

## Report for the APOA APSS - Depuy Synthes Spine Travelling Fellowship 2013

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**Institute:** Caritas Medical Centre, 111 Wing Hong Street, Shamshuipo, Kowloon, Hong Kong

The Asian Pacific Orthopaedic Association (APOA) Asian Pacific Spine Society travelling fellowship comprised of visit to spine centers of excellence in three cities (Hong Kong, Taipei, Mumbai) in Asia Pacific region with each lasting for one week. My accompanying fellows are Dr Sanjay Yadav from All India Institute of Medical Sciences in New Delhi and Dr Teraguchi Masatoshi from Wakayama Medical University in Japan.

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### Hong Kong

**Duration:** 10 November 2013 to 17 November 2013

**Guide:**

Prof Keith Luk Dip Kei

Department of Orthopaedics and Traumatology, The University of Hong Kong, Queen Mary Hospital, Pokfulam Road, Hong Kong

**Hospitals visited:**

Duchess of Kent Children Hospital (DKCH)

Queen Mary Hospital (QMH)

On 11 November, we arrived on time at DKCH in the morning. We attended the Scoliosis clinic with Professor Luk, and he introduced the scoliosis school screening program started by him back in 1995. In the clinic, we encountered patients with congenital scoliosis, adolescent idiopathic scoliosis. He emphasized the importance of physical examinations like abnormal abdominal reflex or hamstring to detect subtle neurological abnormalities. In the afternoon, we observed a case of transforaminal injection of nerve root in a case of recurrent disc herniation at L5/S1 level performed by Dr YW Wong. He emphasized the difference of trajectory of needle in L5/S1 level due to high iliac crest. At night, we had buffet dinner in Aberdeen Marina Club and we met the Spine team of the Department of O & T of the University of Hong Kong.



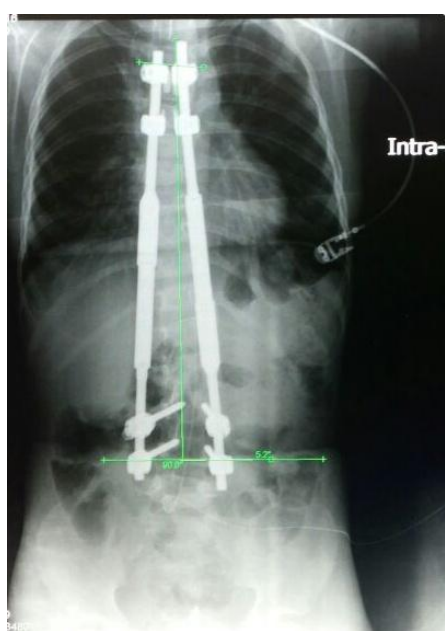
*Dinner at Aberdeen Marina Club with Spine Team of University of Hong Kong with Prof Luk and Dr YW Wong*

On 12 November, we attended the early onset scoliosis course hosted by Prof Ken Cheung in the morning. Prof Luk gave a lecture on congenital scoliosis and highlighted the posterior quadrant vertebra has the highest risk of cord compression. He also mentioned the various forms of treatment like fusion in situ, epiphysiodesis, excision of hemivertebrae. The second lecture was given by Prof Cheung, he highlighted the effect of spine growth and lung growth in patients of early onset scoliosis. He also shared experience on Magec-rod (a magnetic growing rod) and its initial problems like metallosis, failed to distract. Then we had lunch at Dynasty restaurant in Cyberport. We met a group of Japanese Synthes Spine fellows and fellows from Turkey and Australia. We also exchanged our experience in Spine Surgery. In the afternoon, we observed an ASF c456 (C5 corpectomy) with cage on a patient with cervical myelopathy.

On 13 November, in the morning we attended the Spine team grand round in DKCH. Pre- and post-operative cases were assessed. There was an interesting case of middle age lady with severe poliomyelitis resulting in severe progressive scoliosis. Lung function and lower limb neurology were gradually compromised which resulted the need of nocturnal BiPAP. She was treated with halo-chair with significant improvement of lung function before her contemplated scoliosis correction surgery. Then we attended the clinical case conference which was about treatment of deformities on patients with arthrogyposis. In the afternoon, we attended the

Spine Clinic with Dr YW Wong. We encountered mainly degenerative and infective conditions in this clinic.

