

**APSS Medtronic Fellowship 2017**  
**1<sup>st</sup> of November 2017 – 30<sup>th</sup> of January 2018**

**Fellow**

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**Host**

Dr. Yat Wa Wong  
Chief of Spine Division  
Department of Orthopaedic and  
Traumatology  
University of Hong Kong

Prof. Kenneth M.C Cheung  
Professor and Head  
Department of Orthopaedic and  
Traumatology  
University of Hong Kong

**Hospital Visited**

Duchess of Kent Children Hospital  
Sandy Bay Road, Hong Kong

Queen Mary Hospital  
University of Hong Kong  
Pokfulam Road, Hong Kong



**Asia Pacific Spine Society (APSS)**  
(Spine Section of APOA)

First of all, I would like to thank Asia Pacific Spine Society (APSS) for selecting me to attend this fellowship in the university of Hong Kong from 1<sup>st</sup> of November 2017 – 30<sup>th</sup> of January 2018. This is quite a good opportunity to interact and observe in a spine center with a lot of historical background.

The APSS and University of Hong Kong arranged all the airline ticket, accommodation, and visa. I arrived in Hong Kong on 1<sup>st</sup> of November 2017 and joined the activity on 2<sup>nd</sup> of November 2017. I stayed in Mia Casa Hotel, located in Kennedy Town, I was the third APSS fellow who stayed at the hotel during the fellowship. The hotel was good, a lot of restaurant and mini market around the hotel.

On the 2<sup>nd</sup> of November, I went directly to DKCH and met with Dr. Yat Wa Wong. He was not attending on that day, I was attached to Prof. Kenneth MC Cheung and Dr. Kenny Kwan to observe the operation. During my stay here, I attended several meetings held by the department such as Musculoskeletal Tumor Course, Lumbar Spine Surgery Workshop and also I attended some visiting professor lectures by Prof. Laurence Rhines (Spinal metastasis Evaluation and Management) from MD Anderson and by Prof. Frank Phillips (Lateral Spine Surgery: History, Indication, Outcomes, Complication and Avoidance) from RUSH University.



## Weekly Fellowship Program

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>AM</b>	<b>9:00 am</b> Scoliosis Clinic at Outpatient Dept, DKCH  OR <b>8:30 am</b> OT at Block F4, QMH	<b>8:30 am</b> OT at 1/F, Main Building, DKCH	<b>8:30 am</b> Ward Round at Ward 1/2, DKCH  <b>10:30 am</b> Clinical Conference at DKCH/QMH	<b>8:30 am</b> OT at 1/F, Main Building, DKCH	<b>8:30 am</b> Ward Round at Ward K13, QMH  <b>10:30 am</b> Research Activity	<b>8:30 am</b> Academic Activity At other hospitals
<b>PM</b>	Research Activity OR OT at Block F4, QMH	OT at 1/F, Main Building, DKCH	<b>2:00 pm</b> Adult Spine Clinic at Outpatient Dept, DKCH	OT at 1/F Main Building, DKCH	<b>12:45 pm</b> Pre-op Meeting at Lecture Theatre, Professorial Block, QMH  <b>2:00 pm</b> General Spine Clinic at Block S7, QMH	FREE



## Daily Fellowship Record

Date	Schedule	Consultant	Learning Process
November 2017			
Friday-3/11	Ward Round at Ward K13, QMH Clinic at QMH	Dr. Wong Yat Wa Prof. Kenneth Cheung	Spondylodiskitis
Wednesday-8/11	Ward Round at Ward 1/2, DKCH Clinic at DKCH	Cancelled	Presentation by Prof. Frank Phillip (Lateral Spine surgery)
Friday-10/11	Ward Round at Ward K13, QMH Clinic at QMH	Dr. Wong Yat Wa Prof. Kenneth Cheung	CSM, Laminoplasty, Anterior vs posterior approach in CSM
Wednesday-15/11	Ward Round at Ward 1/2, DKCH Clinic at DKCH	Dr. Wong Yat Wa	Spinal stenosis
Friday-17/11	Ward Round at Ward K13, QMH Clinic at QMH	Cancelled	Cancelled
Wednesday-22/11	Ward Round at Ward 1/2, DKCH Clinic at DKCH	Dr. Wong Yat Wa Prof. Kenneth Cheung	Thoracal myelopathy, healed TB kyphosis, Severe canal stenosis
Friday-24/11	Ward Round at Ward K13, QMH Clinic at QMH	Cancelled	Musculoskeletal tumor course
Wednesday-29/11	Ward Round at Ward 1/2, DKCH Clinic at DKCH	Dr. Wong Yat Wa Prof. Kenneth Cheung	Cervical degenerative disc, cervical operation approach
December 2017			
Friday-1/12	Ward Round at Ward K13, QMH Clinic at QMH	Cancelled	Cancelled
Wednesday-6/12	Ward Round at Ward 1/2, DKCH Clinic at DKCH	Cancelled	Cancelled
Friday-8/12	Ward Round at Ward K13, QMH Clinic at QMH	Cancelled	Cancelled
Wednesday-13/12	Ward Round at Ward 1/2, DKCH Clinic at DKCH	Dr. Wong Yat Wa Prof. Kenneth Cheung	Sacroiliac joint pain, Lumbal spine injection technique, Sciatica



