical choice and around 80-84% union rate were reported for vascularized and non-vascularized bone grafting techniques. Arthroscopic bone grafting is a minimal invasive way to deliver autologous bone graft to non-union site while preserving the local vascularity and ligamentous integrity around the scaphoid. It also allows accurate assessment of associated ligament injury, cartilage status for staging of arthrosis, and meticulous debridement of fibrous tissue and cysts at non-union site and direct assessment of vascularity of proximal and distal fragments. It is also indicated in patient with reducible DISI deformity. Fixation can be achieved with percutaneous K-wires or headless compression screws. We report a union rate of around 90% with minimal complication.



## Treatment of scaphoid non-union with non-vascularized bone grafting

**Dr Yuen-Fai LEUNG**

*Department of Orthopaedics and Traumatology  
Tseung Kwan O Hospital*

The incidence is around 5-10% followed conservative treatment of acute scaphoid fracture. It is arbitrarily defined as > 6 months without radiological union. The commonly used classification is Modified Herbert Classification:

D1: fibrous union	D2: pseudoarthrosis
D3: D2+ DISI	D4: AVN with collapsed of the proximal pole

However, the radiomorphology of the scaphoid union is not very useful clinically to predict the union rate or vascularity of the proximal pole unless definite collapse, fragmentation and deformity of proximal pole in D4. In fact, the pre-op positive blood supply detected by MRI is only about 60% with correlated the vascularity of the proximal fragment intra-operatively, and a 6% non-union rate is found in patients treated with non-vascularized bone graft irrespective of the intra-op punctate bleeding of the proximal pole provided no collapse of proximal pole existed pre-operatively. Vascularized bone grafting is still a controversial issue for the standard treatment of nonunion of the scaphoid.

The common types of non-vascularized bone graft include Matti-Russe inlay grafts; Winged graft; Iliac cancellous graft; Interposition trapezoidal graft; Trephine bone graft and Arthroscopic bone grafting. The healing rate can approach 85-90%.

My favorite technique is trephine bone graft technique, which can be performed dorsally and volarly. It can correct the deformity and refresh the fibrous nonunion site in one goal. Other advantages include a stable intrinsic configuration of the bone graft; stable internal fixation; minimal invasiveness; good union rate, simplicity, and a short operative time.

# Abstracts of Lectures



## Is bone grafting always necessary for scaphoid fracture delayed union and non-union

**Dr Bo LIU**

*Department of Hand Surgery  
Beijing Jishuitan Hospital*

More recent evidence has shown percutaneous fixation alone can be successful for treating stable scaphoid nonunions connected with fibrous tissue or intact cartilaginous cap, and demonstrated that extensive bone resorption at the fracture site is not an absolute indication for bone grafting. However, fracture stability can be difficult to assess using closed means. The advent of wrist arthroscopy has provided a minimally invasive means of assessing scaphoid pathology.

This study reports the utility of wrist arthroscopy in the treatment of scaphoid delayed and nonunions. Twenty-five patients underwent wrist arthroscopy at a mean duration of 16 weeks following injury. Intraoperatively, 11 fractures were deemed stable to probing and underwent percutaneous screw fixation only; 14 were unstable and received arthroscopic bone grafting with percutaneous fixation.

All fractures united. At a mean follow-up of 12 months, the average Mayo wrist score was 96 and PRWE was 3. Bone grafting is not always necessary in the treatment of scaphoid delayed / nonunions. Arthroscopy can help in the decision making whilst avoiding the potential morbidity of an open procedure.



## Advances in radiological assessment for carpal bone fracture and instability

**Dr Alex NG**

*Department of Imaging and Interventional Radiology  
Prince of Wales Hospital*

Advancement in the techniques of CT and MRI in recent ten years have improved the radiological assessment of fractures. As CT and MRI scanners are more easily available, delayed diagnosis of the occult fracture should become history.

Although they are small structures, the wrist ligaments causing carpal and DRUJ instability are now more clearly depicted by high power MRI machine. Together with the use of arthrogram and traction device, the detection of tear and pre-operative assessment of TFCC, SL and LT ligaments by MRI have become usual practice.

This lecture aims to highlight the important tips for diagnosis of fracture of the carpal bone and injury of wrist ligaments.

# Abstracts of Lectures



## **Plenary Lecture I** **Understanding wrist mechanics:** **A long and winding road**

**Prof Marc GARCIA-ELIAS**  
*Institut Kaplan*  
*Hand and Upper Extremity Surgery*

The title of this Clinical Perspective has been borrowed from a song by Paul McCartney, a song that emphasizes the difficulties of reaching one's dreams. If I choose that title, it is because it describes quite well my own experience as wrist investigator. Truly, my struggle to understand carpal mechanics has been like a long and winding road; an exciting road, indeed, but one not devoid of unexpected curves and misleading signposts: an endless road for a hopeless wrist enthusiast.



## **Management of scapho-lunate dissociation:** **My way**

**Prof Marc GARCIA-ELIAS**  
*Institut Kaplan*  
*Hand and Upper Extremity Surgery*

Scapholunate instability can lead to posttraumatic dysfunction of the wrist. If unrecognized, it commonly leads to degenerative osteoarthritis. Numerous reparative techniques have been proposed with mixed long-term success. We present a technique that uses a distally based strip of the extensor carpi radialis longus to better maintain reduction of the scaphoid and reconstruct the volar and dorsal scapholunate ligament and the scaphotrapezium-trapezoid ligament. To illustrate the technique, we describe a clinical case with 17 months of follow-up.

# Abstracts of Lectures



## Arthroscopic management for perilunate fracture dislocation

**Dr Bo LIU**

*Department of Hand Surgery  
Beijing Jishuitan Hospital*

This study was to evaluate the outcomes of perilunate dislocations and fracture-dislocations treated with arthroscopically assisted mini-invasive reduction and fixation. 24 patients who had a dorsal perilunate dislocation or fracture-dislocation were treated with arthroscopically assisted reduction and percutaneous fixation. The mean follow-up was 14.8 months. Clinical outcomes were evaluated on the basis of range of motion; grip strength; Mayo wrist score; Quick Disabilities of the Arm, Shoulder and Hand questionnaire; and Patient-Rated Wrist Evaluation score. Radiographic evaluations included time to scaphoid union, carpal alignments, and any development of arthritis.

The range of flexion-extension motion of the injured wrist averaged 86% of the values of the contralateral wrist. The grip strength of the injured wrist averaged 83% of the values of the contralateral wrist. The mean Quick Disabilities of the Arm, Shoulder and Hand score was 6, and the mean Patient-Rated Wrist Evaluation score was 10. According to the Mayo wrist scores, overall functional outcomes were rated as excellent in 13 patients (54%), good in 6 (25%), fair in 4 (17%), and poor in 1 (4%). Reduction obtained during the operation was maintained within a normal range in all patients. Arthritis has not developed in any patient at final follow-up.

The current follow-up results showed that arthroscopically assisted minimally invasive reduction with percutaneous fixation is a reliable and favorable alternative in the treatment of perilunate injuries.



## Treatment of SL and LT instability with dorsal capsulodesis: My experience

**Prof Shohei OMOKAWA**

*Department of Hand Surgery  
Nara Medical University*

Traumatic intercarpal ligament tears occur not only as an isolated lesion but also as part of a complex injury. Complete tears of the scapholunate (SL) and lunotriquetral (LT) ligament can cause carpal malalignment, and longstanding instability may lead to degenerative arthritis of the wrist. A variety of surgical procedures is available for the treatment of these intercarpal ligament lesions with varying degrees of success.

The purpose of this presentation is to describe the indication, surgical technique and our clinical results of dorsal ligament capsulodesis in a bi-pedicled fashion using the dorsal intercarpal and radiocarpal ligament in an attempt to reinforce the dorsal SL and LT interosseous ligament in patients with dynamic, reducible dissociative carpal instability.



# Abstracts of Lectures



## Treatment of chronic scapho-lunate dissociation: Arthroscopic assisted box reconstruction

**Dr Pak-Cheong HO**

*Department of Orthopaedics and Traumatology  
Prince of Wales Hospital*

**Background** Both dorsal and volar portions of the scapholunate interosseous ligaments are major stabilizers of the scapholunate (SL) joint. Most reconstruction methods to restore scapholunate stability do not address the volar constraints and frequently fail to reduce the SL gapping. Wrist arthroscopy allows a complete evaluation of the SL interval, accompanying ligament status and associated SLAC wrist changes. It enables simultaneous reconstruction of the dorsal and palmar SL ligaments anatomically with the use of tendon graft in a box-like structure.

**Materials and Methods** From Oct 2002 to June 2012, the treatment method was applied in 17 patients with chronic SL instability of average duration of 9.5 months (range 1.5-18 months). There were 3 Geissler grade 3 and 14 grade 4 instability cases. The average pre-op SL interval was 4.9mm (range 3-9mm). DISI deformity was present in 13 patients. Six patients had stage I SLAC wrist change radiologically. Concomitant procedures were performed in 4 patients.

