



# Asia Pacific Spine Society (APSS)

( Spine Section of APOA )

## **APSS MEDTRONIC FELLOWSHIP REPORT**

**Duration** – 1<sup>st</sup> May 2024 to 31<sup>st</sup> July 2024

**Fellow:** Dr. Vijay Kumar Loya,  
MBBS, MS, DNB, FNB Spine surgery,  
Hyderabad, India.

**Host:** University of Hong Kong, Hong Kong SAR, China.



**HKU  
Med**

School of Clinical Medicine  
Department of Orthopaedics  
& Traumatology



I was lucky to have got **Asia Pacific Spine Society (APSS) Medtronic** fellowship on my second attempt. I knew about this fellowship when I was appearing for National board examination which prompted me to become a member of APSS and get actively involved.

My first choice was Hong Kong as I was interested to learn about spinal deformity. Thus, I was allotted **Department of Orthopaedics & Traumatology at University of Hong Kong.**

The department has access to about 400 beds in four hospitals: 132 beds in Queen Mary Hospital (QMH); 85 beds in The Duchess of Kent Children's Hospital (DKCH); 80 rehabilitation beds in Fung Yiu King Hospital (FYKH); and 100 rehabilitation beds in the MacLehose Medical Rehabilitation Centre (MLMRC).



Queen Mary Hospital





One of the highlights of this fellowship was the **Scoliosis Clinic**. With a robust school screening programme at ages 8 & 10 years and HKU being the only referral centre, this accounts for the high volume of paediatric deformity cases seen. It includes not just idiopathic but also congenital, syndromic, and neuromuscular cases. Some of the things originating here include DRU classification (Distal radius ulna), fulcrum bending radiographs and Magnetic controlled growing rods among many others. Wednesdays used to be the **Post-operative follow-up clinic** and Fridays were the **Adult Spine clinic**.



Left-to-Right Clockwise – OPD chamber, MAGEC Wand, Scolimeter, To measure arm-span length.



**Rounds** on Wednesday in DKCH and **Grand Rounds** in QMH on Friday were not just an opportunity to understand patient progress but also were occasion to learn spine academics and inter-disciplinary collaboration with nursing staff, allied health, research team, prosthetist, and orthotist.



**Wednesday Clinical Conference:** is an inter-division meeting of all divisions of Dept. of Orthopaedics & Traumatology, which includes interesting case discussion, clinical audit, visiting guest lectures among others.



**Pre-operative clinical meeting** on Fridays is a meeting where pre- and post-operative cases are discussed. Post-operative x-rays were shown and any challenges encountered during the case would be discussed. Pre-operative cases of cases two weeks in advance would be discussed and surgical plan and strategy would be devised. Any other matters which needed discussion were put forth.





Operation theatres are state-of-the-art centres with cutting-edge technology.



Mazor X Robot (Medtronic)



7D Flash Navigation



Work-in-progress at The Duchess of Kent Children's Hospital

## OPERATIVE LOGBOOK

S.No	Date	Patient	Age/Sex	Diagnosis	Surgery	Surgeon	Assisted/ Observed
1	02/05/24	KC	70/M	Cervical spondylotic Myelopathy	Laminectomy and fusion C3-6	CT	O
2	02/05/24	YC	66/F	Degenerative listhesis L3-4, L4-5 with canal stenosis	Spinous process splitting decompression	CT	O
3	07/05/24	HC	66/M	Ventilator-dependent Spinal Cord Injury	Diagnostic Laprascopy	PAK+RO	O
4	07/05/24	FCH	64/M	Ventilator-dependent Spinal Cord Injury	Diagnostic Laprascopy with diaphragmatic pacing	PAK+RO	O
5	07/05/24	CGW	82/M	Ventilator-dependent Spinal Cord Injury	Diagnostic Laprascopy	PAK+RO	O
6	07/05/24	SCC	71/M	Ventilator-dependent Spinal Cord Injury	Diagnostic Laprascopy	PAK+RO	O
7	09/05/24	KYS	15/F	AIS 1AN	STF T5-12	JPYC	A
8	09/05/24	MML	77/F	Degenerative listhesis L4-5, L5-S1 with degenerative scoliosis	UBE Decompression	JPYC	O
9	13/05/24	SKD	13/F	AIS with cobbs angle 126 on halo-gravity traction	T5-L4 instrumentaion, deformity correction and fusion	KYHK	A
10	14/05/24	KWL	77/F	Cervical spondylotic Myelopathy	Laminoplasty C3-6	WYC	O
11	14/05/24	WWLC	84/F	L4-5 TLIF with ASD L5-S1 with right radiculopathy	L5 Transforaminal epidural steroid injection	WYC	O
12	14/05/24	PYSW	59/F	L3-4 Lumbar Canal Stenosis	L3 Transforaminal epidural steroid injection	WYC	O
13	14/05/24	YPC	13/F	Neuromuscular scoliosis	Baclofen refill	WYC	O
14	16/05/24	WNC	60/M	Cervical spondylotic Myelopathy	C3-7 Laminoplasty	CT	O
15	16/05/24	LKC	78/F	L5-S1 (L) Facet cyst	C-Arm guided aspiration	CT	O
16	16/05/24	SPL	65/F	Degenerative scoliosis with L4-5 stenosis	Right sided Transforaminal epidural steroid injection	CT	O
17	16/05/24	SYL	76/F	L4-5 Lumbar canal stenosis	UBE Decompression	CT	O
18	21/05/24	SWL	59/F	C6 metastasis secondary to Ca Breast	Seperation surgery C3-T2	KYHK	A