Friday-15/12	Ward Round at Ward K13, QMH Clinic at QMH	Dr. Wong Yat Wa Prof. Kenneth Cheung	Complication of VCR, Fracture of thoracolumbar spine
Wednesday-20/12	Ward Round at Ward 1/2, DKCH Clinic at DKCH	Dr. Wong Yat Wa Prof. Kenneth Cheung	TB infection
Friday-22/12	Ward Round at Ward K13, QMH Clinic at QMH	Dr. Wong Yat Wa Prof. Kenneth Cheung	Degenerative spondylolisthesis, decompression alone or with instrumented fusion
Wednesday-27/12	Ward Round at Ward 1/2, DKCH	Christmas holiday	Christmas holiday
Friday-29/12	Ward Round at Ward K13, QMH	Christmas holiday	Christmas holiday
January 2018			
Wednesday-3/1	Ward Round at Ward 1/2, DKCH Clinic at DKCH	Prof. Kenneth Cheung	Spine metastasis, diagnosis and management
Friday-5/1	Ward Round at Ward K13, QMH Clinic at QMH	Dr. Wong Yat Wa Prof. Kenneth Cheung	AIS instrumentation level, correction technique
Wednesday-10/1	Ward Round at Ward 1/2, DKCH Clinic at DKCH	Dr. Wong Yat Wa Prof. Kenneth Cheung	Congenital scoliosis
Friday-12/1	Ward Round at Ward K13, QMH Clinic at QMH	Prof. Kenneth Cheung	Potts kyphosis, history of hong kong method
Wednesday-17/1	Ward Round at Ward 1/2, DKCH Clinic at DKCH	Dr. Wong Yat Wa Prof. Kenneth Cheung	C1-2 Subluxation, cervical myelopathy
Friday-19/1	Ward Round at Ward K13, QMH Clinic at QMH	Dr. Wong Yat Wa Prof. Kenneth Cheung	Upper cervical approach
Wednesday-24/1	Ward Round at Ward 1/2, DKCH Clinic at DKCH	Dr Yat Wa Wong	Neuromuscular scoliosis
Friday-26/1	Ward Round at Ward K13, QMH Clinic at QMH	Spine Summit Meeting	Spine Summit Meeting
Tuesday-30/1	Fly back to Indonesia	Fly back to Indonesia	Fly back to Indonesia



## Operation Log Book

Date	Sex/Age	Diagnosis	Procedure	Surgeon	Hospital
2/11/17	M/65	Cervical kyphotic deformity, stenosis C45	Corpectomy C4, iliac bone graft and anterior plating	Prof. Kenneth Cheung	DKCH
2/11/17	F/6	Early Onset Scoliosis	Body Jacket	Prof. Kenneth Cheung	DKCH
6/11/17	M/35	Neglected burst fracture Th12 with Kyphotic deformity	PSO, PSF	Prof. Kenneth Cheung	QMH
7/11/17	M/84	OFL C45	Laminoplasty C3-C6	Dr WY Cheung	DKCH
7/11/17	M/65	Stenosis L34 L45 with Spondylolisthesis L34 L45	Decompression, Posterior stabilization, Posterolateral fusion	Dr WY Cheung	DKCH
9/11/17	M/13	Neuromuscular Scoliosis	Scoliosis correction, PSF	DR. Yat Wa Wong	DKCH
13/11/17	M/55	Fracture of C1	Occipital Cervical fusion	Dr. Kenny Kwan/Dr. Yat Wa Wong	QMH
13/11/17	F/35	Spinal infection post scoliosis surgery	Debridement, implant removal	Dr. Yat Wa Wong	QMH
14/11/17	F/13	AIS	Selective thoracic fusion Th5-L1	Dr. Kenny Kwan	DKCH
14/11/17	F/64	Spondylolisthesis L34 L45	TLIF L34 L45	Dr. Yat Wa Wong	DKCH
16/11/17	M/63	OPLL	Laminoplasty	Dr. Yat Wa Wong	DKCH
16/11/17	M/53	Stenosis L45	Decompression	Dr. yat wa Wong	DKCH
20/11/17	F/67	MBD Spine with destruction of C5	Anterior corpectomy+MESH Cage, Posterior Stabilization	Dr. Yat Wa Wong	QMH
20/11/17	F/75	Implant exposed post posterior stabilization Th10-L2	Impant removal	Dr. Yat Wa Wong	QMH