**Description of Technique** With the assistance of arthroscopy and intra-operative imaging guide, a combined limited dorsal and volar incision exposed the dorsal and palmar SL interval without violating the wrist joint capsule. Bone tunnels of 2.4mm were made on the proximal scaphoid and lunate. A palmaris longus tendon graft was delivered through the wrist capsule and the bone tunnels to reduce and connect the two bones in a box-like fashion. Once the joint diastasis is reduced and any DISI malrotation corrected, the tendon graft was knotted and sutured on the dorsal surface of SL joint extra-capsularly in shoe-lacing manner. The scaphocapitate joint was transfixed with K wires to protect the reconstruction for 6-8 weeks.

**Results** The average follow up was 48.3 months (range 11-132 months). Thirteen returned to their pre-injury job level. Eleven patients had no wrist pain and 6 had some pain on either maximum exertion or at the extreme of motion. The average total pain score was 1.7/20 compared with the preoperative score of 8.3/20. The post-operative average total wrist performance score was 37.8/40, with an improvement of 35%. The average extension range improved for 13%, flexion range 16%, radial deviation 13% and ulnar deviation 27%. Mean grip strength was 32.8kg. (120% of the pre-operative status, 84% of the contralateral side) The average SL interval was 2.9mm (range 1.6- 5.5mm). Recurrence of a DISI deformity was noted in 4 patients without symptoms. Ischaemic change of proximal scaphoid was noted in one case without symptoms or progression. There were no major complications. All patients were satisfied with the procedure and outcome.

**Conclusion** Our method of reconstructing both the dorsal and volar SL ligament, in a minimally invasive way, is a logical and effective technique to improve the SL stability. The potential risk of ischemic necrosis of the carpal bone is minimized by preservation of the scaphoid blood supply, the small size of the bone tunnels created and the inclusion of the capsule at the reconstruction site.

# Abstracts of Lectures



## Salvage procedures for SLAC

**Dr Margaret FOK**

*Department of Orthopaedics and Traumatology  
Queen Mary Hospital*

When degenerative process is established in the presence of scapholunate dissociation, salvage procedure instead of reconstruction of ligament needs to be considered. Scapholunate advanced collapse (SLAC) is being classified into 4 stages (Watson's classification), to delineate the severity of the degeneration. It begins at the radial styloid and the distal scaphoid (stage 1), followed by scaphoid and the entire scaphoid facet of the radius (stage 2), capitate and lunate (stage 3), and pancarpal arthritis (stage 4). Depending on the severity and the location of the arthritis, different salvage procedures are indicated. The two most common, motion preserving, salvage procedures are four corner fusion and proximal row carpectomy, which can be done as open or arthroscopy procedures. In recent years, limited fusion is also being advocated. This talk will discuss the indications, contraindications, advantages, disadvantages and outcomes of these procedures.



## Rehabilitation for scapholunate injury

**Ms Sarah MEE**

*Wrist and Hand Unit  
Chelsea and Westminster Hospital*

Complex biomechanics of carpal movement, altered by ligament attenuation, laxity or partial ligament injuries, provides a challenge to therapists and surgeons following scapholunate ligament (SLL) injuries.

Therapists use modalities to increase proprioception, cognitive motor retraining and motor patterning to dynamically provide external control to a mechanically unstable wrist, resulting in pain relief and return to normal function. Hand therapy should be considered first for partial SLL injuries, as well as pre-operatively; to develop core muscle function, retrain correct motor patterns and maximize proprioceptive input from the ligaments to the brain and the reflex muscle arcs.

This is a clinical problem requiring a team decision-making.

# Abstracts of Lectures



## Plenary Lecture II Physical examination of the wrist: A 5-storey approach

**Dr Pak-Cheong HO**

*Department of Orthopaedics and Traumatology  
Prince of Wales Hospital*

A patient presenting with wrist pain is as common to a hand surgeon as a patient with cough presenting to the family doctor. And just like a cough, there is a myriad of reasons as to why patients having wrist pain. Other than a thorough but targeted history, the hand surgeon needs to have an organised examination of the patient's wrist and upper limb in order to narrow down the likely cause of the pain.

We present a systematic method of wrist examination. The 4 main stages of examination are 1/ Screening tests 2/ Looking 3/ Feeling and 4/ Moving / Provocative tests. Screening tests are performed to gain a rapid impression of how the wrist moves and in particular, whether the pain is likely to be from the distal radial ulnar joint (DRUJ). In looking, we examine for swelling, scars, deformity, carpal supination and signs of ulnar bossing.

Then we move into the crux of the examination, feeling and moving. In feeling, we divide the wrist into a 4 levels – at the distal radius and ulna, the proximal carpal row, the distal carpal row and the metacarpal bases. We move in a spiral shaped fashion much like walking up-stairs, starting at the radial styloid and ending at the base of the carpometacarpal joints. We palpate each important structure of each level with the tip of our thumb and compare any painful spot with the contralateral side if in doubt.

The **5 level moving/ provocative tests** is where we can thoroughly include and exclude likely pathologies. The approach is best exemplified in examining chronic ulnar-sided wrist pain. Much like being in an elevator, we examine the wrist in 5 levels starting typically from first level at the DRUJ, moving up the elevator to the ulno-carpal joint, inter-carpal joints, mid carpal joints and finally the carpometacarpal joint at the top. At each of the 5 levels, there are 2-3 specific provocative tests which we will explain in detail in the presentation. These tests will examine and stress sequentially the DRUJ, triangular fibrocartilaginous complex, ulno-carpal joint, piso-triquetral joint, luno-triquetral joint, midcarpal joint, 5th carpo-metacarpal joint as well as their surrounding ligaments and tendons. The examination concludes with confrontational tests to assess the active function and control of the wrist. All these provocative tests are reproducible and not difficult to learn and perform. Similar concept and examination approach can also be applied to evaluate radial sided and central wrist pain.

Once mastered, this thorough, focused systematic method of examining the wrist can be performed in a few short minutes. Absence of consistently positive physical sign at repeated occasions suggests of a non-organic etiology. The information gained from this examination approach can narrow down the pathology precisely for the vast majority of patients thereby demystifying the enigma of chronic wrist pain.

# Abstracts of Lectures



## The clunking wrist: Pathomechanics and treatment

**Prof Marc GARCIA-ELIAS**

*Institut Kaplan*

*Hand and Upper Extremity Surgery*

Clunking of the wrist is often the result of a combined radiocarpal and midcarpal ligament insufficiency, coupled with inadequate neuromuscular coordination. When symptomatic, these wrists may benefit from splinting, isometric exercising of specific muscles and advice on activity modification. Failing this, different surgical strategies have been proposed, depending on the location of dysfunction. When the clunking derives from an isolated injury of one joint, reconstruction of its inadequate ligaments may be an effective solution. However, soft tissue procedures tend to fail when clunking results from multilevel instability. In these cases, partial carpal arthrodesis is an alternative. Although effective in eliminating the clunking, midcarpal fusion is associated with alteration of the so-called "dart-throwing" motion, the most common rotation in daily activities, and hence is not recommended. Radiolunate fusion, by contrast, appears to be a less morbid alternative, with the benefit of eliminating the painful clunking while preserving a good range of dart-throwing motion.



## Management of mid-carpal instabilities: Surgeon's point of view

**Dr Pak-Cheong HO**

*Department of Orthopaedics and Traumatology*

*Prince of Wales Hospital*

**Background** Palmar mid-carpal instability (PMCI) is an uncommon form of non-dissociative carpal instability. It is however an important cause of chronic ulnar wrist pain. Diagnosis can be difficult and high index of suspicion is mandatory. Pathomechanics and optimal treatment of PMCI remains uncertain. We propose an algorithm of clinical diagnosis and evaluate the outcome of our management.

**Materials and Methods** Between 2000 and 2011, 16 patients including 7 male and 9 female of a mean age of 33.9 diagnosed with PMCI were reviewed for their clinical, radiologic and arthroscopic features. All patients presented with ulnar wrist pain in their dominant hands except in one. Initial management included a disease specific anti-carpal supination splint. Refractory cases were evaluated by arthroscopy and treated by arthroscopic thermal shrinkage using radiofrequency appliance as an interim or definite surgical intervention. Shrinkage was targeted at the ulnocarpal ligament at the radiocarpal joint and triquetrum-hamate ligament at the mid-carpal joint. Non-responsive or recurrent cases were managed by a novel technique of dorsal radiocarpal ligament reconstruction procedure using a pisiform based split flexor carpi ulnaris (FCU) tendon graft.