On 14 November, in the morning Prof Luk presented a lecture on fulcrum bending view as added assessment of correctability to save some fusion levels in treatment of scoliosis. He introduced his concept of fulcrum bending correction index (FBCI). Then we observed an operation on insertion of growing rod and another operation of removal of growing rod due to suspected infection. At night, we enjoyed a joyful night Prof Cheung in Vegetarian Restaurant in Centennial Campus in The University of Hong Kong



*Application of magnetic growing rods*

On 15 November, in the morning we attended grand round in Queen Mary Hospital and encountered different cases like Gorham's disease, cervical myelopathy, TB spine, central cord syndrome. Then we visited the Research Laboratory of Orthopaedics in Faculty of Medicine. We were shown about their research on strontium impregnated bone cement and shape memory alloy and role of genetics in disc degeneration. At noon, we, APSS fellows and Synthes visiting fellow presented our research on Spine.

I presented my paper on the outcome of anterior cervical spinal fusion in cervical spondylotic myelopathic patients.



*Group photo with Professor Ken Cheung outside Duchess of Kent Children Hospital*

I sincerely thank Prof. Keith Luk, Prof. Ken Cheung and their team for their hospitality and experience sharing. We then headed for our next station - Taipei.

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### **Taipei**

**Duration:** 17 November 2013 to 24 November 2013

**Guide:** Prof Chen Wen-Jer,

**Hospital visited:**

Linkou Chang Gung Memorial Hospital, Taoyuan Hsien, Taiwan

On 18 November, we met Prof Chen in the ward and had quick glance of their preoperative and post-operative cases. We got to know about their disease spectrum and treatment strategies. He also briefed us about the department and our attachment schedule. We then went to operation theatre. We observed several cases of degenerative spondylolisthesis treated with TLIF with their dynamic fixation system. In the evening, we visited Prof Chen's outpatient clinic and got to know about their set up of clinic.



*Utilizing the dynamic fixation system*

On 19 November, in the morning we attended their Department meeting with Journal club review. Then we head straight to operation theatre in which they have more than 10 cases mainly on degenerative spine condition. They are conducting on a study on risk of adjacent segment degeneration with use of dynamic fixation system. Of course, for spine surgery, the discussions were on 1) number of levels of fusion 2) anterior approach 3) posterior approach with or without anterior decompression. We had good fruitful discussion and enrich our understanding in spine surgery. At night, we went to a local Taiwanese restaurant having Ginger Duck which is a traditional Taiwanese food.



*Ginger Duck Hotpot with Taiwan young fellows and residents*

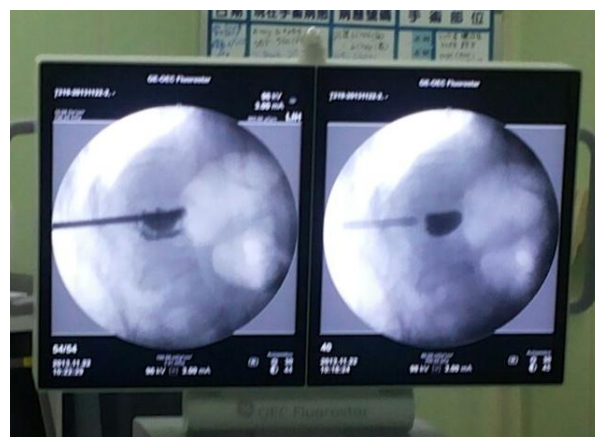
On 20 November, Dr Lui performed two cases of ACDF with the use of microscopy for patient with radiculopathy using standard Smith Robinson approach. He also performed a transforaminal nerve root injection for a case with L3/4 spondylolisthesis. At night, we had dinner at an Argentina steak restaurant with the Spine team in Chang Gung Hospital.



*APSS fellows with Prof Chen*

On 21 November, we attended the Spine team meeting and they reviewed their postoperative cases and long stay patients, presented about the dynamic fixation system and several interesting cases with diagnostic challenges. We observed another cervical ACDF, here in Taiwan, it is common strategies to use allograft. Their indication for plate fixation is similar in Hong Kong which is three or more levels.

On 22 November, we observed several cases of kyphoplasty under LA and lumbar spinal stenosis decompression.



*Kyphoplasty being performed*

This marked the end of attachment in Taipei. I sincerely thank Prof Chen Wen-Jer and his team for their experience sharing and hospitality

On 23 November, we had a short break. Three of us travelled to a more rural area of Taipei, Xinbeitou and Tan Shui. We enjoyed the breathtaking scenery and our friendship grew.

## **India**

**Guide:** Professor S.Y. Bhojraj

**Duration:** 24<sup>th</sup> November 2013 to 30<sup>th</sup> November 2013

### **Hospitals visited:**

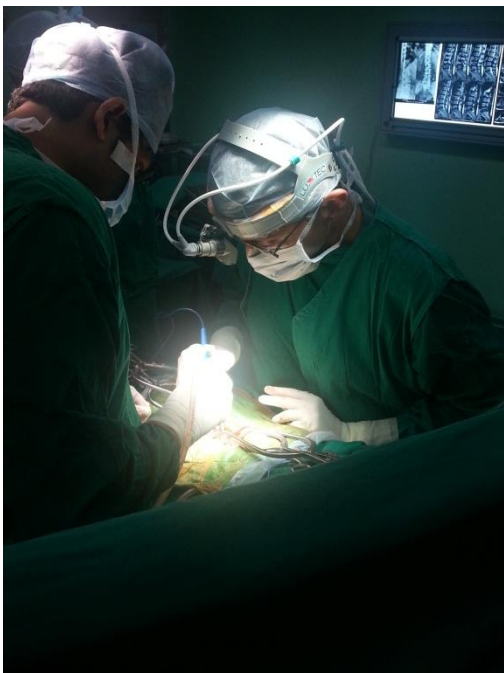
1. Lilavati Hospital
2. Breach Candy Hospital
3. V.N. Desai Municipal Hospital
4. P.D. Hinduja Hospital

On arrival, we were picked up by a spine fellow Dr Aditya of



Prof Bhojraj and had a welcome dinner with spine fellows of Prof Bhjraj.

On 25 November, we arrived at Prof Bhojraj clinic on time. We learned about the healthcare system in India We also learned about the “Spine foundation” which was instituted by him in 1998 run by a group of spine consultants working at various leading institutions. The aim is to provide holistic care (investigations, treatment, surgery, rehabilitation) for the poor patients with major spine problems. We had preoperative discussion for the next day cases and followed the Grand round in Lilavati Hospital and VND Municipal Hospital. We saw a great spectrum of cases ranged from TB infection, congenital abnormalities and degenerative conditions. In the evening, we observed Prof Bhojraj performed a case of lumbar decompression with facetectomy in Breach Candy Hospital. We then had dinner with Prof Bhojraj in the Princess Club in National Sports Stadium.



*Prof Bhojraj operating in Breach Candy Hospital*

On 26 November, we observed Prof Bhojraj performed three cases, one case of long decompression and 2 cases of lumbar decompression with instrumented fusion. Then we had lectures presented by Prof on management of cervical myelopathy, radiculopathy, tuberculosis and in particular, the economic options for spine surgery in developing countries. In the evening, in Hinduja National hospital, we had an

inter-hospital academic meeting. We discussed on cases of neglected scoliosis e.g. TB.spine, AIS, traumatic spinal injury. We then had dinner in GOA restaurant and met the spine residents and fellows from 4 different hospitals. We had good experience sharing in the dinner.

On 27 November, in Hinduja Hospital, we observed a case of TB spine with T8910 involvement presented with progressive back pain and kyphosis despite medical treatment. Posterior instrumentation and transthoracic debridement and cage with rib graft was performed by Dr Samir Dalvir. The operation was smooth and skillfully performed. We then had dinner with spine doctors and neurophysiologist from United Kingdom in the Wellington Club. We discussed cases about scoliosis live surgical demonstration in the coming two days.



*TB kyphosis treated with posterior instrumentation and transthoracic decompression*



*With Dr Samir Dalvir in Hinduja Hospital*

On 28 November and 29 November, we attended the Scoliosis Live Surgical Demonstration in VND Municipal Hospital. The main aim of the workshop is to learn the surgical skills and neuro-monitoring for deformity correction from UK specialists and to provide free expert spine service to the poor people in India. We observed 3 cases in the workshop. The first case is TB kyphosis with late onset paraplegia. He was treated with adequate decompression from the back with correction with pedicle subtraction osteotomy. The second case was an AIS patient corrected with pedicle screw and double row instrumentation. The third case was a case of rigid kyphoscoliosis treated with posterior Ponte osteotomy and costoplasty. I learned about the various correction techniques in cases of rigid curves. In between operations, we had lectures from the UK specialists on AIS, early onset scoliosis, degenerative scoliosis and neurophysiological monitoring. The workshop was ended with a great discussion.

I sincerely thank Prof Bhojraj for all his arrangement and during the whole week we were well taken care by him and his whole spine team including food and transportation.



*APSS fellows with Prof Bhojraj in Scoliosis Workshop*

And it came to the end of the three week fellowship, we say goodbye to each other and exchange contacts and promised to keep in touch.

Finally, I would like to thank the APOA Asia Pacific Spine Society giving me such a great chance to learn at the beginning of my subspecialty training. I treasure it very much.

### Log book APOA-APSS Travelling Fellowship-2013

Case No.	Age (Y)	Sex	Diagnosis	Surgery	Remarks
1	42	F	L5 radiculopathy right	Nerve root block	-
2	10	M	Congenital dorsolumbar scoliosis	Magnetic Growing rod application (MAGEC)	Soto syndrome
3	9	F	Early onset dorsal scoliosis with growth rod in-situ	Revision growth rod application	Found infected. Implant removal and wound lavage
4	45	F	Cervical disc disease; C5-C6	ACDF	Stand-alone iliac crest graft (Kokobun technique)
5	52	M	Cervical disc disease; C5-C6, C6-C7	C5 corpectomy and anterior cervical plating	Meshed titanium cage with bone graft
6	48	M	Lumbar Spondylolisthesis-one level	L5-S1 posterior instrumentation	TLIF with PEEK cage
7	54	F	Degenerative spondyloarthropathy- lumbar spine	L3-L4, L4-L5 posterior instrumentation and fusion	PEEK cage
8	57	M	Lumbar spondylolisthesis-L4-L5, L5-S1	Two level fixation with posterior instrumentation	TLIF with PEEK cage
9	46	M	Degenerative disc disease	Open discectomy	Lumbar spine,L4-L5
10	49	F	Adjacent segment degeneration with L4-L5 fixation implant in situ	Extention of instrumentation to L3 and L2 with DTO (Zimmer)	Dynamic fixation concept
11	38	M	Cervical degenerative disease C5-C6	ACDF- one level	Stand alone PEEK cage
12	53	F	Cervical degenerative disease C4-C5, C5-C6	ACDF- two level	Stand alone PEEK cage
13	50	M	Degenerative disc disease with canal stenosis, L3-L4-L5	Posterior decompression and instrumentation	DTO (Dynesys Transition Optima)
14	67	F	Lumbar degenerative scoliosis	Posterior instrumentation, L2-L5	PEEK cage
15	69	F	Cervical spondylosis with compression, C6-C7	C6/C7- ACDF	PEEK cage
16	43	M	Left L4 radiculopathy	L4 nerve root block	-
17	69	F	Degenerative lumbar disease with lumbar kyphosis	Decompression and posterior instrumentation	2 level Ponte osteotomy
18	51	M	Cervical degenerative disease	ACDF with	PEEK cages- three level
19	49	M	L3-L4 radiculopathy	L3-L4 nerve root block	-

Case No.	Age (Y)	Sex	Diagnosis	Surgery	Remarks
20	72	F	Lumbar canal stenosis	Decompression, posterior instrumentation and fusion	PEEK cage
21	68	F	Degenerative spondyloarthropathy, L2-S1	L2-S1 decompression and fusion	PEEK cage
22	57	M	Lumbar degenerative kyphosis	Spinal osteotomy with posterior instrumentation	Multiple level Ponte osteotomy
23	63	F	Degenerative spondyloarthropathy	Posterior instrumentation and fusion	PEEK cage
	36		Disc prolapsed, lumbar	Lumbar discectomy	Open method
24	56	F	Spondylolisthesis- lumbar	Posterior instrumentation, reduction and fusion, L5-S1	PEEK cage
25	72	F	Vertebral collapse, D12	Kyphoplasty- D12	Balloon kyphoplasty
26	74	F	Vertebral collapse, L2-L3	Kyphoplasty- L2,L3	Balloon kyphoplasty
27	69	M	Lumbar canal stenosis	Posterior decompression and instrumentation--L2-L5	PEEK cage
28	32	M	Prolapsed Intervertebral Disc	Discectomy	Open method
29	60	M	Lumbar degenerative spondylosis	Lumbar decompression and medial partial facetectomy	No fixation
30	58	F	Degenerative disc disease, L4/L5	Lumbar decompression and instrumentation	No fixation
31	67	M	Degenerative lumbar spondyloarthropathy, L5-S1	Posterior instrumentation and decompression	PEEK cage
32	59	F	Multisegmental thoracolumbar degenerative disease	Posterior Decompression	No fixation
33	32	F	Tuberculosis spine D8-D9 with paravertebral abscess-D7-D10.	Posterior pedicle screw fixation followed by anterior decompression and cage fixation	Combined anterior and posterior approach
34	16	M	Post-tuberculosis sequelae with D8/D9 kyphosis with myelomalacia	Posterior instrumentation and pedicle subtraction osteotomy	Neuromonitoring
35	17	F	Adolescent idiopathic scoliosis	Posterior instrumentation from D3 to L2	MRI- double cords Neuromonitoring
36	16	F	Neuromuscular scoliosis	Posterior instrumentation and multiple Ponte osteotomy	Instrumentation levels were from D3 to L5