21/11/17	F/13	AIS Lenke IAN	Scoliosis correction and PSF T5-L2	Dr WY Cheung	DKCH
21/11/17	F/63	Spinal stenosis L45	Decompression, laminectomy	Dr WY Cheung	DKCH
21/11/17	M/62	OPLL C4-C6, OFL Th2-3	Laminoplasty C3-C6, Laminectomy Th2-3	Dr Wong Yat Wa	DKCH
21/11/17	M/50	Stenosis L5S1	TESI	Dr Paul Kol	DKCH
21/11/17	M/83	Facet Joint arthritis L45	Medial brach block	Dr Paul Kol	DKCH
23/11/17	M/65	Stenosis L34 L45, Burst fracture L5	Decompression L34 L45, Kyphoplasty L5	Prof. Kenneth Cheung	DKCH
27/11/17	F/16	AIS lenke V BN (Cobb 45)	Scoliosis correction, PSF	Prof. Kenneth Cheung	QMH
28/11/17	F/67	OPLL with central cord syndrome	Laminoplasty C3-C6	Dr Paul Kol	DKCH
28/11/17	W/78	Spinal stenosis L45	ESI	Dr Paul Kol	DKCH
28/11/17	F/35	S1-2 Nerve root tumor	S1 laminectomy, tumor removal	Dr Yat Wa Wong	DKCH
30/11/17	M/48	HNP C45	ACDF C45	Dr Yat Wa Wong	DKCH
30/11/17	M/71	OPLL	Laminoplasty C3-C6	Dr Paul Kol	DKCH
5/12/17	F/22	AIS	PSF T2-L2	Dr WY Cheung	DKCH
5/12/17	F/63	OPLL C4-7	Laminoplasty C3-7	Dr Paul Kol	DKCH
5/12/17	M/72	Lateral recess stenosis L5S1	S1 nerve block	Dr Paul Kol	DKCH
5/12/17	F/62	Cervical radiculopathy C8	C8 nerve root block	Dr Paul Kol	DKCH
7/12/17	F/16	AIS	Anterior spinal fusion and correction Th 11-L3	Prof Keith Luk	DKCH
11/12/17	M/68	C1/2 Subluxation	C1 arch excision, C1-2 Transarticular fusion	Dr Yat Wa Wong	QMH
11/12/17	F/68	C1-2 Subluxation and OPLL	C12 decompression, C1-2 Transarticular	Dr Yat Wa Wong	DKCH



			fusion, laminoplasty		
12/12/17	M/43	HNP C45	ACDF	Dr Yat Wa Wong	DKCH
12/12/17	F/78	Spondylolisthesis L45, Stenosis L45	Decompression, L45 posterolateral fusion	Dr Yat Wa Wong	DKCH
12/12/17	F/69	Cervical myelopathy	Laminoplasty	Dr Paul	DKCH
12/12/17	M/46	SI joint arthritis	SI joint injection	Dr Paul	DKCH
14/12/17	M/17	AIS post PSF with nonunion on LIV	Revision PSF to L5	Prof. Kenneth Cheung	DKCH
18/12/17					QMH
19/12/17	F/64	Canal stenosis L45	Decompression, Laminectomy L4	Dr Paul	DKCH
19/12/17	F/10	AIS on growing rod	Rod distraction	Dr Paul	DKCH
19/12/17	F/16	AIS Lenke I	Scoliosis correction, PSF Th4-Th12	Dr Cheung	DKCH
21/12/17	F/12	AIS Lenke V	Scoliosis correction, ASF Th11-L3	Dr Yat Wa Wong	DKCH
4/1/17	F/11	AIS Lenke I	Scoliosis correction, PSF Th3-L1	Prof. Kenneth Cheung	DKCH
8/1/17	M/56	Spondylodiscitis L45	Debridement, decompression and PSF	Prof. Kenneth Cheung	QMH
9/1/17	M/45	Non union L45 with spondylodiscitis post PSF from Th11-L5 due to L2 burst fracture	Revision surgery, PSF to sacrum	Dr Yat Wa Wong	DKCH
11/1/17	M/66	Canal stenosis L45	Decompression laminectomy L45	Dr Jason	DKCH
11/1/17	F/57	OPLL	Cervical laminoplasty C3-C7	Dr Jason	DKCH
15/1/17	F/54	Severe kyphosis of thoracic spine due to healed TB	Anterior spinal fusion	Dr Yat Wa Wong	QMH
16/1/17	F/45	C56 herniated disc	ACDF	Dr Paul	DKCH
16/1/17	M/61	Canal stenosis L34	Decompression, laminectomy L3	Dr Paul	DKCH





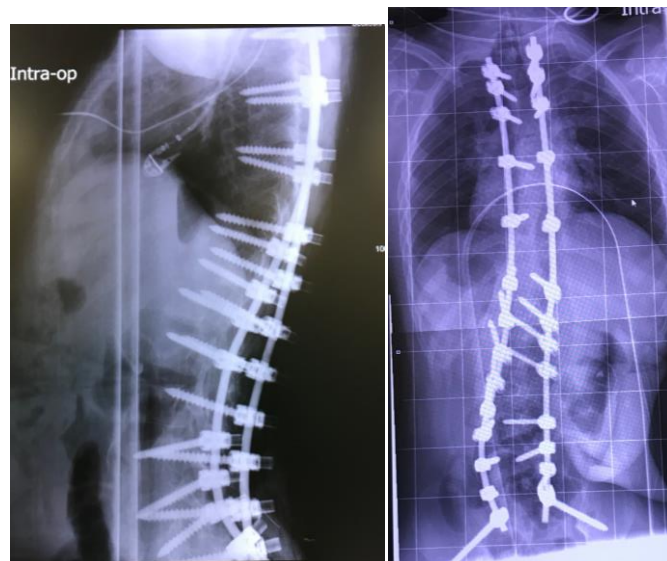
16/1/17	F/56	Degenerative spondylolisthesis L45	Decompression laminectomy, Instrumented fusion L45	Dr Cheung	DKCH
18/1/17	M/46	Spondyloepiphyseal dysplasia with C1-2 subluxation and subaxial cervical spine congenital stenosis	Decompression laminectomy, occipital cervical fusion	Prof. Kenneth Cheung	DKCH
22/1/17	F/65	Spinal stenosis L34, L45	Decompression and PSF	Dr Yat Wa Wong	QMH
23/1/17	M/13	Neuromuscular scoliosis with implant loosening	Revision of posterior instrumentation with pelvic fixation	Dr Yat Wa Wong	DKCH
23/1/17	M/74	MBD L1	Decompression and posterior stabilization	Dr Kenny Kwan	DKCH
25/1/17	M/62	Cervical stenosis C34,C45	Decompression laminectomy	Dr Yat Wa Wong	DKCH