**Results** In all cases, the mid-carpal clunk test was positive with pain. Other common clinical features included: lax ulnar column, carpal supination and volar sagging of the wrist, increased piso-styloid distance, wrist pain aggravated by passive hand supination and not by passive forearm supination, increased wrist pain upon resisted pronation, which could be partially alleviated by manually supporting the piso-styloid interval. Common arthroscopic findings were excessive joint space at triquetrum-hamate interval and reactive synovitis over the ulnar compartments. Nine patients (56.3%) responded well to splinting alone at average follow up of 3.3 years. Arthroscopic thermal shrinkage was performed in 5 patients with recurrence in 2 cases. Five patients received split FCU tendon graft for ligament reconstruction. All patients showed improvement in the wrist performance score (pre-op 21.0, post-op 36.6 out of 40) and pain score (pre-op 10.0, post-op 2.2 out of 20) at the final follow up of average 86 months (range 19-155 months). Grip strength improved from 66.9% to 82.0% of the contralateral side.

Wrist motion slightly decreased from a flexion /extension arc of 132° to 125°. Three patients were totally pain free, one had mild pain and one had moderate fluctuating pain. All patients returned to their original work. X-ray showed no arthrosis.

**Conclusion** PMCI is an uncommon but significant cause of chronic ulnar wrist pain. We have developed a clinical algorithm for diagnosis of the condition. The natural history seems to favour a benign course. Conservative treatment with an anti-carpal supination splint is recommended as the initial management. Surgical options for resistant cases include arthroscopic thermal shrinkage or soft tissue reconstruction. The reconstruction of the dorsal radiocarpal ligament using a pisiform based split FCU tendon graft provides reliable restoration of the carpal stability with good long term outcome and few complication. This should be considered a viable alternative to limited carpal fusion.

# Abstracts of Lectures



## Management of mid-carpal instabilities: Therapist's point of view

**Dr Rosemary PROSSER**

*Sydney Hand Therapy and Rehabilitation Centre*

Instability of the midcarpal joint is not as common as other types of wrist instability. Ligamentous laxity allows a dynamic flexion deformity in the proximal row as the distal row is allowed to sublux volarly on the proximal row. Clinically a clunk with ulnar deviation in pronation is thought to be due to the abrupt reduction of the distal row on the proximal row. Other clinical signs include a prominent ulnar head with an ulnar sided wrist sag and tenderness at the triquetohamate joint. A mid carpal sag in flexion may also be present.

Midcarpal instability generally presents when wrist pain becomes a problem. It may become obvious after a minor injury and can be difficult to manage in the athlete.

Management usually involves:

1. Activity modification
2. An orthosis or taping to pronate the carpus
3. An exercise program to promote muscular support and proprioceptive awareness



## Kienböck's disease: An overview

**Dr Emily YIP**

*Department of Orthopaedics and Traumatology  
Tuen Mun Hospital*

Kienböck's disease (KD) was first described a century ago as avascular necrosis of the lunate. Numerous studies have supported its genetic, anatomical, vascular and metabolic associations.

Factors that make the lunate at risk to develop Kienböck's disease include:

- Anatomical variations that cause increase loading on the radial aspect of lunate or radiocarpal joint.
- Repetitive trauma leading to stress microfracture of the lunate.
- Vascular variations or disruption of venous outflow that jeopardize the normal circulation in the lunate.

Symptoms of Kienböck's disease are vague and can present at different stages of the disease. A comprehensive classification system was proposed by Lichtman and Bain, in respect to the osseous, vascular and cartilage status of the disease. This classification determines the recommended treatment based on patient's age, the stage of the lunate and secondary changes of the wrist.

Controversy exists regarding the appropriate treatment modality because of marked variation in the natural progression of KD and the lack of long-term outcome studies. Wrist arthroscopy is a useful tool to assess the status of articular chondral surfaces. Conservative treatment is mostly adopted for early stage disease and surgical procedures for later stage. Combined consideration of clinical symptom and signs, functional assessment, together with appropriate imaging and arthroscopic findings can guide our management.



# Abstracts of Lectures



## Evidence-based treatment in Kienböck's disease

**Dr Sheung-Tung HO**

*Department of Orthopaedics and Traumatology  
Caritas Medical Centre*

Kienböck's disease is conventionally classified or staged by plain radiographic findings with or without MRI findings. The natural history of Kienböck's disease has been described based on serial changes of plain radiographic findings rather than the articular changes. There is only moderate correlation between radiographic findings and symptoms. Recently, arthroscopic classification based on articular status of the central carpal column is devised. However, there are only a few papers reporting the treatment outcomes using the new classification system.

Many surgical treatments for Kienböck's disease have been described and reported based on Lichtman's radiographic classification. The majority of them are retrospective non-controlled case series. The level of evidence of treatment studies is generally level IV (only a few are level III) without long-term follow-up. Furthermore, there are only a few studies on the natural history of non-surgically treated Kienböck's disease. It remains undetermined whether the improved outcomes after surgical intervention are superior to placebo or the natural history of the Kienböck's disease; this is particularly relevant in early disease stages. The prediction of progression of asymptomatic disease to symptoms or functional disability is still obscure. Clinical studies, especially those with higher level of evidence, and basic biomechanical studies relevant to surgical treatment are reviewed to reflect the extent of existing research evidence at hand for the management of Kienböck's disease.



## Treatment of Kienböck's disease: My way

**Prof Shohei OMOKAWA**

*Department of Hand Surgery  
Nara Medical University*

Treatment strategy of Kienböck's disease has been determined based on patient characteristics such as age, the activity of daily living, the degree of symptom severity, and disease characteristics such as radiographic staging and osseous vascularity. Recent literature described the use of arthroscopic evaluation, and adequate treatment can be selected according to articular cartilage-based classification. I would like to introduce my treatment strategy using arthroscopy for patients with Kienböck's disease. In the cases where young adult patients had congruent radiocarpal joint surface and relatively healthy articular cartilage, arthroscopic lunate decompression was selected by partial capitate head resection. Arthroscopic lunate resection was performed for elderly patients with articular cartilage damage and lunate fragmentation.

I will also talk about biomechanical basis of arthroscopic procedures described here, and the postoperative functional and radiological outcomes will be presented.

# Abstracts of Lectures



## Arthroscopic reconstructive procedures for Kienböck's disease

**Dr Wing-Lim TSE**

*Department of Orthopaedics and Traumatology  
Prince of Wales Hospital*

Conventionally, treatment of avascular necrosis of lunate (Kienböck's disease) is based on symptom and Lichtman radiographic staging. Arthroscopy allows more detailed and accurate assessment of the 'functional' cartilage and Begg and Bain's classification may aid in surgical decision-making. With advances in arthroscopic technique and instrumentation, arthroscopic intervention is now possible which include debridement, core decompression and even advanced reconstruction like carpectomy, limited carpal fusion and bone grafting. Some of these techniques do not burn the bridge for conventional revascularisation procedure in case outcome following surgery is not satisfactory.



## Plenary Lecture III

### Overview of trapezio-metacarpal (TMC) joint osteoarthritis

**Prof Shohei OMOKAWA**

*Department of Hand Surgery  
Nara Medical University*

TMC joint osteoarthritis occurs most often in women over the age of 40, and the typical patients describe the gradual onset of discomfort and dullness around the thenar area. Advanced arthritis often leads to painful joint subluxation with diminished mobility and strength. Treatment options depend on the symptoms and the radiographic stage. The painful hypermobile thumb with preserved articular cartilage requires joint stabilization or osteotomy. Although joint fusion provides reliable pain relief for advanced arthritis, the major strategies in motion-preserving treatments have included simple excision of the trapezium, trapeziectomy with interposition and/or ligament reconstruction.

Arthroscopy has brought minimally invasive treatment for small joint arthritis of the hand. This presentation will describe how we have been struggling to achieve both mobility and stability of the thumb by minimum invasive approach. The indication, surgical technique and outcomes of arthroscopy-assisted surgery for TMC joint osteoarthritis will be presented.

# Abstracts of Lectures



## Arthroscopic first CMCJ fusion

**Dr Esther CHOW**

*Department of Orthopaedics and Traumatology  
United Christian Hospital*

### Local Study

Our local study recruited all cases with Eaton III thumb CMCJ osteoarthritis treated with arthroscopic fusion from January 2015 to December 2017. There were a total of 13 patients with 15 arthrodesis procedures performed. The average age was 62.2 with M:F = 2:11. The average follow-up time was 29.2 months (14-46months). There was improvement of pain score at post-op 3 months ( $p<0.001$ ), 6 months ( $p<0.001$ ) and 12 months ( $p<0.001$ ). There was improvement of grip strength and pinch strength at 12 months ( $p<0.001$ ). The Dash score showed improvement at 3 months ( $p=0.01$ ). There was no significant change in the range of motion of the thumb and the Kapandji score. There was no major complication such as infection or implant related complication. There was one case of pseudoarthrosis (6.7%).

