

Report for the APSS Depuy Synthes Spine Clinical Fellowship 2013

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**Guide: Prof. Keith Luk Dip Kei MCh (ORTH),
FRCSE, FRCSG, FRACS, FHKAM
Tam Sai-Kit Professor in Spine Surgery**

**Department of Orthopaedics and Traumatology
The University of Hong Kong
Hong Kong**

Duration: 10 – 30th November, 2013

Centers visited:

- 1. Duchess of Kent Children Hospital**
- 2. Queen Merry Hospital**

Objective: The aim of the program is to give the fellow an opportunity to spend 3 weeks in a spine centre of excellence in the Asia Pacific Region. This is a unique opportunity to interact with and learn from renowned spine surgeons in the Asia Pacific region.

The Asia Pacific Orthopaedic Association (APOA) - Depuy Spine Clinical Fellowship 2013 was to start from 10 to 30th November, 2013 in The Department of Orthopaedics and Traumatology Hong Kong University (HKU). I landed in Hong Kong (HK) international airport at 9.55 am on 10-11-13 and reached Best Western Hotel Harbor View at 2.30pm (HK local time) after initial difficulty in locating and communication. It was indeed a beautiful hotel room and I was thankful to the organizers. It was a Sunday and a local holiday.

On the first day of fellowship I went to the historic Duchess of Kent Children Hospital (DKCH) where Prof. Keith Luk Dip Kei welcomed me and three other APOA travelling fellows (Dr Sanjay from India; Dr Raymond from Hong Kong and Dr Masa from Japan) and took us to the Scoliosis clinic. I was impressed by the mostly small curves among the OPD patients. Prof. Luk explained that this is the result of regular school screening program and hence its importance. We also saw a rare case of rib fracture in healing stage after initiation of Boston brace treatment in an Adolescent Idiopathic Scoliosis (AIS) patient. Prof. Luk also emphasized the importance of assessing the status of distal radial and ulnar epiphysis in predicting the remaining growth potential in the pediatric scoliosis patients. In the evening Prof. Luk took all the APSS fellows with the members of Department of Orthopedics and Traumatology of Hong Kong University (HKU) to the famous Aberdeen Marina Club for dinner in the Deck and the scenery was breathtaking.

On 12-11-13, before starting surgery in DKCH; we were taken to the conference room where Prof. Luk spoke on Congenital

scoliosis and Prof. KMC Cheung on Early onset Scoliosis followed by discussion. At 12.30 pm we went to Dynasty restaurant for lunch with Prof. KMC Cheung. We came to OT in DKCH to see Prof. Luk performing two level disectomy, C6 corpectomy cage and plate fixation for PIVD C5-6 & C6-7.

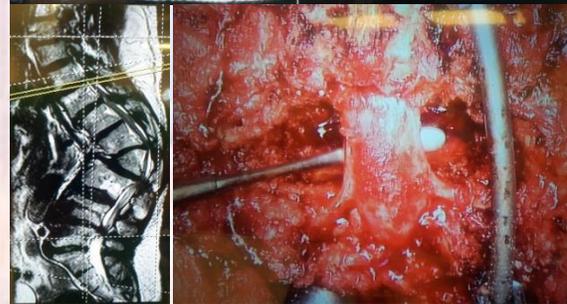
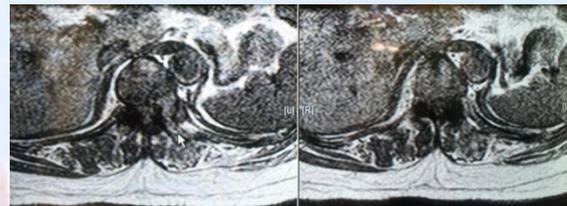


The following day started with ward round and discussion in DKCH where I saw a wide range of mixed spinal pathology. One case of neglected Neuromuscular (Post Polio Residual Paralysis) scoliosis in a lady in her 6th decade with severe obstructive respiratory symptoms deserves special mention in terms of her poor existing respiratory symptoms and 100° kyphoscoliosis for surgical correction. Prof. KMC Cheung stressed doing the minimum required to bring her chest out of pelvis and thereby increasing the thoracic cavity and to give the lungs the much needed space. She was placed in Halo traction and she was improving in her respiratory function. Another lady patient in her late fifties had neglected AIS of 90° with L4-5 compressive symptoms was planned for only local decompression. I also saw one pre-operative EOS patient planed for Magnetically Controlled Growing Rod (MCGR) and another one and a half year follow-up of MCGR for implant removal for infection and implant loosening in the distal anchor site. From 2pm onward I was with Dr Y W Wong in the adult spine clinic till 5pm where I saw degenerative cervical and lumber disorders both operative and conservative management.