## Case Examples

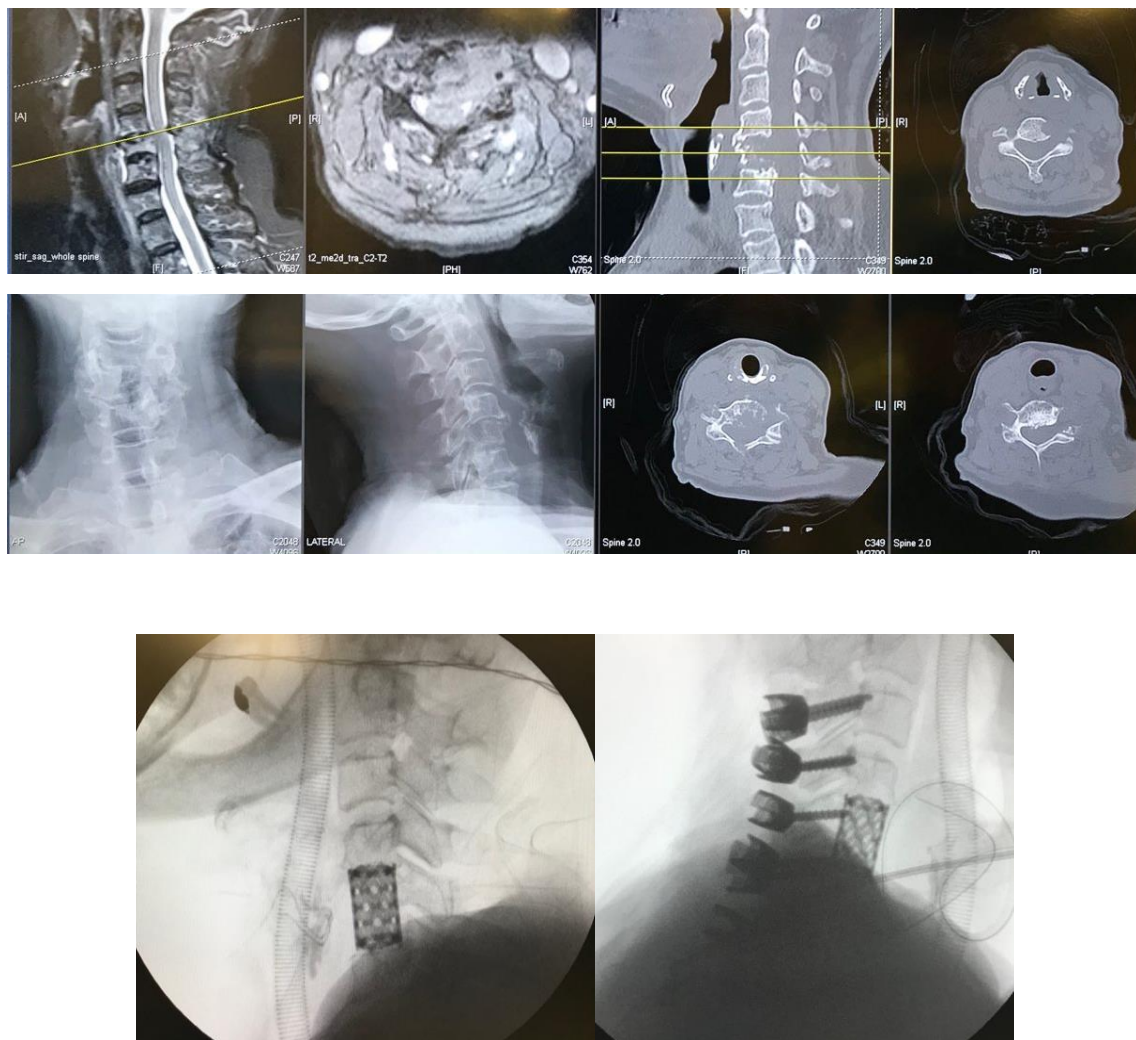
### 1. Neuromuscular scoliosis

This is a male, 13 years old with Total body involvement cerebral palsy. His problem was sitting balance disturbances with scoliosis. Patients was planned to have correction scoliosis surgery to improve sitting balance. Approach of this surgery was posterior from T2-sacrum. Dr. Wong showed us how to insert S2 alar-iliac screw. After the surgery sitting balance was achieved.