### Conclusion

Arthroscopic 1st CMCJ fusion is a feasible treatment option for Stage III thumb CMCJ osteoarthritis. It provides excellent pain relief, restoration of thumb strength and stability, preservation of thumb mobility, and hence improvement in hand function. Advantages of arthroscopic fusion include: 1) clear assessment of joint before decision for fusion; 2) a small scar and minimal disturbances of surrounding joint capsule and soft tissue; 3) avoidance of tendon adhesions, tendonitis and 4) better preservation of blood supply resulting in better union rate.



## Treatment of STT arthritis

**Prof Marc GARCIA-ELIAS**

*Institut Kaplan  
Hand and Upper Extremity Surgery*

Resection arthroplasty is an old, and yet reliable, solution for the isolated osteoarthritis (OA) of some joints of the hand.

With low rate of complications, this technically undemanding option is ideal for the scapho-trapezial-trapezoidal joint OA, as well as for the OA of the carpometacarpal joints of the fingers.

This talk reviews its indications, surgical, techniques and results.

# Abstracts of Lectures



## Arthroscopic partial resection arthroplasty for osteoarthritis of STT joint

**Prof Shohei OMOKAWA**

*Department of Hand Surgery  
Nara Medical University*

Isolated STT arthritis is less common than SLAC patterns of arthritis, and the etiology of STT arthritis is not as well understood. We conducted in-vivo three-dimensional kinematic analysis of the wrist in patients with isolated STT arthritis and normal volunteers. Clinically, I have treated patients with symptomatic STT-OA without carpal deformity by arthroscopic distal scaphoid resection. As a short- to mid-term result, arthroscopic distal scaphoid resection alone can reduce pain and improve functional outcomes for early to mid-stage isolated STT-OA in patients without DISI deformity. Resection of greater than 3 mm of the distal scaphoid may result in carpal malalignment.

I would like to discuss about characteristics and potential etiology of isolated STT-OA and how we can reduce symptom by minimum invasive arthroscopic surgery and can prevent subsequent carpal instability after distal scaphoid resection.



## Treatment for STT arthritis: Pyrocarbon interposition arthroplasty

**Dr Michael MAK**

*Department of Orthopaedics and Traumatology  
Prince of Wales Hospital*

STT joint arthritis is the second commonest site of degenerative arthritis in the wrist, and has a reported incidence ranging from 16-59%. Various treatment options exist, with STT fusion being a traditional and established treatment for isolated STT arthritis. However, there is a concern for adverse secondary effects on carpal mechanics causing radiocarpal impingement and possibly arthritis, and loss of motion particularly in the dart-thrower's plane. Resectional arthroplasty relieves joint loading and symptoms but may lead to extension of the proximal carpal row and is contraindicated in the presence of pre-existing DISI deformity. Interposition, either by autologous tendon or capsule or by prosthetic spacer, attempts to avoid this complication and preserve grip strength.

In our center, joint debridement by arthroscopic means is the first line of treatment after failed conservative treatment, and resectional arthroplasty with pyrocarbon interposition is offered to those with persistent pain after debridement. We prefer resection of the proximal trapezium and trapezoid to that of the distal scaphoid to better preserve the STT ligament complex and prevent destabilization. The procedure is performed via an arthroscopic approach with dorsal and volar STTJ portals. Pyrocarbon interposition is done from a dorsal mini-open incision. Post-operatively dorsal dislocation of the implant is a potential complication that has to be looked out for, and patient outcomes are generally favorable with satisfactory range of motion.

# Abstracts of Lectures



## Update on splint treatment for first CMCJ OA

**Mr Lewis LAU**

*Hospital Authority Head Office*

The carpometacarpal joint at the base of the thumb is a common site of osteoarthritis. Patients complain of various symptoms including joint pain and stiffness, loss of range of movement and reduction in muscle power and grip, all of which can lead to increasing difficulties in performing activities of daily living (ADL). The conservative treatment options are extensive and may include manual therapy, electrotherapy and exercise prescription. The primary goals of therapeutic treatment are to reduce pain, improve the joint space position, increase grip strength and pinch, and improve hand function.

Splinting is one of the most common conservative treatments for the CMC OA. Splinting the affected joints can relieve symptoms by eliminating motion across arthritic joint surfaces. A thumb splint can stabilise the weakened joint and realign the subluxed joint and thus improve positioning for functional use of the hand. An improvement in symptom control could result in an increase in the ability to perform ADL and improve the quality of life of patients with OA of the first CMC joint.



# Abstracts of Free Papers

## 1. TFCC foveal tear arthroscopic reinsertion using the perifoveal reinsertion technique

M Burnier, JWC Ting, MCK Mak, WL Tse, J Chau, PC Ho

*Department of Orthopaedics and Traumatology, Prince of Wales Hospital, Hong Kong*

**Introduction** Several arthroscopic techniques are described to repair foveal tear of the Triangular Fibro Cartilaginous Complex (TFCC). Foveal injuries often affect the young population leading to wrist pain and distal radio-ulnar joint instability. The purpose of this study is to describe our results with the perifoveal reinsertion technique, comparing it to the more popular trans-osseous reinsertion technique.

**Methods** This retrospective study compared 10 patients that were treated with perifoveal technique (Group A) with 7 patients with trans osseous technique (Group B). We evaluated pre and postoperative range of motion, grip strength and pain with Visual Analogue Scale (VAS). Functional results were evaluated with the Disability of Arm Shoulder and Hand (DASH) score, the Modified Mayo Wrist Score (MMWS) and the Prince of Wales Hospital (PWH) Wrist Performance score.

**Results** For both Group A and B, at a mean follow up of 19.5 months, the mean VAS score was 1.8 and the mean grip strength was 82.7% compared to the opposite side with no statistical significant difference between the two groups. There was an increase in range of movement and functional score. In terms of complication, 2 patients had recurrence of DRUJ instability, one in each group with no persistent injury of the dorsal ulnar nerve branch was observed.

**Conclusion** Our study showed that both perifoveal TFCC repair can provide satisfactory results for foveal tears. The perifoveal reinsertion is an effective technique that is also easy to perform. Multiple stitches can be applied to restore the foot-print of TFCC.

## 2. Management of ulnar impaction syndrome – Triangular fibrocartilaginous complex synovectomy versus decompression surgery

JWC Ting, MCK Mak, WL Tse, J Chau, PC Ho

*Department of Orthopaedics and Traumatology, Prince of Wales Hospital, Hong Kong*

**Introduction** Traditional surgical treatment for idiopathic Ulnar Impaction Syndrome (UIS) aims to decrease compressive pressure across the ulnocarpal joint. Treatment options consist of synovectomy of the triangular fibrocartilage complex (TFCC), and decompression therapies such as open or arthroscopic resection of the ulnar head, or ulnar shortening osteotomy. We hypothesize that arthroscopic debridement alone can result in relief of symptoms caused by UIS that is comparable to ulnar shortening osteotomy.

**Methods** A retrospective analysis was performed on 29 patients who underwent synovectomy only (SYNOV) and 26 patients who had decompressive (DECOM) procedures after their synovectomy for UIS between 2010 and 2017 at Prince of Wales Hospital and Alice Ho Miu Ling Nethersole Hospital. We examined their pre-operative demographics, clinical and radiological findings as well as their perioperative pain, range of motion and wrist function assessment.

**Results** Patients had improvement of their pain and function following either SYNOV or DECOM with pain relief being statistically significant for both groups. There was no significant difference between the two groups to assist us in finding predictive factors for those who would benefit from SYNOV only versus subsequent DECOM.

**Conclusion** Half of the patients presenting with UIS had significant pain reduction following arthroscopic synovectomy only without subsequent decompressive surgery. The remaining half had persisting pain that subsequently required decompression surgery. We therefore advocate that patients presenting with UIS first undergo synovectomy rather than immediate decompression surgery as the initial surgical management of UIS.

# Abstracts of Free Papers

## 3. Tendon rupture with the use of radiofrequency in wrist and hand arthroscopy

**K Prashant<sup>1</sup>, PC Ho<sup>2</sup>**

<sup>1</sup> Seth G.S. Medical College & K.E.M. Hospital, Mumbai, India

<sup>2</sup> Department of Orthopaedics and Traumatology, Prince of Wales Hospital, Hong Kong

**Introduction** The aim of this study was to analyse rate of complication associated with use of radiofrequency apparatus in hand and wrist arthroscopy, as well as review those cases in details.

**Methods** A total of 600 hand and wrist arthroscopy were performed from 2002 to 2010 in Department of Orthopaedics and Traumatology at Prince of Wales Hospital and Alice Ho Miu Ling Nethersole Hospital. Out of these 600 arthroscopic cases, radiofrequency were employed in 172 cases. Case notes and operative records were traced and presence of tendon rupture associated with use of radiofrequency were documented.

**Results** A total of 4 cases of tendon rupture secondary to use of radiofrequency were documented. 3 cases involved extensor tendon rupture at wrist, and 1 case involved flexor pollicis tendon rupture. Rate of tendon rupture secondary to radiofrequency usage was 2.3 percent.