On 14-11-13, the day started with lecture on Fulcrum bending radiographs by Prof KMC Cheung at 9.30 am in the conference room of DKCH till 11 am where details of effectiveness of fulcrum bending X-ray in pre-operative planning was explained. Two cases were planned for surgery that day; first being application of MCGR in a syndromic EOS patient and next was removal of MCGR for infection and implant loosening.

Next day (15-11-13) was the first day in Queen Mary hospital (QMH). The day started with ward round at 8.30 am in the morning. The first patient was a spondylodiscitis L3-4 (?TB) with sensory-motor involvement had already undergone debridement once, but with static neurology. I could understand the difference of treatment for Pott's spine in India and Hong Kong. The other rare cases were Cervical myelopathy in a spastic Cerebral palsy patient who underwent decompressive surgery, post operative uterine cervix carcinoma with spinal metastasis - ventilator dependent; post operative central cord symptom - ventilator dependent; ? Metastatic Hepato Cellular Carcinoma in the L4-5; operated outside QMH; where the surgeon did a anterior L4-5 plate-screw fixation and biopsy and encountered massive hemorrhage. Histopathological examination (HPE) did not reveal malignancy and also subsequent HPE in QMH. But the culture showed Methicillin Resistant Staphylococcus aureus (MRSA) and it was planned to put the patient under life-long antibiotic cover. Another difficult case was a neglected congenital kyphosis with hemivertebra at L2 and thoracic myelopathy (T9-10) with LCS with paraparesis.

On Monday (18-11-13), I reached QMH to have live experience of Prof KMC Cheung performing surgery on the above mentioned neglected congenital kyphosis with paraparesis. Prof Cheung did posterior instrumentation, decancellation of L2 and decompression of both thoracic and lumbar spine by laminectomy. Surgery was uneventful but patient woke up with visual loss; which was not complete blindness and gradually improving and later confirmed to be Posterior Ischemic Optic Neuropathy (PION).



Next day on 19-11-13; Dr YW Wong was doing AIS in a 15 yr old female patient in DKCH and he explained how only alternate screws are adequate in flexible curves. In the evening I

went to Lamma Island with Dr YW Wong, Prof. Todd J Albert, Professor and Chair and Director of Rothman Institute, Philadelphia, USA who was visiting Hong Kong for Dr Tam Sai Kit visiting Professorship Lecture 2013; and other fellows for dinner hosted by Dr Wong. It was an important memory of my life to have dinner and then photography with Dr Wong and Prof Todd.



On 20-11-13 we had ward round at DKCH along with Prof. Luk, Prof Cheung, Dr Wong and Prof Todd. I felt fortunate to listen to the controversies in the management of spinal pathologies of the admitted patients. At 10.30 the Clinical Conference at DKCH began with case presentation mainly involving cervical and lumbar degenerative conditions with reference to type and approach of surgery. I was immensely benefited by the discussion. Prof. Luk and Prof. Todd also discussed possibility of prophylactic adjacent level decompression and the controversies. At 2 pm I went to the Adult Spine Clinic with Dr Wong.

Next day I went to the OT at DKCH to observe decompression, posterior instrumentation and TLIF by Dr Louis Wy Chueng and team (Dr Murat and Dr John; both are spine fellow). OT finished at 2.30pm.

On 22-11-13 the day began with ward round in Queen Mary Hospital at 8.30am and finished approximately at 10am.

On 25-11-13 I attended Scoliosis clinic of Dr YW Wong which started at 9 am and continued till 12.30 pm.