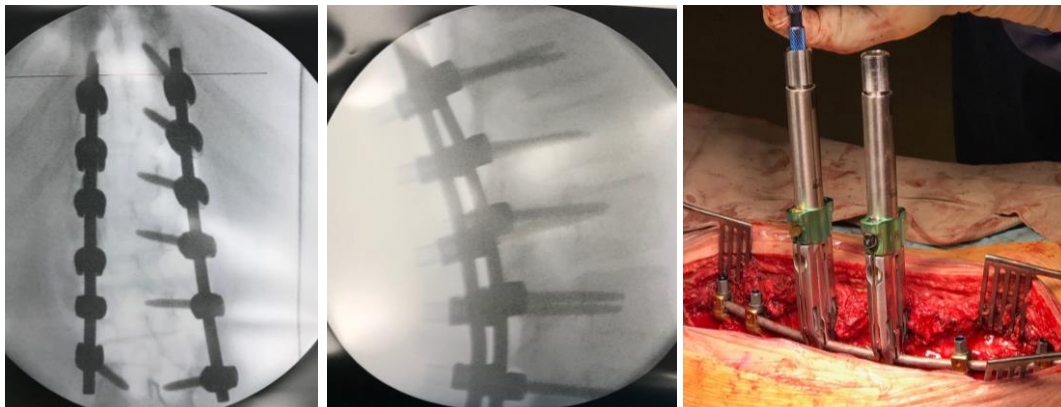
## 2. MBD C5 due to breast cancer

This is a female, 67 years old with history of breast cancer. She has been treated by oncologic surgeon with radical mastectomy and chemotherapy. The presenting complaint was axial neck pain. On MRI there was destruction of C5 vertebral body with tumor mass extending into spinal canal. Patient was treated with double approach, anterior corpectomy and mesh cage insertion and directly continued with posterior decompression+stabilisation using lateral mass screw.



### 3. AIS Lenke VBN (Cobb 45 degree)

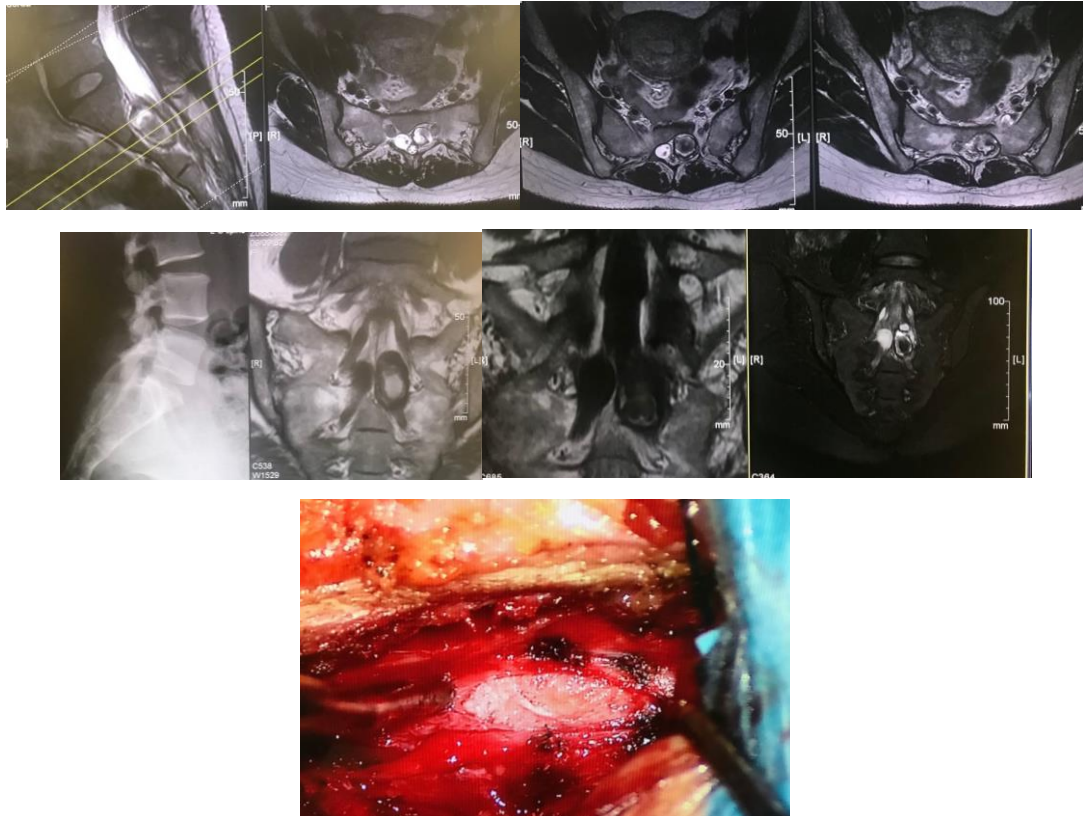
This is a female, 16 years old with progressive scoliosis. The patient planned for posterior spinal fusion from T11-L4. Normally in this kind of case they would do anterior spinal fusion surgery, but because there was back pain and lateral listhesis in the L3/4 they decided to fuse it until L4. Insertion of the screw into vertebral body the L4 would be quite difficult from the convex side, that's why posterior approach was chosen. In posterior surgery alternate screw fixation was commonly used in HKU for non rigid curve, but this case is special due to large amount of rotation in the vertebral body. In this case the surgeon did segmental derotation for each vertebrae. Post op lumbar lordosis was achieved and corrected perfectly.