**Conclusion** Compared to that reported in literature (around 6%), our rate of radiofrequency associated tendon rupture was below average. Several suggestions, including use of saline irrigation, limited impulse time, careful handling of tissue at dorsal side etc. were made based on the understanding of radiofrequency mechanism and review of cases in our series.

## 4. Is adipofascial flap the trick to prevent adhesions after plating of the proximal phalanx? Our experience after 11 years

**S Lucchina, C Fusetti, M Guidi**

Locarno Hand Center, Locarno, Switzerland

**Introduction** Tendon adhesions occurring after proximal phalangeal (P1) fractures are not uncommon. Previous reports described the use of an adipofascial (ADF) flap to prevent adhesions after dorsal plating of the P1 or extended tenolysis on the dorsum of the wrist, the hand and fingers. The purpose of the study is to compare the results of dorsal plating of the P1 with and without the use of the ADF.

**Methods** Over a period of 11 years a retrospective study was conducted at Locarno's Regional Hospital. Clinical and radiological results of 21 fingers in 18 patients were recorded through a minimum follow-up of 6 months. The quantitative variables were reported as mean values. The Student's t-test was used to compare the results and  $P < .05$  was considered as statistically significant.

**Results** A transient epidermolysis was detected in two fingers after ADF. Radiographically there were no statistically differences between the groups. The ADF group was statistically superior as to total AROM compared to the contralateral side (group without ADF mean 65.2; group with ADF mean 83.88;  $P=0.0161$ ) and lesser number of reoperations associated with secondary hardware removal (0% vs 66%). The percentage of grip strength (group without ADF mean 78.45; group with ADF mean 79.66;  $P=0.9037$ ) was not statistically significant.

**Conclusions** The reconstruction of a biological gliding tissue preventing scar adhesions is useful to recover finger function after plating of the proximal phalangeal fractures. The ADF is a reliable tool to lessen scar adhesions between plates and the extensor apparatus of the P1.

# Abstracts of Free Papers

## 5. A modular surface gliding implant CapFlex-PIP for proximal interphalangeal joint osteoarthritis

**M Brodbeck**

*Schulthess Klinik, Zürich, Switzerland*

**Introduction** The cementless implantation of the surface replacement CapFlex-PIP enables pain relief, preservation of motion, improves lateral stability and corrects axis deviation in proximal interphalangeal (PIP) joints of patients with primary and secondary PIP joint osteoarthritis.

**Indications** Painful PIP joints as a result of degenerative or posttraumatic osteoarthritis with restriction of motion. Secondary inflammatory destruction of PIP joints in rheumatoid arthritis with low inflammatory activity and good bone conditions.

**Contraindications** Destruction of PIP joints with severe bone loss, osseous defects and chronic joint luxation. Joint destruction induced by acute or chronic infection or skin infection.

Implantation via volar or dorsal Chamay or tendon split approach can be applied.

**Results** After 2 years follow up of 74 CapFlex-PIP arthroplasties: The active range of motion increased from 46.1° ( $\pm$  19.8) to 56.2° ( $\pm$  22.9). Significant pain relief from VAS 7.9 ( $\pm$  0.4) to 1.1 ( $\pm$  1.5). Radiological improvement of the longitudinal joint axis deviation in 80%. Complications included swan neck deformity (n=4), radial instability (n=2) and dorsal ossification (n=1). The tendon split approach tends to result in the best outcomes that are associated with fewer complications versus the volar and Chamay approaches.

## 6. Outcome after total elbow arthroplasty: A retrospective study of 16 procedures performed from 2005-2017

**YTO Wan, HK Wong**

*Department of Orthopaedics and Traumatology, Princess Margaret Hospital, Hong Kong*

**Introduction** Total elbow arthroplasty (TEA) is an established treatment for late-stage arthritis of the elbow. Information on implant survival and outcome is still sparse. The aim of this study was to evaluate implant survival and outcome in Princess Margaret Hospital from 2005 to 2017.

**Methods** A total of 16 total elbow arthroplasty (TEA) were performed in Princess Margaret Hospital from 2005-2017. This retrospective review aims to evaluate the outcome with Mayo Elbow Performance Score (MEPS), range of motion (ROM), and standard radiographs.

**Results** All patients were pain-free after the operation. The degree of flexion contracture was 0-80 degree (average 26.2). The total arc of motion was 50-140 degree (average 80.4). There was no major complication. One patient reported occasional locking of joint. One patient reported transient ulnar nerve palsy. One patient required revision of bushing and hinge 11 years afterwards.

**Conclusions** Our review suggests that total elbow replacement can give good functional outcome and survival rate in short to mid term.

# Abstracts of Free Papers

## 7. Review of claw hand deformity correction

**MSY Lee, KC Lau, ECS Chow**

*Department of Orthopaedics and Traumatology, United Christian Hospital, Hong Kong*

**Introduction** Claw hand deformity with hyperextension of the metacarpophalangeal joints (MCPJ) and flexion deformity of the interphalangeal joints (IPJ) of the ulnar fingers could cause serious impairment to patients functionally and cosmetically. Various techniques have been described to address this deformity, some of which are technically demanding and lack subjective, patient-based outcomes. Zancolli's capsulodesis had been advocated as a static procedure to correct claw hand deformity. The aim of our study is to review the outcome of a modified technique of Zancolli's capsulodesis.

**Method** We retrospectively reviewed 9 cases of modified Zancolli's capsulodesis between 2014 and 2018. Patient's objective outcomes were assessed: MCPJ motion, grip strength, hand opening position. Subjective outcomes were also assessed: Michigan Hand Questionnaire, patient's satisfaction and cosmetic outcome. We also scored the use of chopsticks, mobile phones and computers.

**Results** The mean age was 52, with M:F = 7:2. The mean follow up was 9 months. Average operating time was 43 minutes. Objective and subjective outcome measures all reflected excellent improvement. Average 3.6 degree of flexion contracture over the MCPJ was achieved. All patients would recommend the same procedure to patients with the same deformity.

**Conclusion** Volar capsulodesis is a simple and attractive procedure to restore MCPJ flexion in patients with claw hand deformity with no recurrence up to 3 years in our study. Patients who received this operation showed significant improvement in terms of function and cosmesis. No meticulous rehabilitation was needed. Disadvantage of this procedure is risk of digital nerve injury.

## 8. Comparison of the effectiveness of lumbrical splint and wrist neutral splint on patients with carpal tunnel syndrome (CTS): A single-blinded randomised study

**CNW Sey<sup>1</sup>, CPS Chan<sup>1</sup>, DSW Tsang<sup>1</sup>, SHT Lo<sup>1</sup>, FLY Au<sup>1</sup>, PC Ho<sup>2</sup>**

<sup>1</sup> *Department of Occupational Therapy, Prince of Wales Hospital, Hong Kong*

<sup>2</sup> *Department of Orthopaedics and Traumatology, Prince of Wales Hospital, Hong Kong*

**Introduction** This is a prospective single-blinded (blinded assessors) randomised study with two treatment groups. It aimed to evaluate the effectiveness of Lumbrical splint and wrist neutral splint for improving CTS symptoms and hand function on local patients with mild-to-moderate CTS in Hong Kong.

**Method** 30 patients were recruited with either Lumbrical splint (treatment group) or wrist neutral splint (conventional group) fabricated for usual sleeping hours use for 12 weeks. Primary outcome measures were Symptoms Severity Scale (SSS) and Functional Status Scale (FSS) of Chinese (HK) version of the CTS questionnaire. Secondary outcome measures included Moberg pick-up test, frequency of nocturnal awakening, moving 2-point discrimination, grip and pinch strength and Disabilities of the Arm, Shoulder and Hand. Assessments were carried at baseline, 4-week and 12-week post-treatment.

**Results** For Lumbrical splint, One-way Repeated Measures ANOVA revealed significant improvement for CTS-SSS from  $29.08 \pm 7.51$  to  $24.08 \pm 9.12$  ( $p=0.002$ ) and reduced frequency of nocturnal awakening from  $4.03 \pm 3.23$  to  $2.25 \pm 2.89$  nights/week ( $p<0.001$ ). For wrist neutral splint, significant improvements for CTS-SSS from  $26.00 \pm 4.61$  to  $21.07 \pm 7.62$  ( $p<0.001$ ), reduced nocturnal awakening from  $3.14 \pm 2.85$  to  $1.32 \pm 2.21$  nights/week ( $p<0.001$ ), grip strength from  $18.36 \pm 5.81$  kgf to  $20.45 \pm 4.84$  kgf ( $p=0.031$ ) and pinch strength from  $5.57 \pm 1.64$  kgf to  $6.20 \pm 1.20$  kgf ( $p=0.042$ ). However, Two-way Repeated Measures ANOVA concluded no significant interaction effect for splint group x time with all  $p>0.05$ .