On 26-11-13, OT started at 9 am in DKCH. Dr Louis WY Cheung did a L5 S1 revision disectomy, Posterior instrumentation and interbody fusion. The next case was a L5-S1 degenerative disk disease planned for L5 selective nerve root block. But L5-S1 space was found to be very stenotic and after a reasonable effort Dr Louis WY Cheung changed the plan and a L4-5 epidural injection was given.

On 27-11-13, the day started with ward round in Duchess of Kent Children Hospital at 8.30am till 10.30am. The adult spine clinic was from 2 – 5.30pm and I was with Dr YW Wong.

On 28-11-13. OT was in DKCH where Dr Louis WY Chueng and team (Dr Murat and Dr John) performed decompression and instrumented fusion from L2-5 for degenerative lumbar canal stenosis.

The last day of my fellowship program began with ward round at 8.30am in Queen Mary hospital and was a very interactive round with Prof KMC Cheung. Pre-operative case discussion began at 1 pm in Queen Mary hospital where I experienced 2 very difficult metastatic spinal tumor; one in an adult and other in a pediatric patient. Other discussed cases were degenerative cervical, lumbar diseases and a double major scoliosis for its treatment options.

My entire duration of fellowship has been immensely helpful for several reasons. It was my first foreign fellowship and I had a firsthand experience on how the master surgeons think and execute. It again reminded me the long learning curve of spine surgery training which I am ready to undertake. I now have a better understanding that expert patient care, meticulous data management, research and teaching must go hand in hand in modern day academics none of them is less important. I was extremely impressed by the functioning of the spine surgery division of Hong Kong University and promise to take the light back home. I also realized the free society of Hong Kong celebrating an excellent living.

At last I offer my sincere thanks and gratitude to Prof Arvind Jayaswal, who is also the chairman



of the Spine subspecialty section and was behind this fellowship, and under whom I am undergoing training and without whom my dream of pursuing a career in spine surgery would have been impossible. Finally I would thank the APOA; the President Prof. Charoen

Chotigavanich; Secretary; Prof Mun Keong Kwan, for selecting me for this fellowship and providing the opportunity. A final word of appreciation for Helen Chong, April Cheung and YM Kong for coordinating the fellowship programme.

Day	Date	Time
1	11/11/2013	9 am -1 pm
2	11/12/2013	9.30 - 12 pm
		12.30 - 2 pm
		2.30 - 5.30
3	11/13/2013	8.30 -10 am
		2 - 5pm
4	11/14/2013	9.30 - 11 am
		Conference room
		11 am - 4 pm
5	11/15/2013	8.30 - 10 am
6	11/18/2013	9 am - 9.30 pm
7	11/19/2013	9 am - 5 pm
7	11/20/2013	8.30-10.30 am
		10.30-12 pm
		2-5.30pm
		6.15-7.30pm