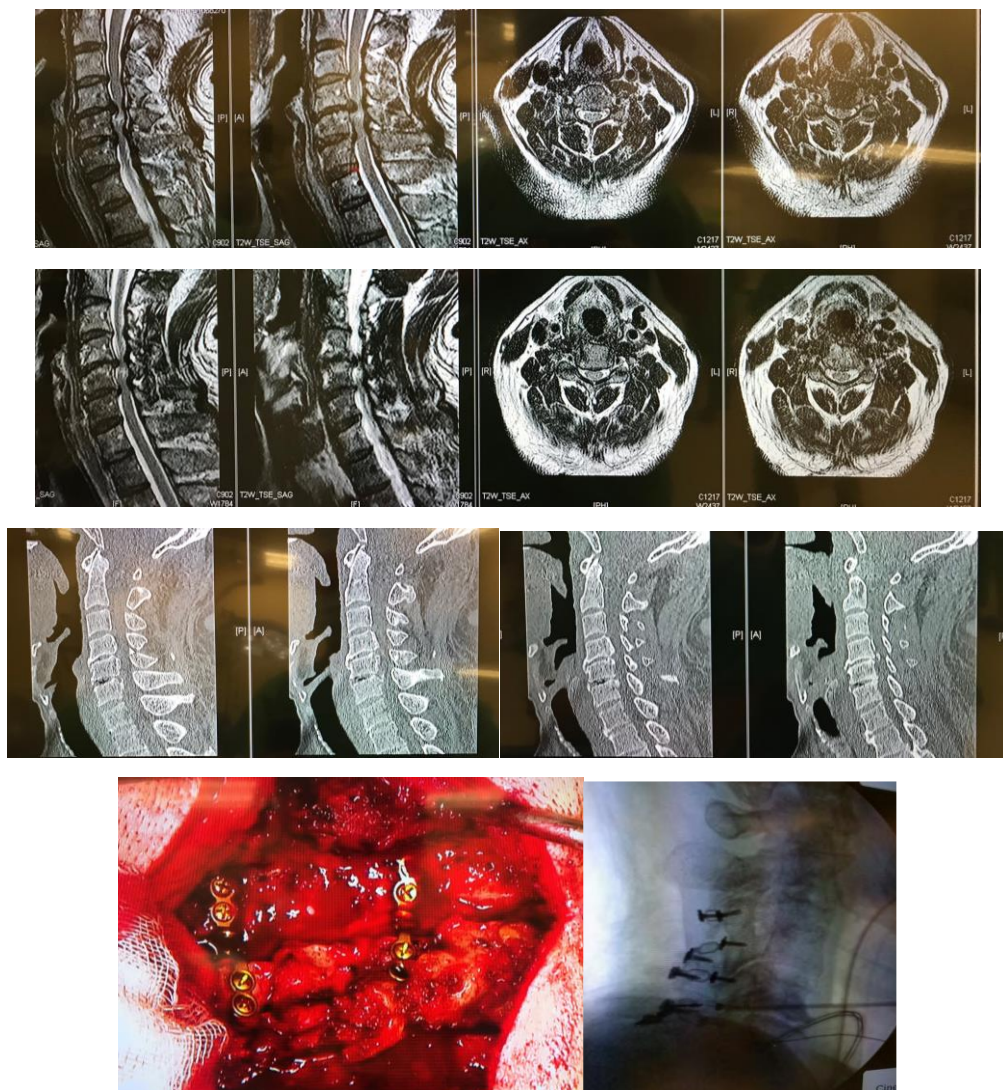
#### 4. S1-2 Nerve Root tumor

This is female 35 years old with chief complaint of difficulty miction and defecation. On MRI examination there was an expansile mass on the sacral canal with some bone erosion. The mass was suspected to come from the S1-2 nerve root. Dr. Wong did tumor removal surgery together with the neurosurgeon.



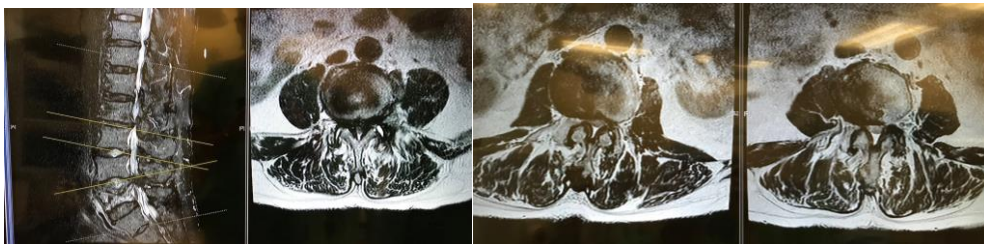
## 5. OPLL C5-6

This is a patient with diagnosis of cervical myelopathy due to OPLL. In east asia country the incident of OPLL is quite prevalent, making it one of the common cause for myelopathic condition. Decision for surgical management is based on combination of clinical symptoms and radiological diagnosis. For evaluation clinical symptoms, JOA score for cervical myelopathy is used, if the score was less than 13 then operative management is the option. Xray and MRI were used to determined the approach of the surgery whether it will be an anterior or posterior approach. Posterior approach by means of laminoplasty is commonly used in DKCH in patient with normal cervical lordosis and positive K-line.