**Conclusion** Both Lumbrical splint and wrist neutral splint have similar effect in improving symptoms and hand function for mild-to-moderate CTS. This validates the nocturnal use of either splint design in improving CTS symptoms and reducing nocturnal awakening for patients with mild-to-moderate CTS.

# Abstracts of Free Papers

## 9. Will PIPJ flexion exert less tensile strength on terminal extensor, applying to mallet finger treatment?

**J Mak**

*Department of Orthopaedics and Traumatology, Prince of Wales Hospital, Hong Kong*

**Introduction** There is no consensus for mallet finger treatment on top of DIPJ immobilization. The distal ruptured end is held apart when the extensor tone increase when the extensor hood is pulled proximally. Passive PIPJ flexion is thought to relax the lateral bands by pulling extensor hood distally and relax the retinacular ligament and FDP which tend to flex DIPJ. The objective is to demonstrate the association between tensile strength of lateral band and PIPJ flexion.

**Methods** Cadaveric fingers (n=3) were dissected and fixed to a customized jig. Both ulnar and radial lateral bands were marked out with 5mm intervals. Two conditions were compared (DIPJ immobilized at 0 deg with K-wire vs control group). Of each condition, net change in tendon elongation over each interval was measured with PIPJ at 0/30/45/60/90 degree.

**Results** The maximum absolute net shortening of intervals is at 90degree flexion in both conditions. (Control: 2.14mm, -9.99%, SD 3.22%; K-wire: 2.55mm, -11.54%, SD 3.11%) The K-wire group achieved better result than the control group with PIPJ at 60 and 90 degree.

**Conclusion** The result reflected indirectly less tensile strength is required on lateral band upon PIPJ flexion. The least tension exerted on terminal tendon is postulated at 60-90 degree PIPJ flexion and DIPJ at 0 degree. Therefore, immobilize PIPJ at flexion and DIPJ at 0 degree can optimize conservative management of mallet finger injury. Methodological modification can be achieved by introducing a direct measurement of tension of lateral band with regard to PIPJ flexion using a force transducer coupled with a materials-testing instrument.

## 10. Flexor tendon rupture associated with metallosis after total wrist replacement – A case report

**MCK Mak, DHK Chow, WL Tse, JWC Ting, PC Ho**

*Department of Orthopaedics and Traumatology, Prince of Wales Hospital, Hong Kong*

Adverse reactions to metal debris (ARMD) arising from abnormal metal-on-metal contact after prosthetic joint replacement can manifest as pure metallosis, ALVAL, and granulomatous inflammation. The effect of ARMD on tendons or ARMD related tendon complications have not been reported in literature. We report a case of tendon rupture resulting from ARMD after total wrist replacement.

A 63 years old lady with rheumatoid arthritis after the wrists had total wrist replacement on the left side 6 years ago with the Universal 2 implant. There was good relief of symptoms, but she noticed loss of flexion of her little and ring fingers together with volar wrist swelling in recent months. X-ray showed signs of progressive loosening of the distal component. On surgical exploration there was marked flexor tenosynovitis in the distal forearm and within the carpal tunnel with a black metallosis appearance. 2 FDP tendons were ruptured within this synovial mass. There was no significant polyethylene wear and the proximal component was well fixed.

On histological examination, there was florid foreign-body reaction with multinucleated giant-cells and a relative lack of lymphocytic infiltration. Black metal debris was scattered in synovium and tendon tissue and within the giant cells. There was evidence of tendinopathy with increase in cellularity, disorganized fibers, and increase in type 3 collagen. Scanning electron microscopy revealed the presence of titanium with an atomic percentage of less than 0.5%, and cobalt or chromium were not present.

Metal particles could induce a florid foreign-body reaction which was associated with tendon rupture. This was likely caused by motion between the titanium screws and carpal component. Therefore tenosynovitis in the presence of prosthetic loosening or wear deserves close attention and early surgical exploration.



# Abstracts of Ambassadors' and Scholars' Papers

## ***Paper of JSSH Ambassador***

### **Effect of concomitant injuries and their treatment on the outcome of flexor tendon repair**

**Y Fujihara, H Ota, K Watanabe**

*Department of Orthopedics, Nagoya Ekisaikai Hospital, Nagoya, Japan*

Flexor tendon injury often occurs with concomitant injuries, such as fracture, vascular injury, or extensor tendon injury, and each of these are repaired independently, without a comprehensive strategy. The aim of this study is to identify the effect of concomitant injuries and their treatment choice on the outcome of flexor tendon repair. We evaluated 117 fingers of 101 patients with zone 1-3 flexor tendon injuries. The average active range of motion (AROM) of the proximal interphalangeal (PIP) and distal interphalangeal (DIP) joints was 131° at the last follow-up, and using the Strickland criteria, "excellent" or "good" function was obtained in 74 (63%) of 117 fingers. In our multivariate analysis, old age, concomitant diaphyseal fractures, and specific methods of osteosynthesis, like pinning, flexor digitorum superficialis injury, and immobilization for 3 weeks significantly worsened the results. A surgically confirmed rupture of the repair occurred in our series, which underwent 4-strand Tsuge procedure. In our study we clarified the superiority of early mobilization protocols with rigid osteosynthesis procedure, other than just pinning. To minimize the occurrence of tendon adhesion or joint stiffness, hand surgeons should repair the tendon and fractured bone appropriately, to ensure early mobilization without serious complications such as re-rupture of the sutured tendon.

## ***Paper of KSSH Ambassador***

### **Arthroscopic management of perilunate injuries: Does it work?**

**JP Kim**

*Department of Orthopaedic Surgery, Dankook University College of Medicine, Cheonan, Korea*

Perilunate injuries are highly unstable carpal dissociations characterized by a complete loss of contact between the lunate and surrounding carpal bones. They can be pure perilunate dislocations (PLDs) or perilunate fracture-dislocations (PLFDs) associated with carpal fractures around the lunate. The key to successful treatment of perilunate injuries is early surgical intervention to restore normal alignment of the carpal bones and stability. Generally accepted treatment has consisted of open primary repair or reconstruction of the ligaments with open reduction and internal fixation of the fractures. However, it is clear that open surgery introduces additional surgical trauma to the important capsular and ligamentous structures, which may be associated with a high rate of complications, such as the development of joint stiffness due to capsular fibrosis or failure of proper bone healing because of damage to the blood supply. Furthermore, posttraumatic arthritis, which may modify the functional outcome, is major concern following the open surgery, with an incidence of 38–86%. Arthroscopic technique has the theoretical advantage of facilitating the healing of fractures and torn ligaments because it can minimize capsular and adjacent soft tissue injury and provide preservation of an already tenuous blood supply. In fact, several pioneers suggested that an arthroscopic reduction and percutaneous fixation, as an alternative to an open approach, can effectively treat acute perilunate injuries.

In this lecture, current evidences regarding the prognosis of arthroscopic-assisted reduction and percutaneous fixation compared to open approach (i.e. closed, volar, dorsal, or combined), and whether the carpal tunnel to be released in the presence of acute carpal tunnel syndrome will be discussed. In addition, technical pearls and pitfalls of arthroscopic technique for these challenging injuries, which is my preferred technique, will be discussed.

# Abstracts of Ambassadors' and Scholars' Papers

## *Paper of RHSS Ambassador*

### **Proprioceptive approach to treat the wrist pain**

**N Karpinskii, C Mattia**

*Reaclinic, Saint Petersburg, Russia*

The wrist has rich and abundant innervations especially the dorsal ligaments. These nerve endings are the starting points of stabilizing reflexes but also might be the source of pain.

In my presentation I would like to show the proprioceptive way to examine and to treat a painful wrist, using a portable myostimulator and knowing the role of extrinsic stabilizers of the wrist can give a surgeon an effecting therapeutic tool.

I am going to present an overview of current knowledge about the role of proprioception in wrist stability and also our experience and instructions to treat the wrist pain by the power of extrinsic stabilizers.

## *Paper of Chinese Scholar*

### **A case report of surgical resection of giant intrathoracic cellular schwannoma of the brachial plexus by thoracotomy and literature review**

**T Li**

*Department of Hand Surgery, Wuhan Union Hospital, Tongji Medical College  
Huazhong University of Science and Technology, Wuhan, Hubei*

Schwannomas arising from the brachial plexus are usually extrathoracic tumors located in the supraclavicular region. An intrathoracic growth of these tumors is extremely rare and only few cases have been reported in the literature. We present a 3-year-old child intrathoracic brachial plexus schwannoma and its difficult surgical treatment.