8 11/21/2013 9am - 2 pm

9 22-13-13 8.30-10.30 am

10 11/25/2013 9am - 1pm

11 11/26/2013 9am - 2.30 pm

12 11/27/2013 8.30 - 10.30 am

2 -5.30 pm

13 11/28/2013 9 am -2.30 pm

14 11/29/2013 8.30-10 am

1-2 pm

Attendance

Scoliosis clinic

Lectures on EOS

1. Cong scoliosis
2. EOS

Lunch in Dynasty restaurant with Prof. KMC Cheung

OT

Ward round

Adult spine clinic

Lecture on Sacrum bending radiographs

Operation theater

Ward round

Operation theater

Operation theater

Ward round

Clinical case discussion

Adult spine clinic

Attended Dr Tam Sai Kit Visiting Professorship Lecture 2013

Surgeon

Prof. KDK Luk

Prof. KDK Luk

Prof. KMC Cheung

Prof. KDK Luk

Prof. KDK Luk

Prof. KMC Cheung

Dr Wong

Team

Dr YW Wong

Prof. KMC Cheung

Prof. KMC Cheung

Prof. KMC Cheung

Dr YW Wong

Team

Prof. KMC Cheung

Dr YW Wong

Prof. KDK Luk

Prof. KMC Cheung

DR YW Wong

Team

Visiting Prof Todd J Albert

DR YW Wong

Prof. Todd J Albert

Operation theater	Dr Louis Wy Chueng & team
Ward round	Dr YW Wong
Scoliosis clinic	DR YW Wong
Operation theater	Dr Louis WY Cheung Dr Louis WY Cheung
Ward round	Prof. KMC Cheung DR YW Wong Team
Adult Spine Clinic	Dr YW Wong
Operation theater	Dr Louis WY Cheung
Ward round	Prof. KMC Cheung DR YW Wong Team
Pre-operative case conference	Prof. KMC Cheung Dr YW Wong Team

Cases

C6 corpectomy, cage and plate fixation for PIVD C5-6 & C6-7

Cervical myelopathy, cervical disectomy, Lumbar canal stenosis,
Neglected AIS with L4-5 compressive symptoms, Neglected NM (PPRP)
with severe obstructive symptoms, MCGR with screw loosening, Pre op MCGR
Post -op NM scoli due to CP, Post op AIS

Presentation

Magnetic Growing rod application
Magnetic Growing rod removal in a follow-up patient due to infection

Post op L3-4 TB with paraparesis, Cervical myelopathy in a spastic CP patient,
Post op spinal metastatic cervical carcinoma - ventilator dependent, Post op (PI)
central cord symptom - ventilator dependent, AIS in a 15 yr girl, Infective /
metastatic HCC in the L4-5 (Operated outside) - No HPE diagnosis yet
Neglected congenital kyphosis with myelopathy

Progressive AIS in a 15 yr girl Cobb angle 59 degree. Fulcrum bending angle 24 degree

Cervical myelopathy, Gr in EOS, PIF in NM scoliosis, post of PSF for AIS, Post op

Cervical deformities: Principles and management

Grade I degenerative spondylolisthesis of L5 over S1

Cases rediscussed

L5 S1 revision diskectomy, Posterior insrtumentation and interbody fusion
L4-5 epidural injection

Decompression and instrumented fusion from L2-5 for degenerative canal stenosis

My role	Hospital
Observation	Duchess of Kent Children Hospital
Onbservation	Duchess of Kent Children Hospital
	Duchess of Kent Children Hospital
Onbservation	Duchess of Kent Children Hospital
Observation and discussion	Duchess of Kent Children Hospital
Observation and discussion	Queen Merry Hospital
Observation and discussion	Queen Merry Hospital
Observation and discussion	Duchess of Kent Children Hospital
Observation and discussion	Duchess of Kent Children Hospital
Observation and discussion	Duchess of Kent Children Hospital
Observation and discussion	Duchess of Kent Children Hospital
Observation and discussion	Queen Merry Hospital

Observation and discussion Duchess of Kent Children Hospital

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Observation and discussion Queen Merry Hospital

Lessions learnt

1. Importance of school screening programme
2. Importance of hand x-ray for state of distal ulnar & radial epiphyseal closure
3. Rare case of rib fracture by Boston brace
4. During follow-up brace treatment of scoliosis - the Xray without brace should be taken after removing the brace for 24 hours

Advantage of casting in EOS - compliance, better moulding
Sedimentaion sign - Nerve root floating sign

Method to do a fulcrum bending X-ray & its co-relation post op
Critical screw, alternat screws, screws at all level - indications
Stiff curve- do better with screw with all levels
Flexible curvet- alternate screw are enough
Critical screw- minimum screws needet to control the curve

Decompression and instrumentation in central cord syndrome.
Care of ventillator derypendent patient after highh cervical cord injury

Decancellation

Alternate level screw in a flexible curve

Controversies in management of Cervical radiculopathy and myelopathy,
approaches.

Cervical saggital parameters

Others

Enjoyed dinner hosted by Prof KDK Luk in The Deck of Aberdeen Marina Club till 9 pm

Lunch at LeMeridianesis - by Depuy Synth, Hong Kong

Dinner at Hong Kong University - by Prof KMC Cheung

Went to Lama Island with Prof Wong and visiting Prof Todd; took sea food in a dinner hosted by Prof Wong.