## 6. Spinal stenosis L3/4, L4/5, Compression fracture L5

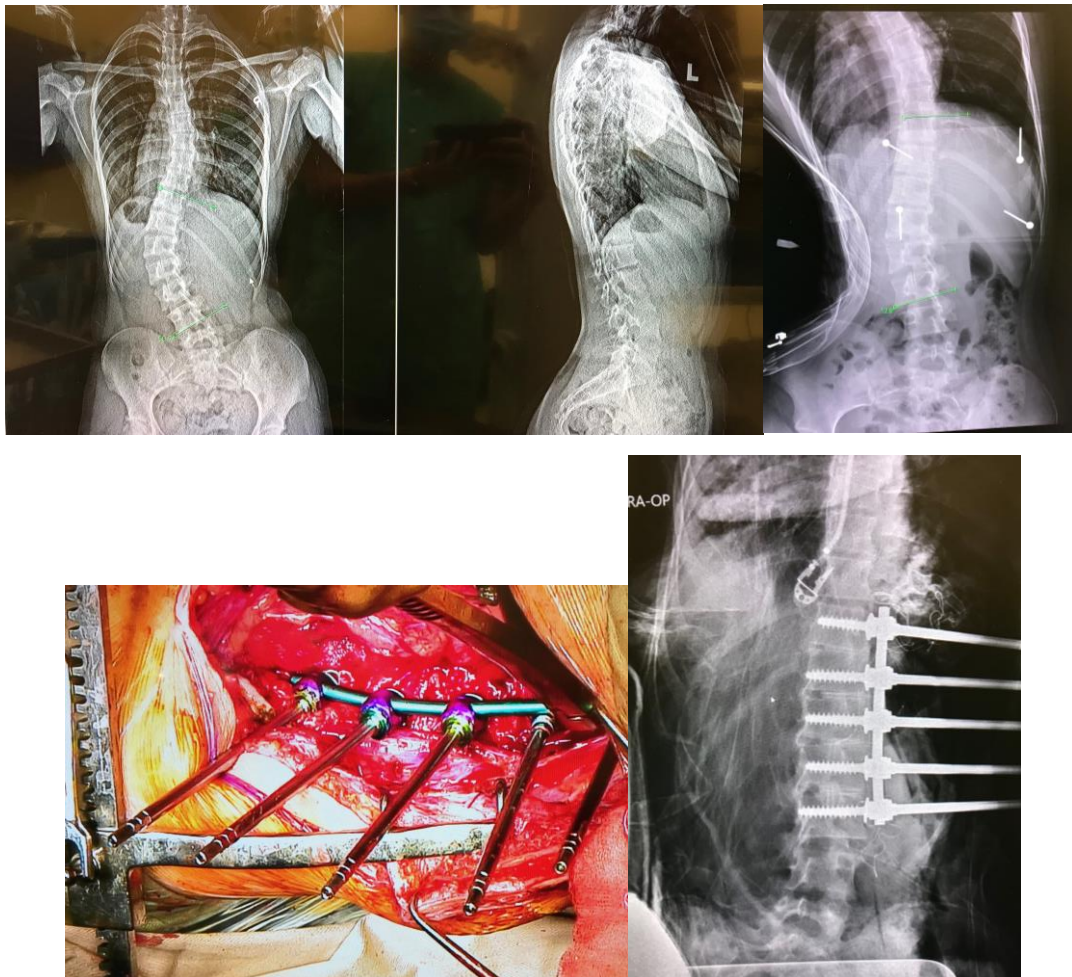
Spinal stenosis is a condition of narrowing of spinal canal, the management varies from conservative management until surgical management. In HKU, they are very conservative in managing patients with no rush in to surgery. Most of the surgeon would agree that this kind of case need surgical management right away, but they still tried to do medical therapy, physiotherapy, and spinal injection. Even though in the end the patient underwent surgery. For this case after all the conservative management, they did simple 2 level decompression surgery and kyphoplasty in the L5 level. Since this patient had already underwent all the conservative management, the recovery was much faster and the patient was very well prepared.





## 7. AIS Lenke V CN (Cobb angle 50)

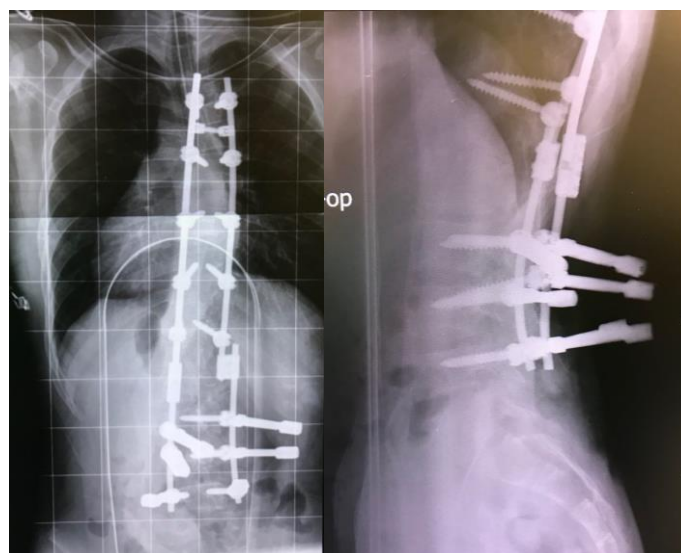
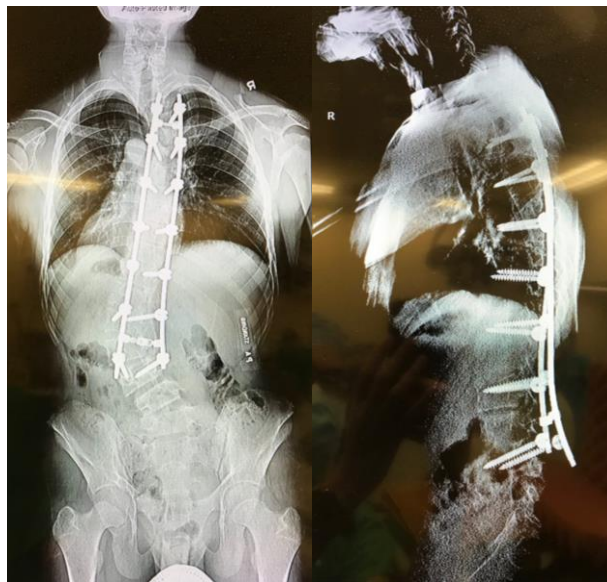
This is a girl with progressive idiopathic scoliosis. The correction was done using thoracophrenicolumbotomy approach. The incision was over the 10<sup>th</sup> rib, rib was cut, the border between diaphragm and abdominal cavity was open. The diaphragm was incised from the retroperitoneal space leaving a 2 cm lateral border of the diaphragm. Exposure of the lumbar spine, segmental artery were identified and sutured. Pedicle screw were inserted in the middle of vertebral body from the level of T11-L3 and the rod was inserted to get the correction. Implant used was USS synthes anterior fixation system.





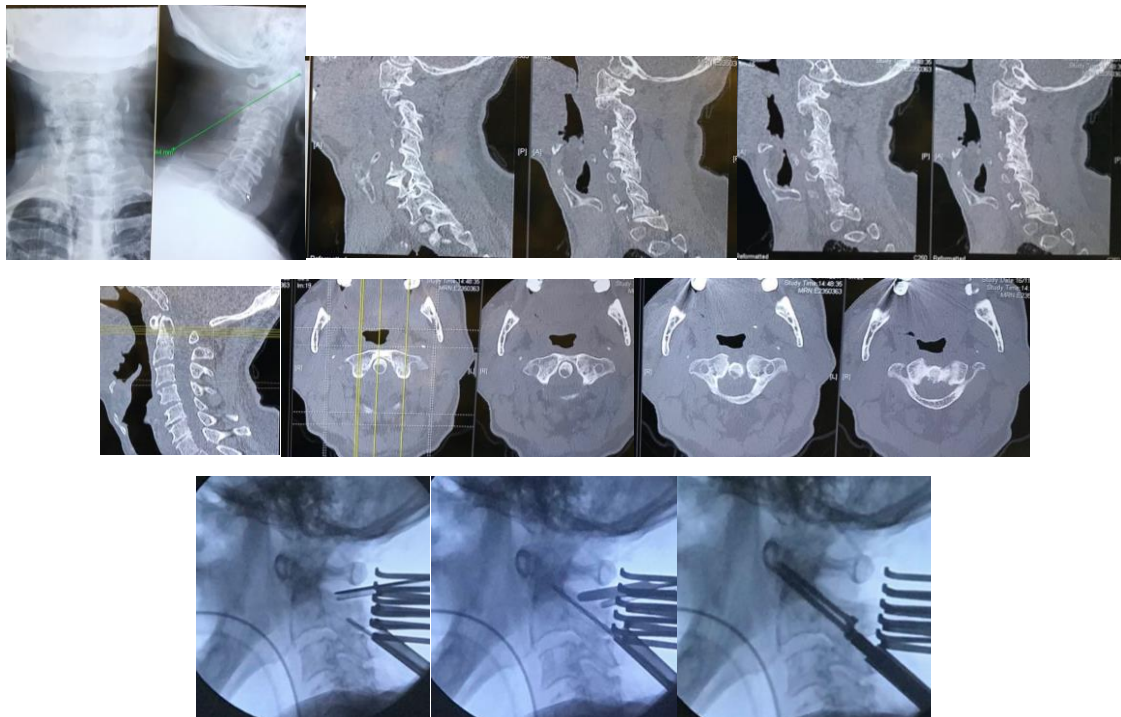
#### 8. AIS post PSF T4-L3, with adding on lumbar curve due to non union on LIV

Since there were a lot of scoliosis cases in DKCH, some of it need revision surgery. In this case there were distal adding on due to non union, we can see the implant was loosen and pulled out on the level of lower lumbar spine. Revision for this surgery was extension instrumentation into L5, Medtronic has end to end and side to side connector for easy connection between the two rod. This system makes revision easier without having to change all the rods.



## 9. C1-2 Subluxation with myelopathy

This is a patient with neck pain and C1-2 subluxation and myelopathy. The source of neck pain in this patient was the subluxation that lead to compression in the cord. Dr Wong did C1 arch excision, C1-2 transarticular fixation to deal with the problem. The screw was inserted from lower border of C2 facet 3 mm lateral and 3 mm superior from inferomedial border of facet joint angle 10 degrees medially and 45 degrees superior.



## Acknowledgement

I thank the Asia Pacific Spine Society, Department of Orthopaedic and Traumatology Hong Kong University for the hospitality and training opportunity. I also thank dr. Yat Wa Wong as the official host for this fellowship and also all the member of spine division in Queen Mary Hospital and Duchess of Kent Children Hospital.



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