A 3-year-old child's parents complained of a non-painful palpable mass at his left supraclavicular fossa with a rapid growth in 3 months from May 2018. The patient was submitted to surgery for diagnostic and therapeutic purposes. Subsequent computed tomographic (CT) scan showed a unclear-circumscribed, irregular mass, measuring approximately 7cm length and 5cm width, located close to the left thoracic outlet. The mass appeared to a giant range from supraclavicular fossa to the upper pulmonary parenchyma. The upper lung, thyroid and trachea were all obviously compressed. Sternum, clavicle and ribs showed a wide range of invasion by tumors. CTA showed the left subclavian artery a total surround by the tumor from initial part of left common carotid artery to initial part of axillary artery. MRI showed a T1 isointensity and T2 hyperintense lesion around left C5-T1 brachial plexus nerve roots and trunks.

A preoperative biopsy was performed and a pathologic diagnosis of cellular schwannoma with aggressive cellular growth was presented 1 week later. A multidisciplinary team(MDT) was built for diagnosis and treatments including a variety of experts from Hand surgery, Oncology, Neurosurgery, Thoracic Surgery, Cardiac Surgery, Pediatric Surgery, Imaging, Pathology and Anesthesiology department etc.

The surgical approach was defined as a one-stage combined supraclavicular incision followed by left thoracotomic incision under a general anesthesia, infant endotracheal intubation and unilateral pulmonary ventilation. The sternum was open for a thorough exposure of the mediastinum and cervical portion. The tumor had a difficult but thorough resection. The left brachial plexus inferior roots and trunks were all left in continuity. However the left subclavian artery could not be separated from the giant tumor so that had a ligature at the initial part of left common carotid artery and initial part of axillary artery to avoid massive hemobilia. Left clavicle was treated with the hyperthermia induced by microwave *in vivo* and then replanted *in situ* with internal fixation. The postoperative course was uneventful with only a transient strength deficit in the left shoulder but a good recovery 6 months later. Pathological examination revealed a aggressive cellular schwannoma. Postoperatively the left extremity had a good blood circulation. However the upper lung had a half volume atelectasis but only two-third volume recovery until one year. No tumor recurrence occurred until one year's follow-up.

As for the literature review, an intrathoracic growth of this type of tumor is extremely rare and only few cases have been reported in the literature. It should be considered a differential diagnosis with malignant peripheral nerve sheath tumor (MPNST). A combined supraclavicular approach followed by a safe thoracic access is the procedure of choice. A good MDT group including hand surgery is so important that the surgeons are able to manage with combined surgical teams since the preoperative period.

# Abstracts of Ambassadors' and Scholars' Papers

## *Paper of Chinese Scholar*

### **Arthroscopy assisted treatment for intraosseous cyst of carpus**

**J Mi**

*Department of Hand Surgery, Wuxi Ninth People's Hospital, Wuxi Orthopaedic Hospital, Soochow University, Wuxi, Jiangsu*

The ganglion cyst of dorsal and palmar wrist is one of the most common reason of the wrist pain. However, the pain caused by the intraosseous cyst of carpus is intend to be neglected. This cyst can be found at any age. The young and middle age patients are more common at clinic than elder patients. Usually, they don't remember any history of wrist trauma. The patient often complains about continuing wrist pain. It will be induced by certain posture of the hand and wrist. The etiology of this disease is not clear. The main hypothesis is the theory of ganglion infiltration or trauma. Careful physical evaluation is always required. The most painful tenderness point can be found. If the results of X-ray, CT or MRI correspond to the results of physical evaluation, the diagnosis can be confirmed. The cyst of proximal row of carpus are more common than the distal row. Both open and arthroscopic approaches have been reported to treat it. The author prefer arthroscopic treatment. Several key points should be considered. Firstly, CT or/and MRI are the most important preparation preoperatively. It can tell the exact 3D position of the cyst and exclude other diseases. Secondly, careful preparing the appropriate portals and instruments before surgery. Thirdly, removing the cyst as complete as you can. Fourthly, bone graft maybe concerned if the volume of the cyst is large or the position of it is just at the load-bearing position. Even arthroscopic approach is the minimal invasive treatment, the standard procedure should be followed to avoid complications. The good or excellent results can be expected with this technique.

## *Paper of Chinese Scholar*

### **3D printing assisted accurate arthroscopic treatment of scaphoid fracture and nonunion**

**HH Yin**

*Huashan Hospital, Fudan University, Shanghai*

**Objectives** Scaphoid fractures are the most common fracture of the wrist, with a high clinical incidence. The fracture line without displacement is often not obvious in X-ray image at the initial stage, which causes a high misdiagnosed risk, and leads to scaphoid nonunion. The commonly used clinical treatment is open reduction and internal fixation with bone graft. However, open surgery, due to certain damage to blood supply, might affect the healing rate. The development of wrist arthroscopy has transformed many wrist diseases from open surgery to minimally invasive surgery. The application of 3D printing guiding plate technology has made the operation of clinical surgery more precise and further reduced the surgical related trauma. In our previous paper, 3D printing was applied to treat acute scaphoid fracture. In this paper, we introduced the use of 3D printing assisted technique and results for patients with scaphoid nonunion.

**Methods** 8 cases with scaphoid nonunion underwent preoperative CT scan and DICOM data were obtained, which was imported to a 3D designing software. According to the location of the nonunion, three fixing axes were designed, and then the percutaneous plate was designed around the skin surface. 3D printing was used to produce the plate with a material with medical compatibility. The plate was used during the surgery to introduce precisely k-wire percutaneous fixation, intraoperative application of arthroscopy graft technology was used at the following procedure.

**Results and Conclusions** There were 8 patients, all male, with an average age of 26.9 years (20~41 years), 6 patients on the left and 2 patients on the right. All the patients got union in the last follow-ups. The VAS score and the PRWE score got improved with a satisfying functional recovery. 3D-printing assisted arthroscopic bone graft fixation of scaphoid nonunion is an effective clinical treatment with a good union rate and wrist function recovery.

# Abstracts of Ambassadors' and Scholars' Papers

## *Paper of AP Scholar*

### **PQ sparing technique in distal radius metaphyseal comminution fracture**

**HJ Kang**

*Wonkwang University Hospital, Iksan, Korea*

**Objective** The pronator quadratus (PQ) has important functions such as pronation, robust blood supply of metaphysis. However, PQ repair is difficult when using conventional approach which is necessary to release PQ for volar plate fixation of distal radius fracture. In addition, anatomical reduction is difficult in patients with distal radius metaphyseal comminution fracture.

Therefore, the purpose of this study is to compare the results of volar locking plate fixation using PQ sparing technique and conventional volar approach technique for patients with distal radius metaphyseal comminution fracture.

**Materials and Methods** 26 patients treated with volar locking plate using PQ sparing approach were compared with 30 patients using conventional approach in distal radius metaphyseal comminution fracture. Mean follow up period were  $27 \pm 2.8$  and  $26 \pm 3.6$  months each.

Postoperative clinical and functional evaluation was performed with wrist range of motions, and modified Mayo wrist score measured at the outpatient clinic. Also, isokinetic evaluation of grip strength, pronation and supination powers measurement were done at the time of one-year of follow-up as outpatients.

Radiologic evaluation was performed with the mean bone union period and measurement of radial length, radial inclination, volar tilt at the outpatient clinic, one-week of interval until the bone union was detected, and 3-4weeks of interval after it was detected.

**Results** The mean range of motion, Modified Mayo wrist score, grip strength and the pronation power were significantly superior in PQ sparing approach group.

In PQ sparing approach group, bone union was achieved in all case. One case of non-union was observed in conventional approach group. The mean bone union period was shorter in PQ sparing approach group (8.7 weeks in PQ sparing group vs 14.5 weeks in conventional group). Radial length, radial inclination, volar tilt did not show any significant differences in both groups.

**Conclusion** PQ sparing technique showed superior result in clinical, functional and radiologic results compared to the conventional approach. Therefore, the PQ sparing technique may be an alternative treatment for distal radius metaphyseal comminution fracture if the surgeon is sufficiently skilled.

# Abstracts of Ambassadors' and Scholars' Papers

## *Paper of AP Scholar*

### **Predictors of survival rate in fingertip replantation**

**YW Kim**

*Institute for Hand and Reconstructive Microsurgery, W Hospital, Daegu, Korea*

**Purpose** To evaluate the variable factors affecting the survival rate in fingertip replantation.

**Materials and Methods** We have performed 640 replantation cases of amputation distal to the distal interphalangeal joint between January 2010 to June 2018. Retrospectively, patients were analyzed about variable factors (age, gender, injury mechanism, amputation level according to Ishikawa subzone, ischemic time, surgical experience, vein anastomosis, vein graft) affecting the survival rate of fingertip replantation.

**Results** The overall survival rate was 76.9% (492 of 640). Male patients were more than female (511 of 640, 79.8%), but survival rate of female was higher than male (80.6%). The mean age of patients was 45.3 years (15 months to 76 years) old. In the level of injury, amputation of distal phalanx was most frequently occurred at Ishikawa subzone I (167 of 640). Survival rate of subzone I (80.8%) & II (85.8%) was higher than subzone III (72.4%) & IV (66.8%). In the type of injury, local crushing injury (345 of 640) was the most common cause of amputation. And severe crushing injury (66.5%) was the lowest survival rate than others; guillotine (87%) and local crushing (80.3%). Total ischemic time was 631 minutes. Ischemic time was not statistically significant. There was a higher survival rate for vein anastomosis group (77.9%) than salvage group (66.4%) in Ishikawa subzone III and IV. The success rate of fingertip replantation is getting higher with experience of hand surgeons.