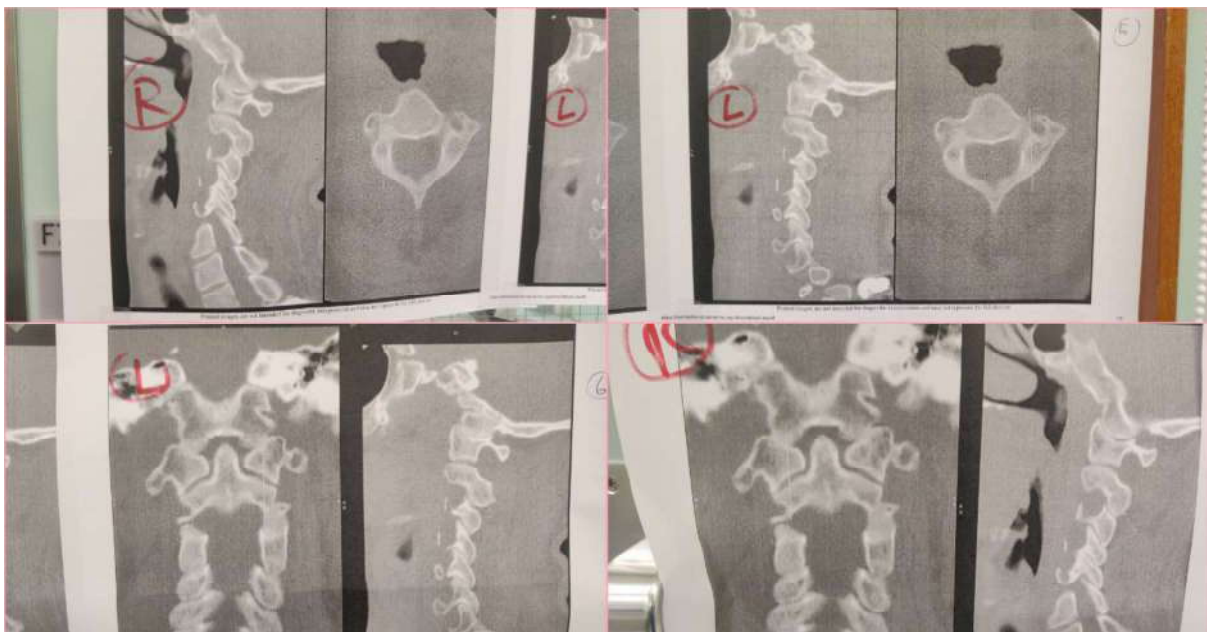


19	21/05/24	CMK	74/M	Lumbar canal stenosis L4-S1 with instability	L4-5 TLIF with L4-S1 posterolateral fusion	KYHK	A
20	23/05/24	CW	20/M	Lenke 1AN with 72 cobbs stiff curve	STF T3-12	JPYC	A
21	27/05/24	LMT	33/M	Thoracic OPLL	T1-5 decompression & fixation using MazorX	KYHK	O
22	28/05/24	HMK	18/F	Failed VBT T6-12	PSF T2-L3	PAK	A
23	28/05/24	TCH	35/M	C5-6, C6-7 PIVD with right radiculopathy	Diagnostic Transforminal block C6-7	PAK	O
24	30/05/24	MK	13/M	AIS 1C-	PSF T5-L1	JPYC	A
25	30/05/24	KYC	75/M	L4-5 Gr I degenerative listhesis with L5-S1 stenosis	UBE Decompression	JPYC	O
26	03/06/24	ST	81/M	L4-5 Lumbar canal stenosis	UBE Decompression	PAK	O
27	04/06/24	CYC	56/F	Cervical spondylotic Myelopathy	C3-7 Laminoplasty	PAK	A
28	04/06/24	WCY	12/F	AIS 1AN with cobbs 54	T5-L1 PSF	PAK	O
29	05/06/24	WH	89/M	D9 Myeloma with pathological fracture with impending neurodeficit	D6-12 Fixation & decompression with transpedicular biopsy	WYC	O
30	06/06/24	WSC	26/F	S/P T11-L5 Fusion with ASD, K/C/O Congenital insensitivity to pain with cauda equina syndrome	Extension of fusion with TLIF L5-S1 and lumbopelvic fixation with fusion	PAK	O
31	11/06/24	LS	43/F	C4-5 PIVD	CDR	DH+JPY C	O
32	11/06/24	KWC	59/M	C5-6 CSM	CDR	DH+JPY C	O
33	11/06/24	LKW	59/M	CSM with kyphosis and disc osteophytes, C4-5, 5-6, 6-7	CDR	DH+JPY C	A
34	18/06/24	TCF	15/F	Lenke 5C AIS with cobb 52	ASF	PAK	A
35	20/06/24	KHW	16/F	AIS 1A- with cobbs 52 MT and 37 PT	T2-12 STF with Ponte's	JPYC	A
36	24/06/24	YWT	83/M	L4-5 Lumbar canal stenosis	UBE Decompression	KYHK	O
37	25/06/24	TCM	78/M	C3-4 PIVD with stenosis	CDR	JPYC	A
38	25/06/24	PTL	72/M	L2-5 Lumbar Canal Stenosis	UBE Decompression	JPYC	A
39	27/06/24	LLF	52/F	Neglected AIS with 63.4 cobbs	T8-pelvis fusion with OLIF L1-4	JPYC	O
40	02/07/24	KYH	14/F	Lenke Type 3	STF T5-12	PAK	O
41	02/07/24	CHI	12/F	Post-VBT with overcorrection	Implant removal	JPYC	A
42	04/07/24	PT	79/F	L4-5 Stenosis with L5-S1 facet osteophyte	UBE Decompression	JPYC	O

43	04/07/24	AOL	72/M	L2-S1 LCS	UBE Decompression	JPYC	O
44	05/07/24	CKW	30/F	K/C/O NF with C1, C3 Nerve root tumour	PSI C1-2 TA with LMS C3-4 with tumour excision	PAK	O
45	08/07/24	YL	15/F	AIS T11-L4	PSF using MazorX	KYHK	O
46	09/07/24	THC	64/F	T4 collapse	Decompression+fusion D2-7 with biopsy	JPYC	O
47	09/07/24	AKKL	12/F	AIS 1AN	VBT T5-12	JPYC	O
48	11/07/24	CFL	78/M	L2-3 Stenosis	UBE Decompression	GS	O
49	11/07/24	FLK	64/M	L2-5 Lumbar Canal Stenosis	UBE Decompression	JPYC	O
50	15/07/24	HLK	16/M	T12 hemivertebra with scoliosis, S/P detethering	T10-pelvis fusion using MazorX	PAK	O
51	16/07/24	WCW	43/F	Neglected AIS with 73.6 cobbs	T10-L5 fusion	KYHK	A
52	17/07/24	LY	16/M	S/P T10-L3 PSF with neurologic deficit post-op	Exploration & implant removal	KYHK	O
53	18/07/24	JC	16/M	Lenke Type 2 with hyperkyphosis	STF T2-12	KYHK	A
54	19/07/24	SKM	82/M	T7-11 Spinal tumour with sudden-onset paraplegia	Decompression+fusion D5-L1 with biopsy	CT	A
55	22/07/24	TTL	54/F	S/P GCT with broken implants	Implant exchange and fusion	KYHK	O
56	22/07/24	KSN	73/M	S/P L3-5 OLIF with PPS with stenosis L4-5	UBE Decompression	KYHK	O
57	23/07/24	WPHK	9/M	Neuromuscular scoliosis	Halo Ring insertion	PAK	O
58	23/07/24	LHC	16/F	AIS Lenke Type 3 with MT 45 & TL 61	PSF T4-L3	PAK	O
59	25/07/24	ACY	15/F	AIS Type II Lenke PT - 43.4, MT - 66.9	PSF T2-L2	PAK	A
60	26/07/24	LFN	73/F	Extensive Lumbar & Thoracic Epidural abscess with cauda equina syndrome	Lumbar abscess drainage	GS	A

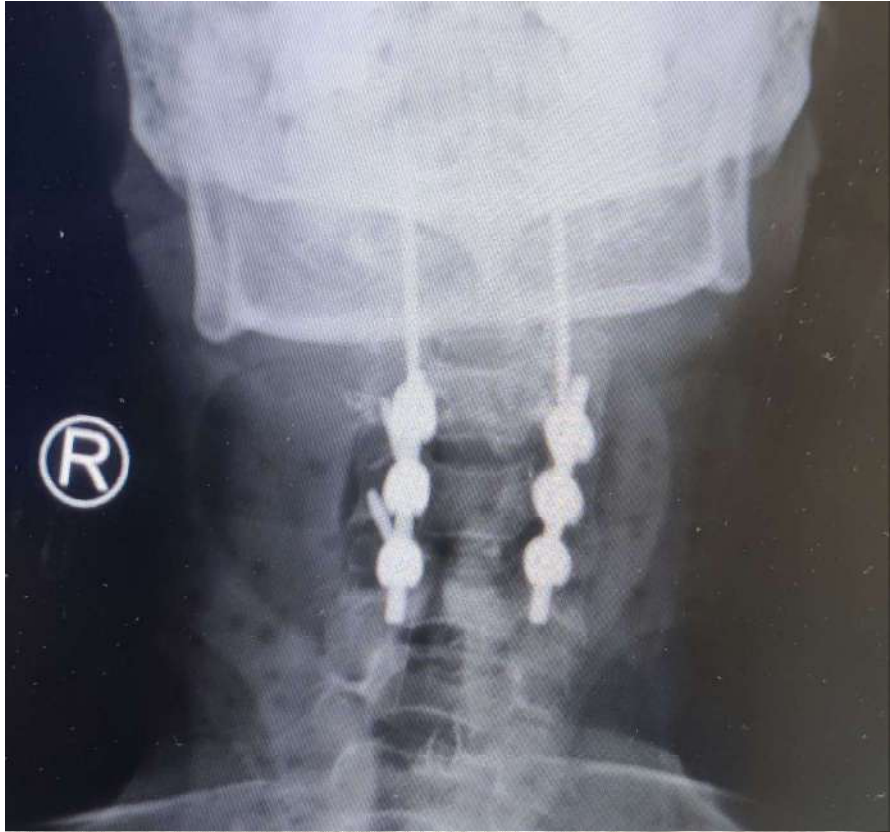
Abbreviations: CT- Dr. Chris Tang, PAK – Dr. Paul A. Koljenen, RO – Dr. Raymond Onders, JPYC – Dr. Jason Cheung, KYHK – Dr. Kenny Kwan WYC – Dr. WY Cheung, DH – Dr. Dennis Hey GS- Dr. Graham Shea

**Interesting Case #1:** 25-year-old, male, known case of Neurofibromatosis with nerve sheath tumour of C1 and C3 nerve roots bilaterally with high cervical myelopathy. Combined orthopaedic and neurosurgical procedure was done. C1, C3 & C4 laminectomy was done leading to immediate intra-operative improvement in Somatosensory Evoked Potential. 3D-printed patient-specific jigs were used for instrumentation.



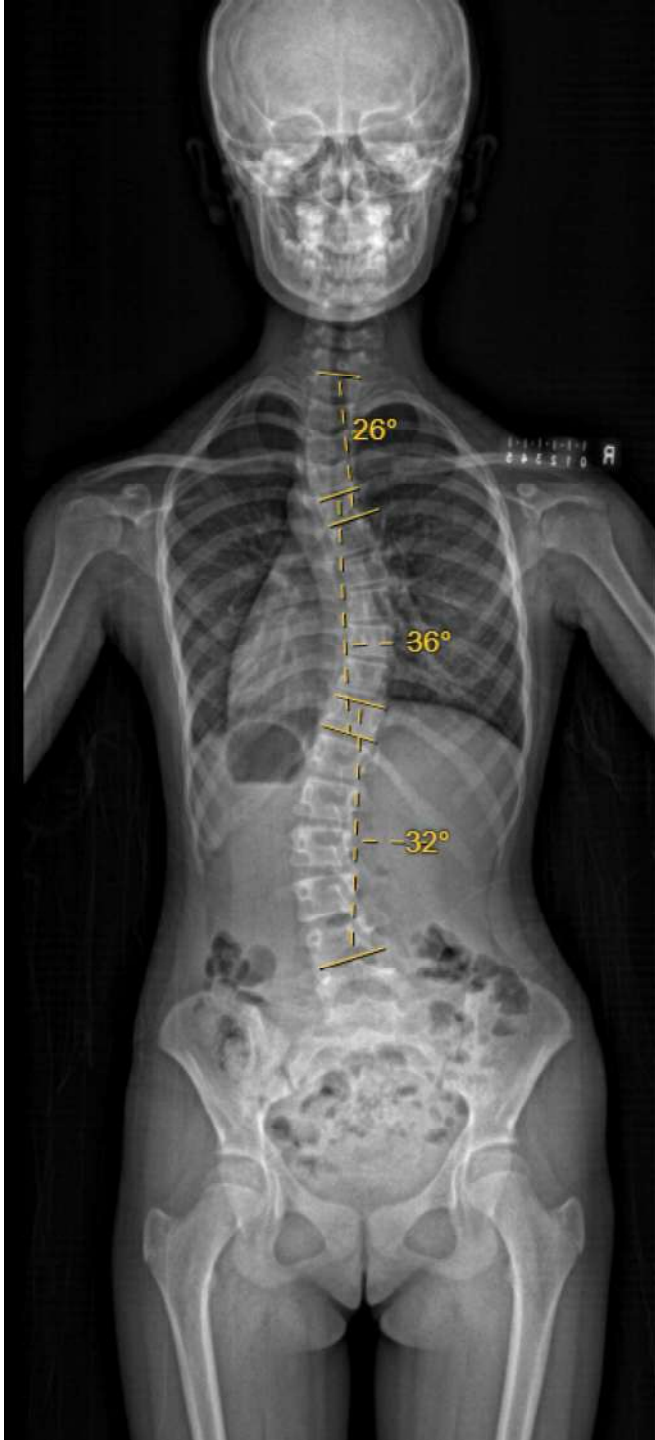
C1-2 Transarticular screw with C3-4 lateral mass screw fixation was done, Laminectomy of C1, C3 & C4 was done and tumour was well-circumscribed and was removed by neurosurgical team after intentional durotomy.



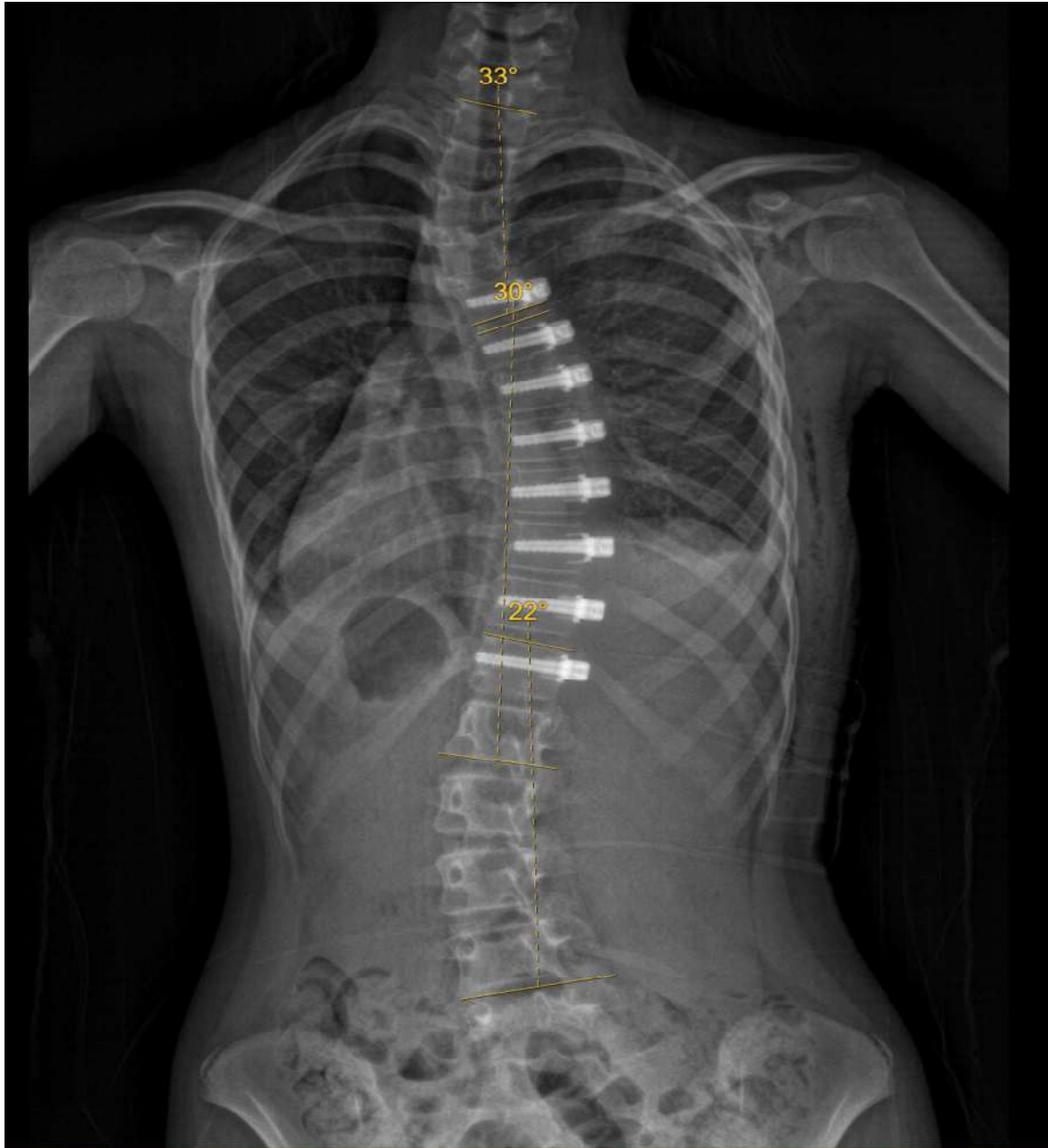


**Interesting Case #2:**

11-year-old, Premenarchal girl with Risser 0, Sanders 4, DRU 7/5, cobb's 38, progressing after bracing, Lenke 1AN, Vertebral body tethering was done T5-12. Post-operative cobb was 32.



Fulcrum bending was correcting upto 8°. Patient was positioned in lateral position with single lung ventilation. Thoracoscopic-assisted Vertebral body tethering was done using ZimVie (HighRidge Medical). Intra-operative correction was upto 18°. Post-operative was upto 30°.



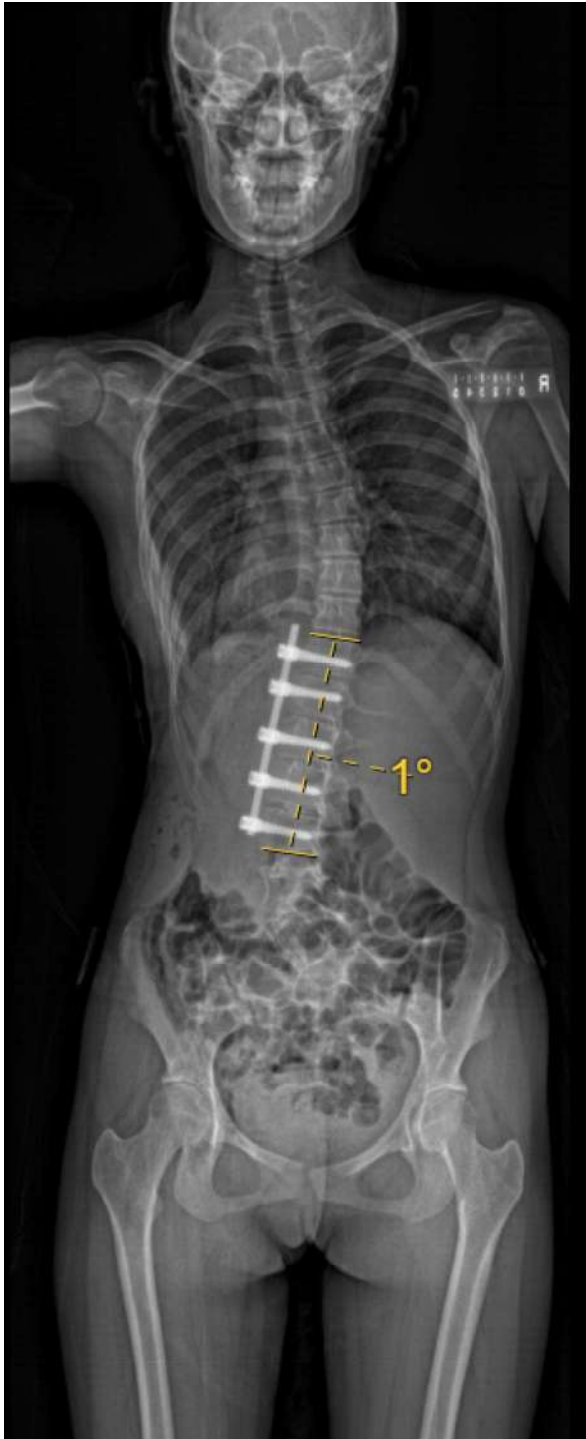


**Interesting Case #3:** 14-year-old Female, Post-menarchal, Risser 3, R9, U6 Lenke 5C curve with Cobb's angle 50, Posteriorly would have needed at least T10-L4 fusion, to preserve a lumbar motion segment anterior spinal fusion from T11-L3 was done.

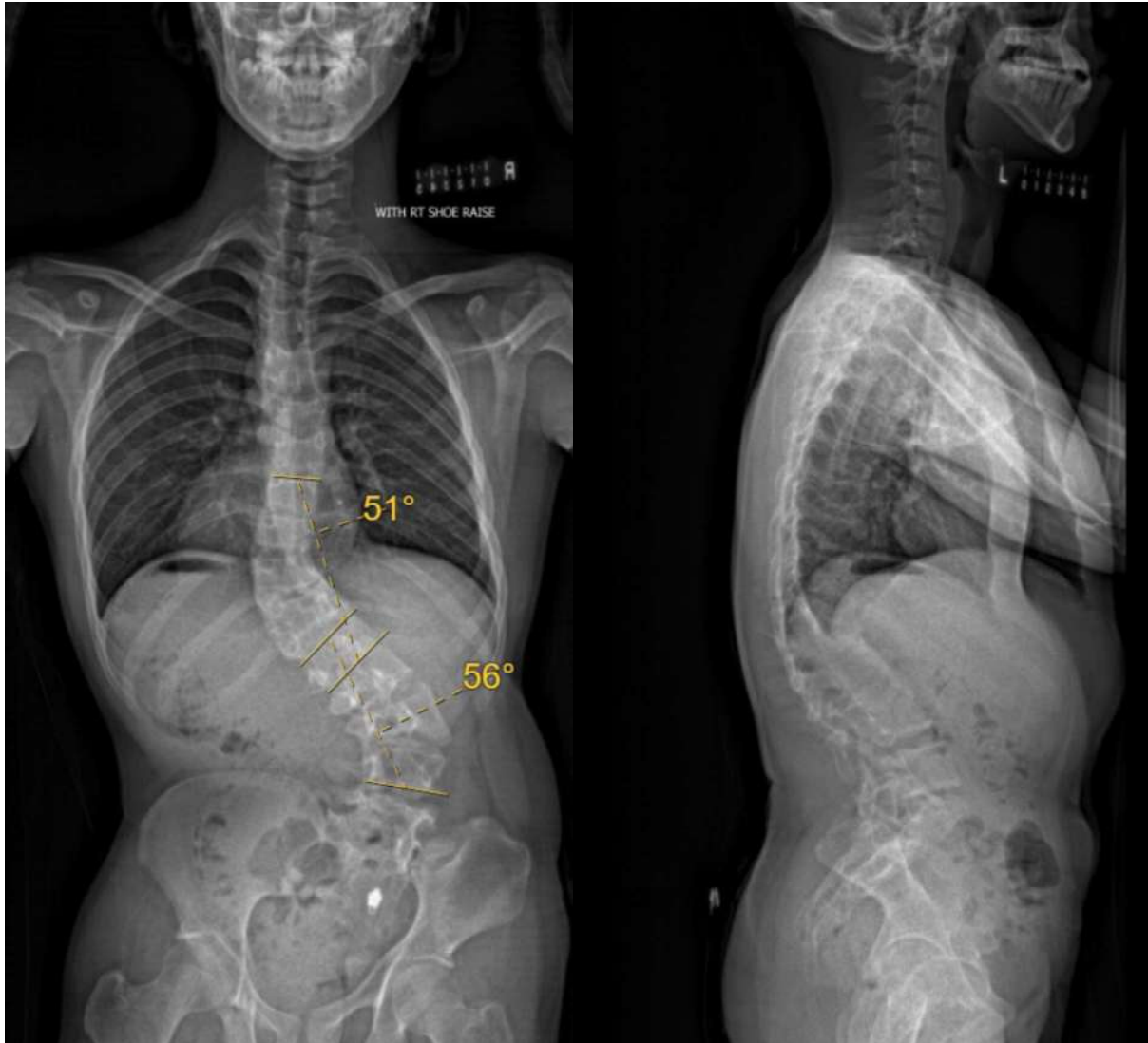


Patient in lateral position, bloodless dissection was done and “hills and valleys” exposed. Part of 10<sup>th</sup> rib was excised, meticulous disc preparation was done, Anterior longitudinal ligament was not released, rib was grafted and monoaxial Medtronic screws were used and fusion done. Closure done over Pleur-EVAC drain.

Post-operatively parallel fusion block with only 1° angulation.



**Interesting Case #4:** 15-year-old male with Tethered cord syndrome with fibrolipoma, associated acetabular dysplasia, with right club foot and T12 hemivertebra. Laminectomy and detethering done at 9 months of age & in January 2024. Presented with curve progression with no neurodeficits.

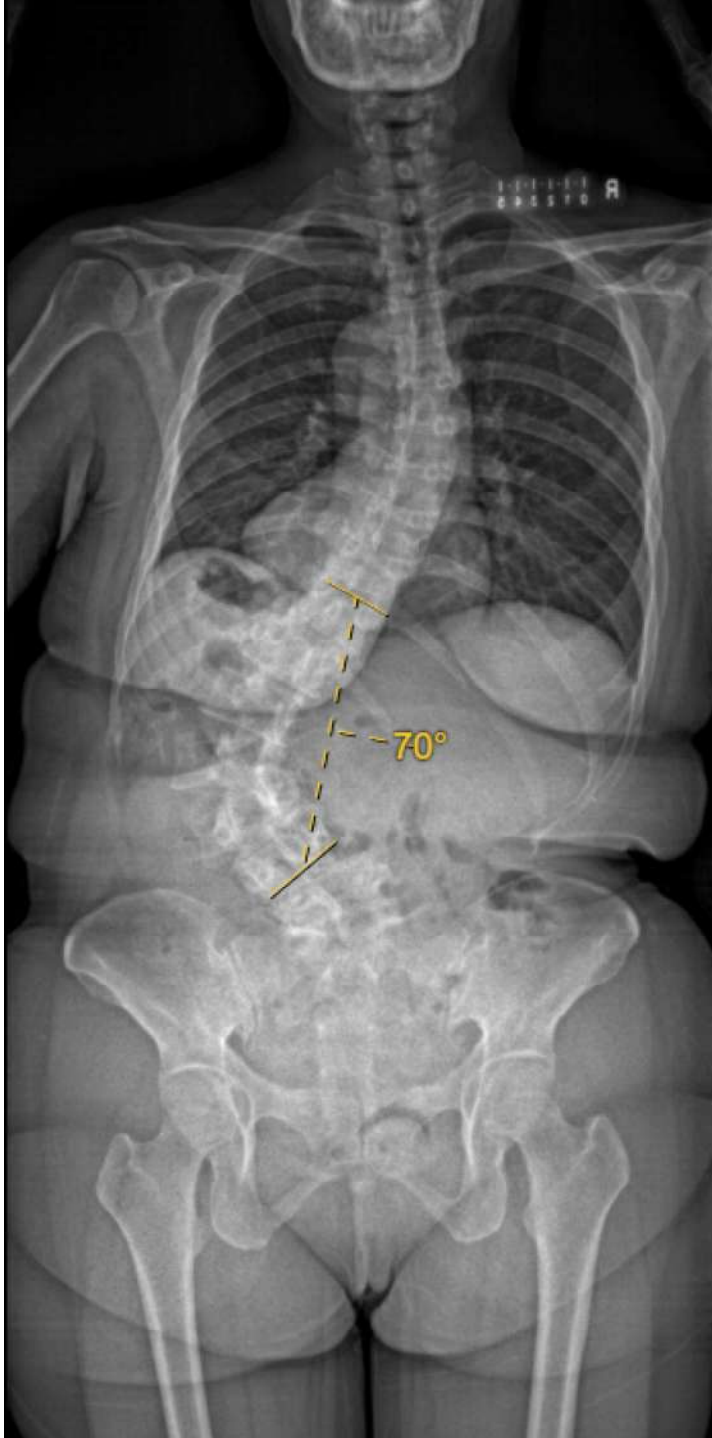


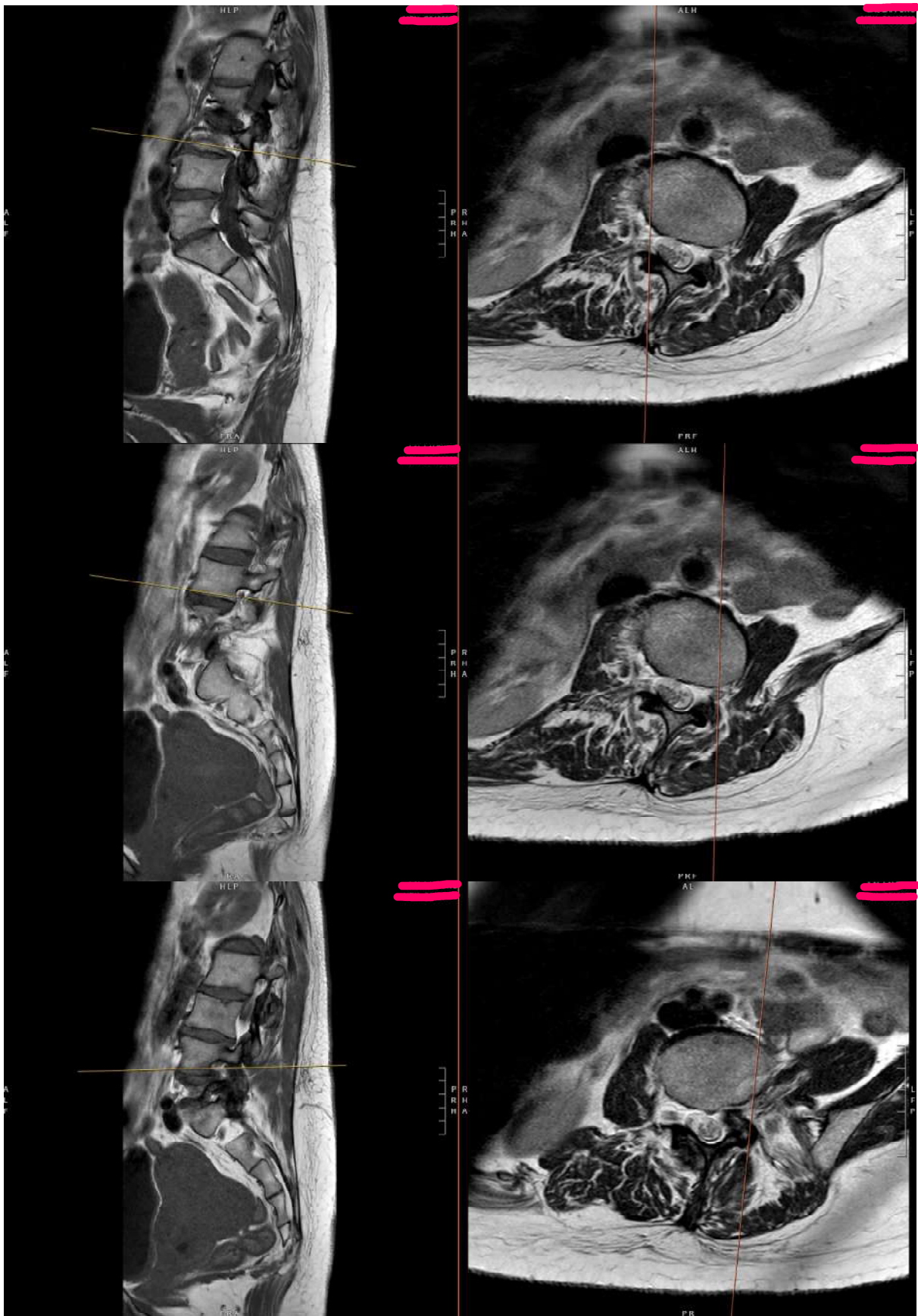
Cobbs angle T8-L1 - 55°, T12-L4 - 56°, correcting on fulcrum bending to 22°. T10-pelvis fixation using MazorX (Medtronic) Robot, intra-op 3D printed model was available for further help. 4-rod construct was used for additional stability and fusion was done.





**Interesting Case #5:** 52-year-old lady, a case of neglected AIS presented with mechanical back pain with pain radiating to left buttock and posterolateral thigh and calf. There was trunk shift to left clinically but no neurodeficits. Cobb's angle was  $70^\circ$  which was reduced to  $45^\circ$  on fulcrum bend. Sagittal parameters were within normal limits.

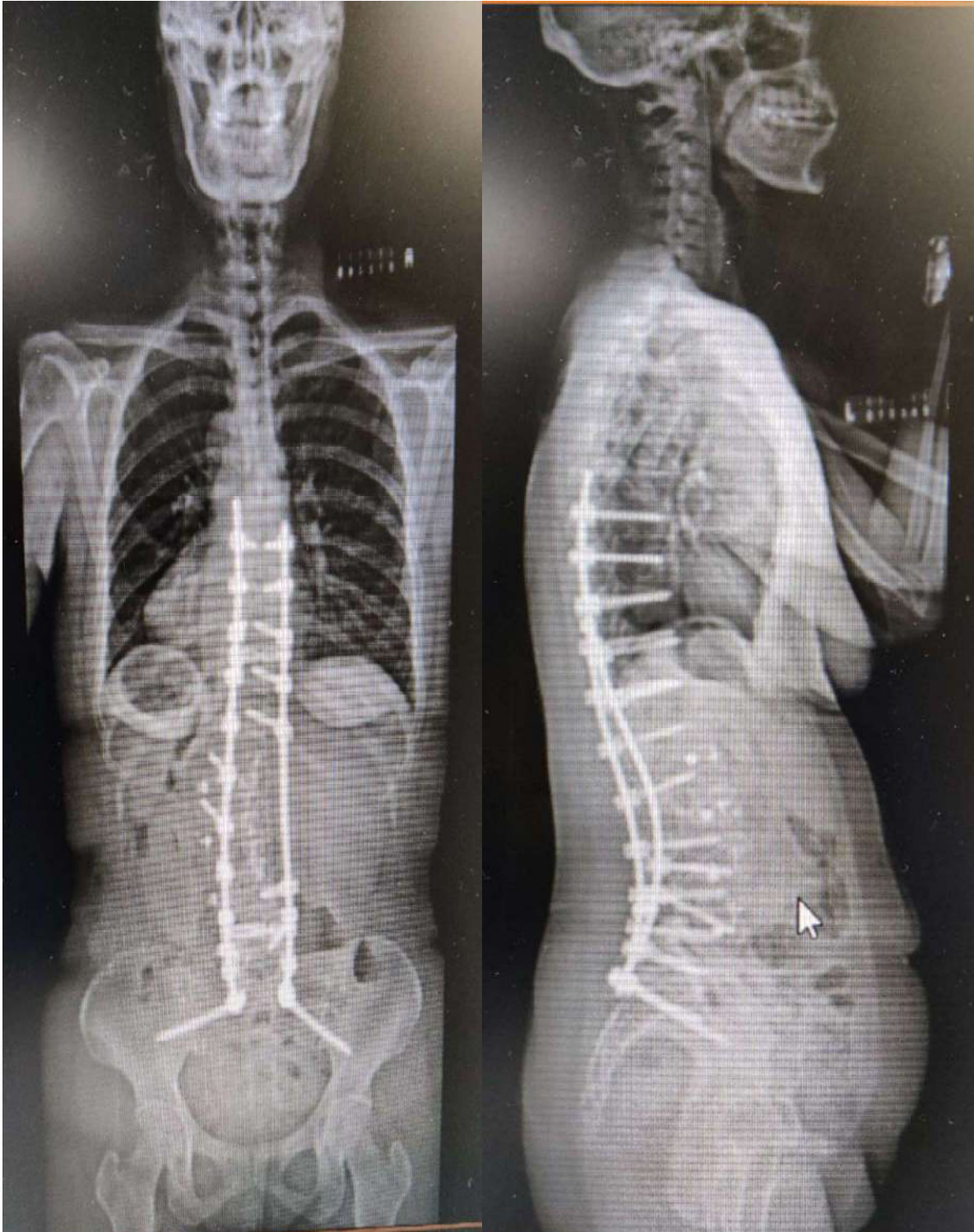




MRI showed foraminal compression of Left L4 exiting nerve root.



Oblique lateral interbody fusion was done in Right Lateral position from L1-2 to L4-5, Patient was positioned prone and T8-Pelvis fusion with Ponte's osteotomy was done using 7D Flash Navigation.



**VISITING PROFESSORSHIP: Prof. Raymond O. Onders, Professor of Surgery, University Hospital, Cleveland Medical Centre, Ohio, U.S.A.**

Patients with traumatic spinal cord injury of cervical spine can become chronically ventilator-dependent, diaphragmatic pacing is a good option to wean such patients off the ventilator. Prof. Onders performed diagnostic laparoscopy and diaphragmatic pacing in suitable patients.





**VISITING PROFESSORSHIP: Dr. Dennis Hey**, Assistant Professor, National University of Singapore, Singapore. Dr. Dennis did surgical demonstration of Cervical Disc Arthroplasty, also took part as faculty of APSS operative course and meeting.





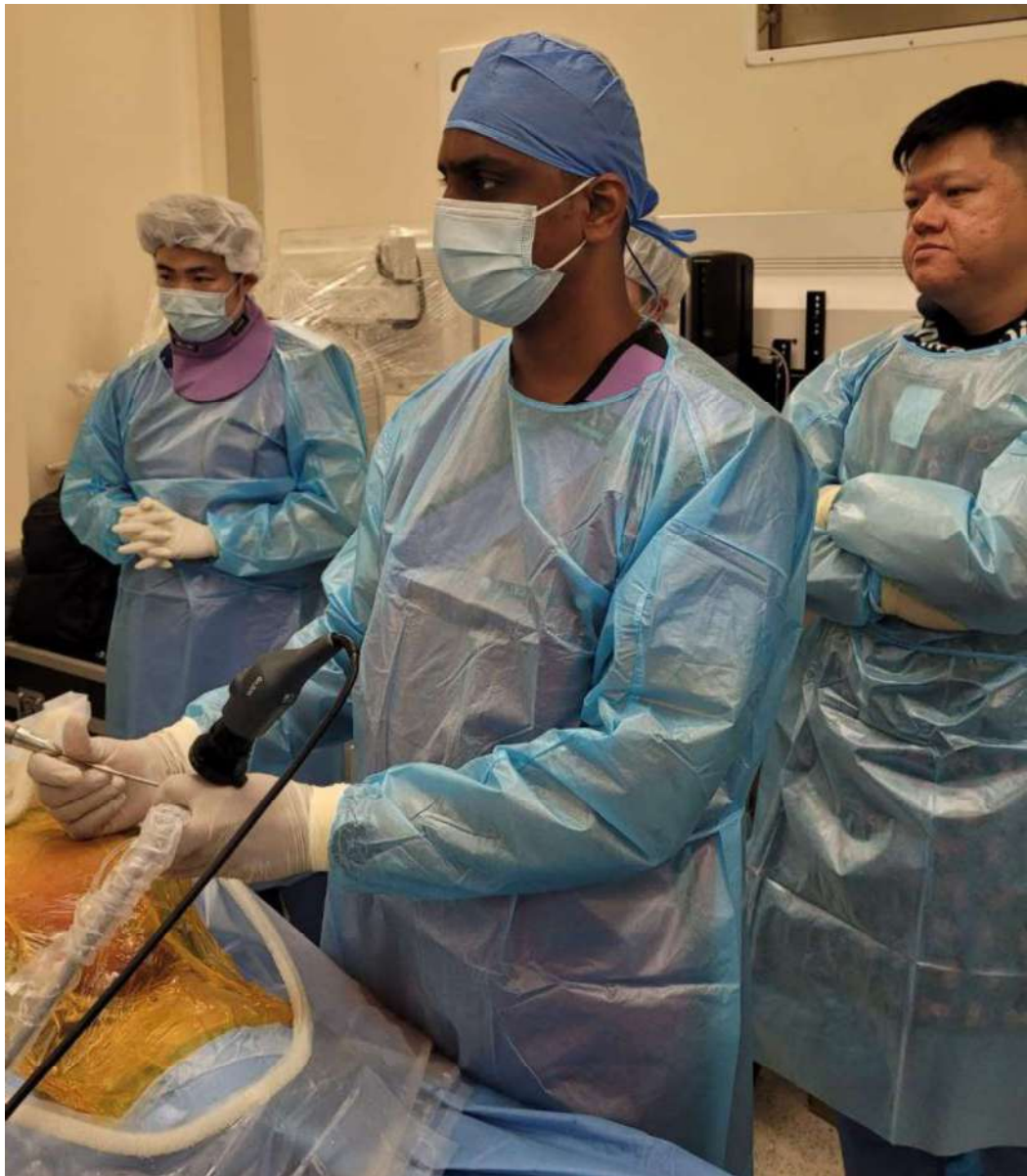
**VISITING PROFESSORSHIP: Dr. James O. Sanders MD, Frank C. Wilson** Distinguished Professor of Orthopaedic Surgery, Chair Orthopaedics, University of North Carolina, Chapel Hill, U.S.A explained about utilizing growth parameters to manage paediatric limb and spine deformities.



During the same time I had the opportunity to attend **7<sup>th</sup> APSS Annual Meeting** which was held at the Hong Kong Convention & Exhibition Centre from 13<sup>th</sup> June to 16<sup>th</sup> June.

13 & 14<sup>th</sup> June was cadaveric course held at HKU Surgical Skills Centre Eminent faculties from Asia Pacific region attended this course.

First day was regarding Endoscopic spine surgery – Uni- & Biportal. Second day was regarding the Cervical fixation, Pedicle Subtraction Osteotomy, Vertebral Column Resection.



Learning Unilateral Biportal Endoscopy with Dr. Wu Pang





Learning Pedicle Subtraction Osteotomy with Prof Kota Watanabe



At APSS Annual Meeting at Hong Kong Convention & Exhibition Centre





The Who's Who of APSS – Prof. Jianguo Zhang, Emeritus. Prof. Keith Dip Kei Luk, President Dato' Mun Keong Kwan, Past President Prof. S. Rajasekaran (Left to Right)



Man of the Moment – Prof. Jason Cheung speaking about triple attack.

**CULTURAL ACTIVITIES:** During this period there were a few important festivals like Lord Buddha's Birthday, Dragonboat festival and 27<sup>th</sup> anniversary of Hong Kong's Independence from British rule.



Dragonboat Festival at Aberdeen Promenade



Tian Tan Buddha at Lantau Island.



**ABOUT THE CITY:** Hong Kong is melting pot of human culture, touted as the “World’s most unaffordable city”. City is very organised, clean and well-maintained.



Hong Kong Skyline from Mt. Austin (“The Peak”)



At Hong Kong Disneyland at Lantau Island, at Stanley beach during Dragonboat festival and at Observation deck at International Commercial centre. (108-storey building)





In the end, I would like to thank the fellowship committee for considering my application, faculty at HKU and other support staff, APSS secretariat Kaelyn and Jennifer for co-ordinating the process, my family for having my back. This is not only an opportunity to hone's one surgical skills but also to create life-long rapport with the mentors, make friends, learn new culture and take significant strides in one's career. Thus, I encourage all young spine surgeons to become members and get involved! (Testimonial)