**Conclusions** The factors of age, gender, and ischemic times do not affect the survival rate of fingertip replantation. The level of injury, injury mechanism, vein anastomosis, vein graft, surgical experience of the surgeons are statistically significant factors for the survival rate of fingertip replantation.

# Acknowledgements

- |  |  |
|--|--|
| 1. Accession Medical Supplies Company                                      | 10. Hong Kong Society for Hand Therapy                                   |
| 2. Astellas Pharma Hong Kong Company Limited                               | 11. I-Medical Asia Company Limited                                       |
| 3. Carl Zeiss Far East Company Limited                                     | 12. Johnson & Johnson (Hong Kong) Limited                                |
| 4. Century Group   | 13. Karl Storz Endoscopy China Limited                                   |
| 5. Convatec HK Limited   | 14. Molnlycke Health Care & Caster (HK) Medical Supplies Company Limited |
| 6. Department of Orthopaedics and Traumatology, Princess Margaret Hospital | 15. Pacific Medical System Limited                                       |
| 7. Department of Orthopaedics and Traumatology, Prince of Wales Hospital   | 16. Pfizer Corporation Hong Kong Limited                                 |
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(in alphabetical order)

# Accredited CME/CNE/CPD Points by Various Colleges

## Accredited CME/CNE/CPD Points by Various Colleges

### Hong Kong College of Orthopaedic Surgeons

CME Cat A: 8 points

CME Rehab: 3 points

Training points: 8 points

### Nursing Council of Hong Kong

CNE: 12 points

### Hong Kong Occupational Therapy Association

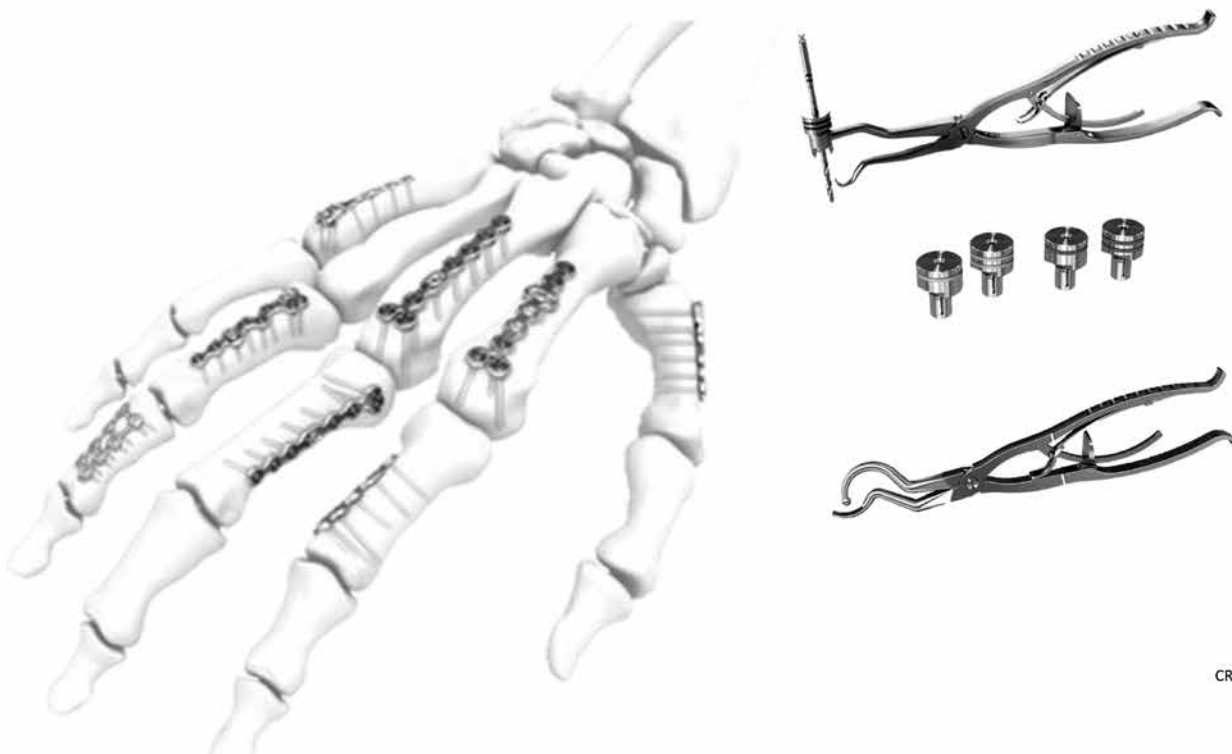
CPD: pending

### Hong Kong Physiotherapy Association

CPD: pending



## VARIABLE ANGLE LOCKING HAND SYSTEM



CRAF-019/19

## AADO / HKSSH Conjoint Scientific Meeting 2019

### Trauma Basics: Upper Limb Tendon and Ligament Injury

### 24 March 2019 (Sunday)

#### Target Group

Health care providers who working in orthopedic, operating theatre or related areas

#### Aims

- ◆ To update the knowledge on multi-disciplinary management of traumatic upper limb injuries
- ◆ To enhance understanding the required skills and caring roles in surgery of upper limbs injuries
- ◆ To provide an opportunity to learn physical examination of hand
- ◆ Introduce and practice USG investigation of upper limb injury

#### Course Fee

Member (AADO/HKSSH) HK\$500  
Non-member HK\$1,000

#### Venue

Orthopaedic Learning Centre  
Prince of Wales Hospital  
Shatin, N.T.

#### Accreditations

5 CNE

Organized by



#### Programme

Time	Content	Speaker
08:30	Registration	
09:00-09:10	Welcome Remarks	Ms Marble Ma
09:10-09:40	Tendon and Ligament Biochemistry and Pathology	Dr Jeffrey SC Koo
09:40-10:10	Anatomy, Investigation and Diagnosis of Tendon and Ligament Injury	Dr Edmund Yau
10:10-10:35	Principle of Tendon Repair and Tendon Graft	Dr Emily KY Yip
10:35-10:55	Pre-and-post Operative Nursing Care	Mr Wai Kin Ip
10:55-11:20	Preparation of Patients Undergo Surgery of Upper Limb Tendon and Ligament Injury	Ms Karen Law
Tea Break		
11:40-12:00	Physiotherapy Management on Traumatic Upper Limb Tendon and Ligament Injury	Ms Daisy Ng
12:00-12:20	Tendon Rehabilitation in Occupational Therapy Perspective	Ms Vienna Chu
12:20-12:35	Q&A	
12:35-12:45	Closing Remarks	Dr Jeffrey SC Koo
Lunch		
14:00-14:45	Physical Examination of Upper Limb	Dr Edmund Yau
14:45-16:00	USG Investigation on Upper Limb	Dr Lung-fung Tse Dr Sara Tong Dr Edmund Yau Dr Gary WH Yip Dr Jeffrey SC Koo

#### Registration Deadline

17 Mar 2019

#### Enquiry

Ms Charis Lau  
Tel : (852) 3505 1654  
Email : secretariat@aado.org

**AADO.org**



# 11<sup>th</sup> HKSHT 2019

## Annual Therapist Symposium

### Clinical Pearls and Innovation in Hand Therapy

N001, The Hong Kong Polytechnic University. 29 March

#### Overseas Speaker

##### Dr. Marc Garcia-Elias

Consultant Specialist  
Institute Kaplan Barcelona, Spain  
President-elect, IFSSH

##### Dr. Rosemary Prosser

Principal and Director  
Sydney Hand Therapy & Rehabilitation Centre

##### Ms. Sarah Mee

Consultant Hand Therapist  
Chelsea & Westminster Hospital  
Regional Hand and Wrist Unit

#### Local Speaker

##### Dr. Pak-Cheong HO

Chief of Services & Consultant,  
Orthopaedics & Traumatology, PWH & AHNH  
Chief of Services,  
Department of Orthopaedic Rehabilitation, TPH

##### Mr. Jackson Wong

Senior Occupational Therapist, UCH

##### Mr. Joseph Cheng

Senior Occupational Therapist, CMC

#### Online Registration

<https://www.hksht.org>

Enquiry:

Ms. Vienna Chu

Tel: 3506 2618

E-mail: [cwh290@ha.org.hk](mailto:cwh290@ha.org.hk)

CPD/CME: Pending

#### Pre-symposium Evening Workshop

Date: 28 March 2019, 1900-2100

Venue: N103, The Hong Kong Polytechnic University

Speaker: Dr. Rosemary Prosser

Co-organizing Organization:



Supporting Organization:

