



Asia Pacific Spine Society (APSS)

(Spine Section of APOA)

APSS MEDTRONIC FELLOWSHIP REPORT

Duration – 1st May 2024 to 31st July 2024

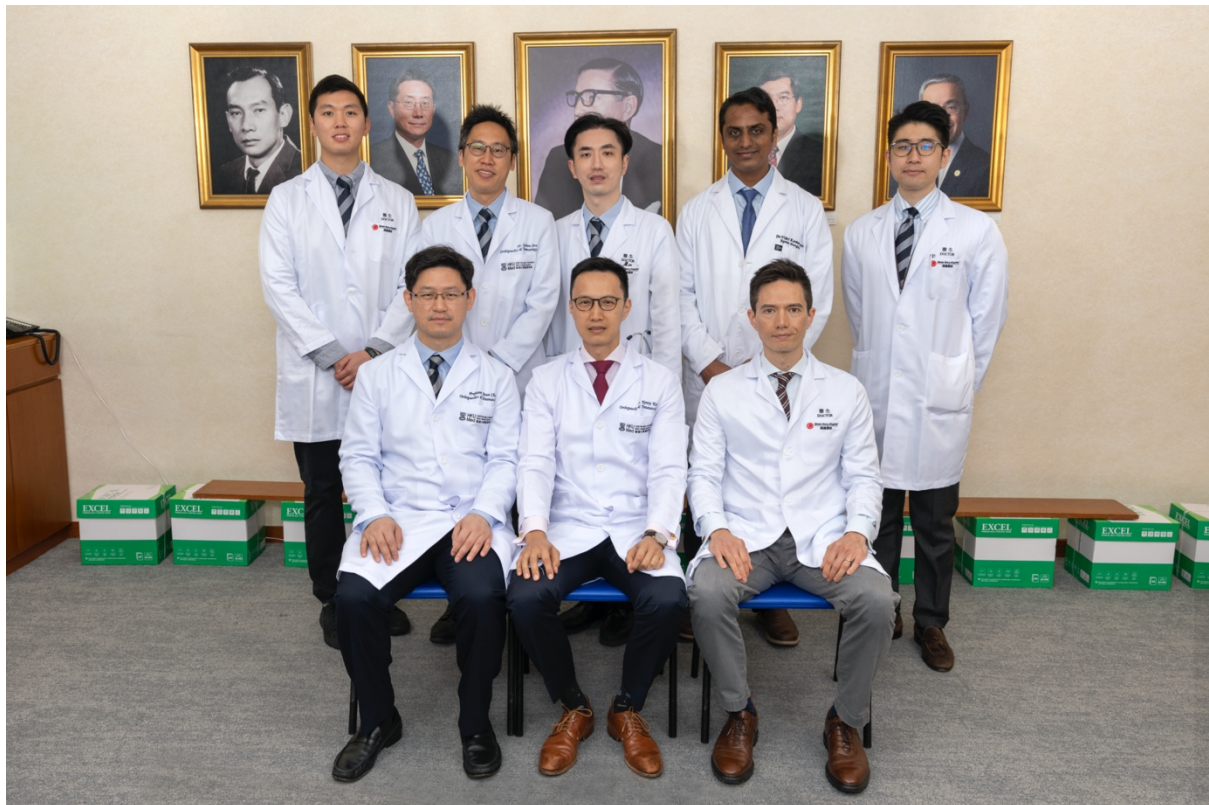
Fellow: Dr. Vijay Kumar Loya,
MBBS, MS, DNB, FNB Spine surgery,
Hyderabad, India.

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



The Duchess of Kent Children's Hospital

Prof. Jason Cheung, Department Chairperson, Associate Prof. Kenny Kwan, Division Chief of Spine Surgery and Associate Professor Dr. Paul A. Koljenen were the main **spine surgeons**. Department also included other associate consultants, fellows, residents, and research staff.

My proposed programme was:

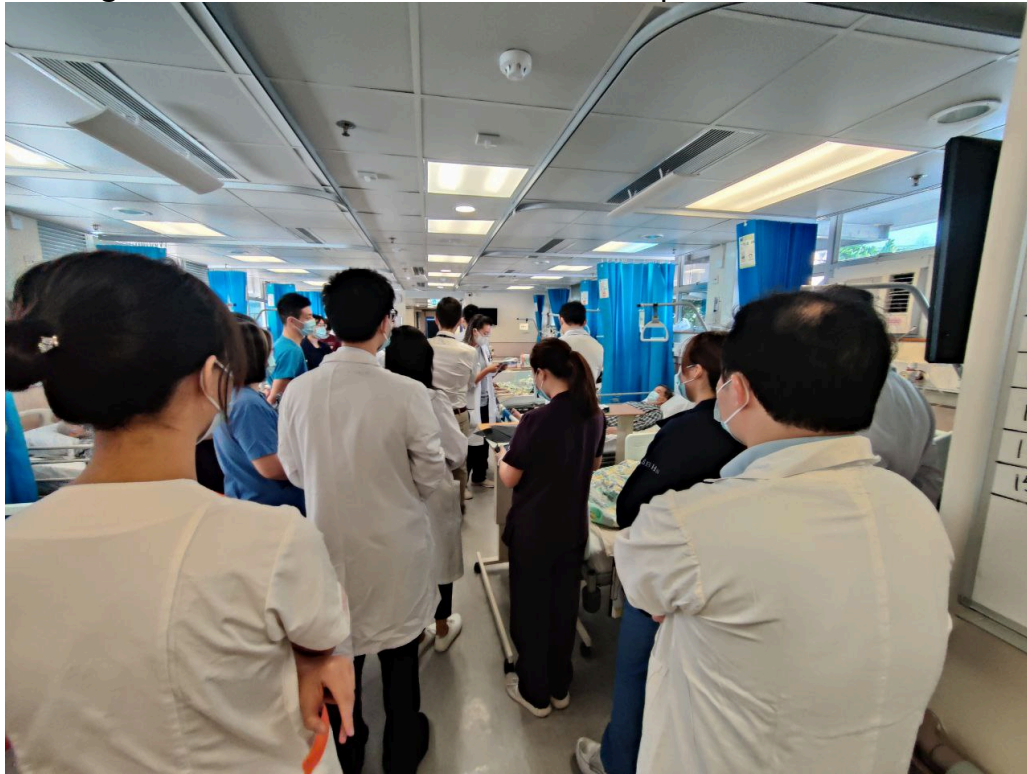
	Monday	Tuesday	Wednesday	Thursday	Friday
AM	9:00 am Scoliosis Clinic at Outpatient Department, DKCH	Observation in surgical sessions at 1/F, Main Building, DKCH	8:30 am Ward Round at Ward 1/2, DKCH 10:30 am Clinical Conference at Lecture Theatre, 5/F, Professorial Block, QMH	8:30 am Observation in surgical sessions at 1/F, Main Building, DKCH	8:30 am Ward Round at Ward K13, QMH
PM	Observation in surgical sessions at Block F4, QMH	Observation in surgical sessions at 1/F, Main Building, DKCH	2:00 pm Adult Spine Clinic at Outpatient Department, DKCH	Observation in surgical sessions at 1/F, Main Building, DKCH	1:00 pm Pre-operative Case Discussion Meeting at Hodgson Library, 5/F, Professorial Block, QMH 2:00 pm General Spine Clinic at Block S7, QMH

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.

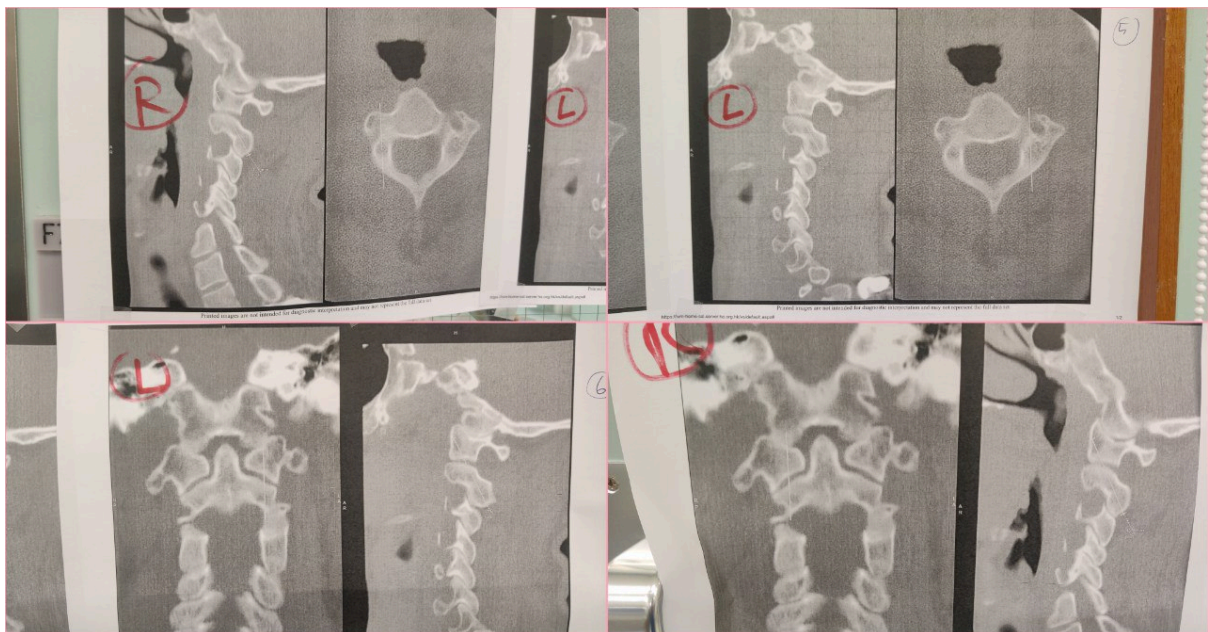
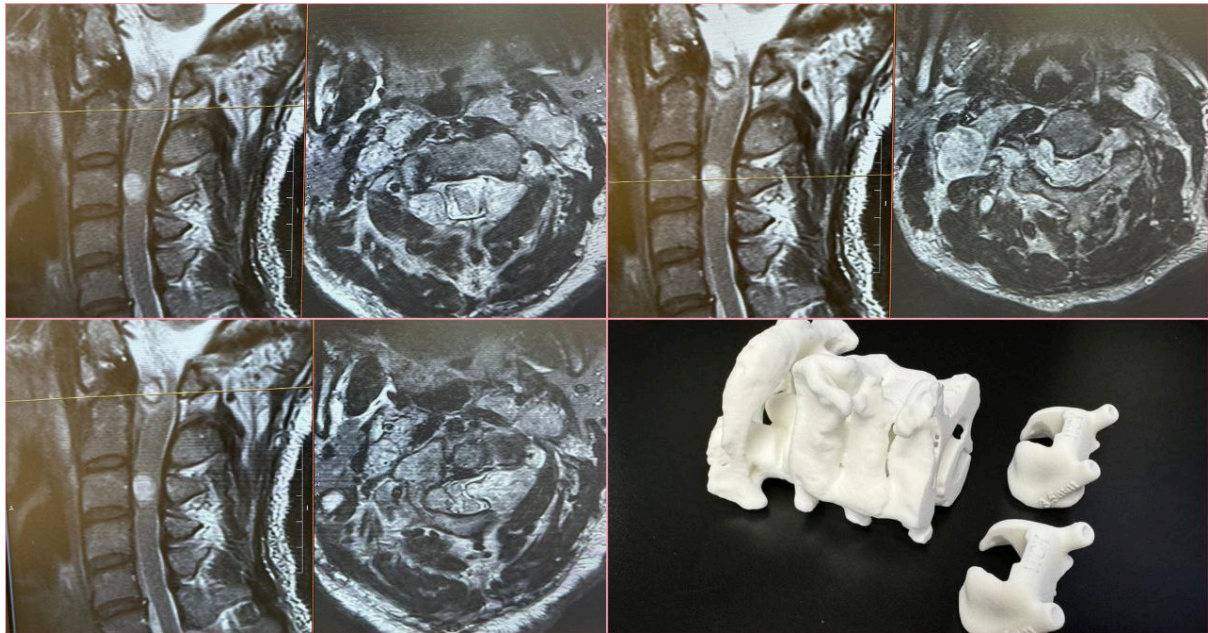
Rounds on Wednesday in DKCH and **Grand Rounds** in QMH on Friday were not just an opportunity to understand patient progress but also were occasion to learn spine academics and inter-disciplinary collaboration with nursing staff, allied health, research team, prosthetist, and orthotist.



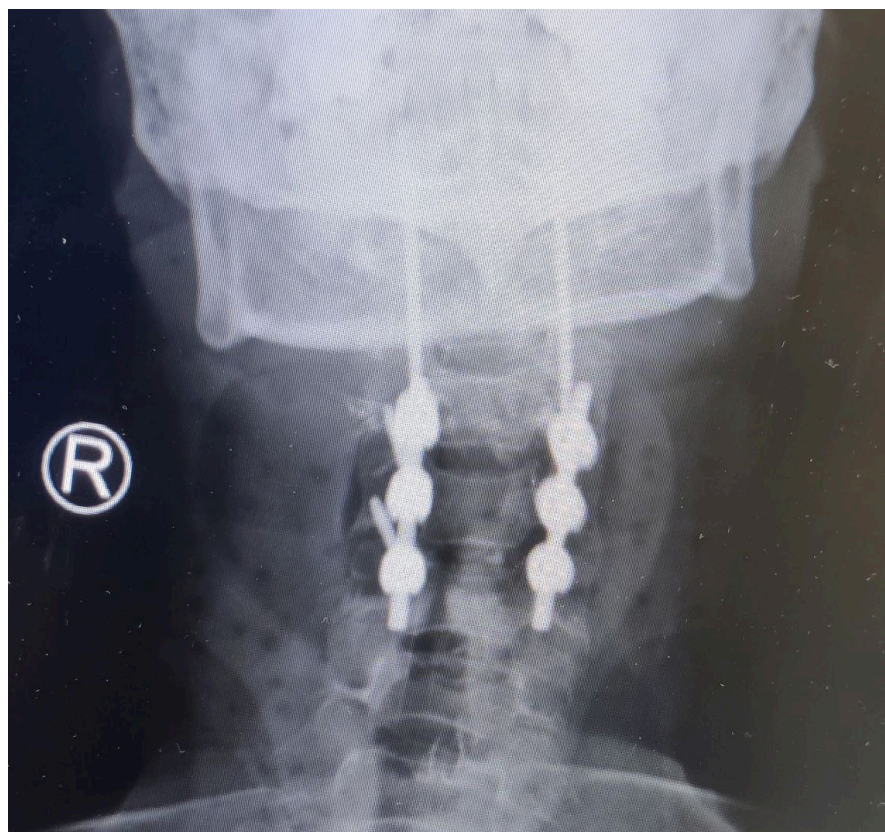
Wednesday Clinical Conference: is an inter-division meeting of all divisions of Dept. of Orthopaedics & Traumatology, which includes interesting case discussion, clinical audit, visiting guest lectures among others.



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.

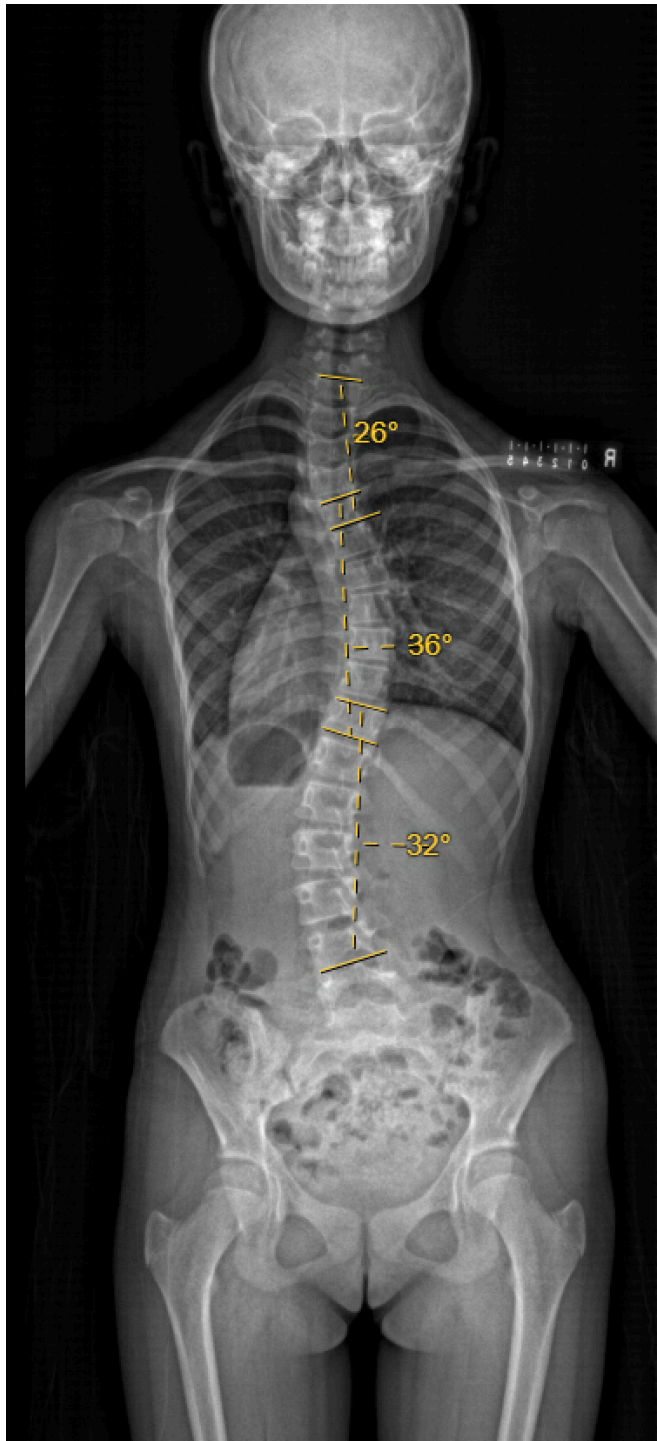


C1-2 Transarticular screw with C3-4 lateral mass screw fixation was done, Laminectomy of C1, C3 & C4 was done and tumour was well-circumscribed and was removed by neurosurgical team after intentional durotomy.

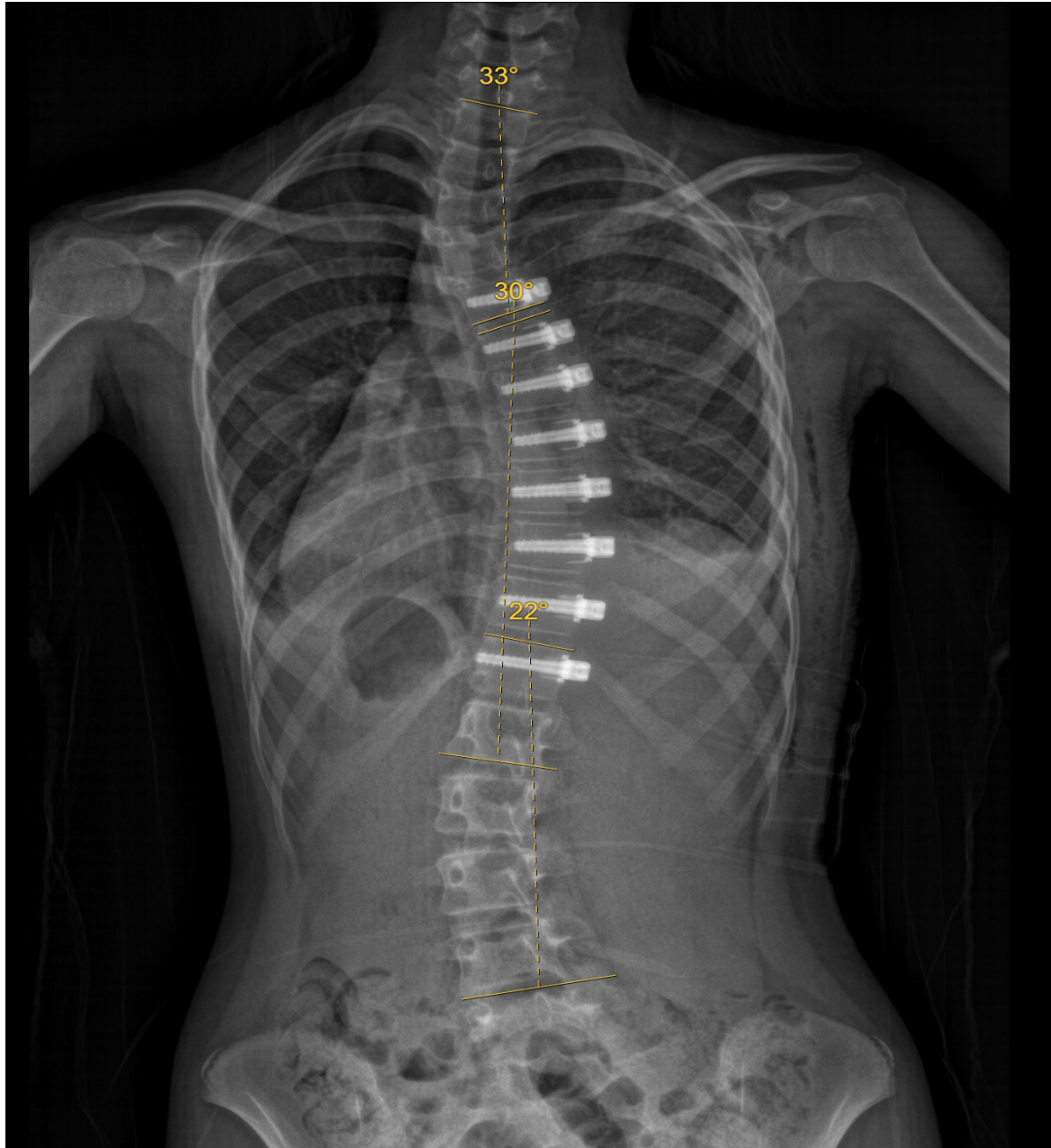


Interesting Case #2:

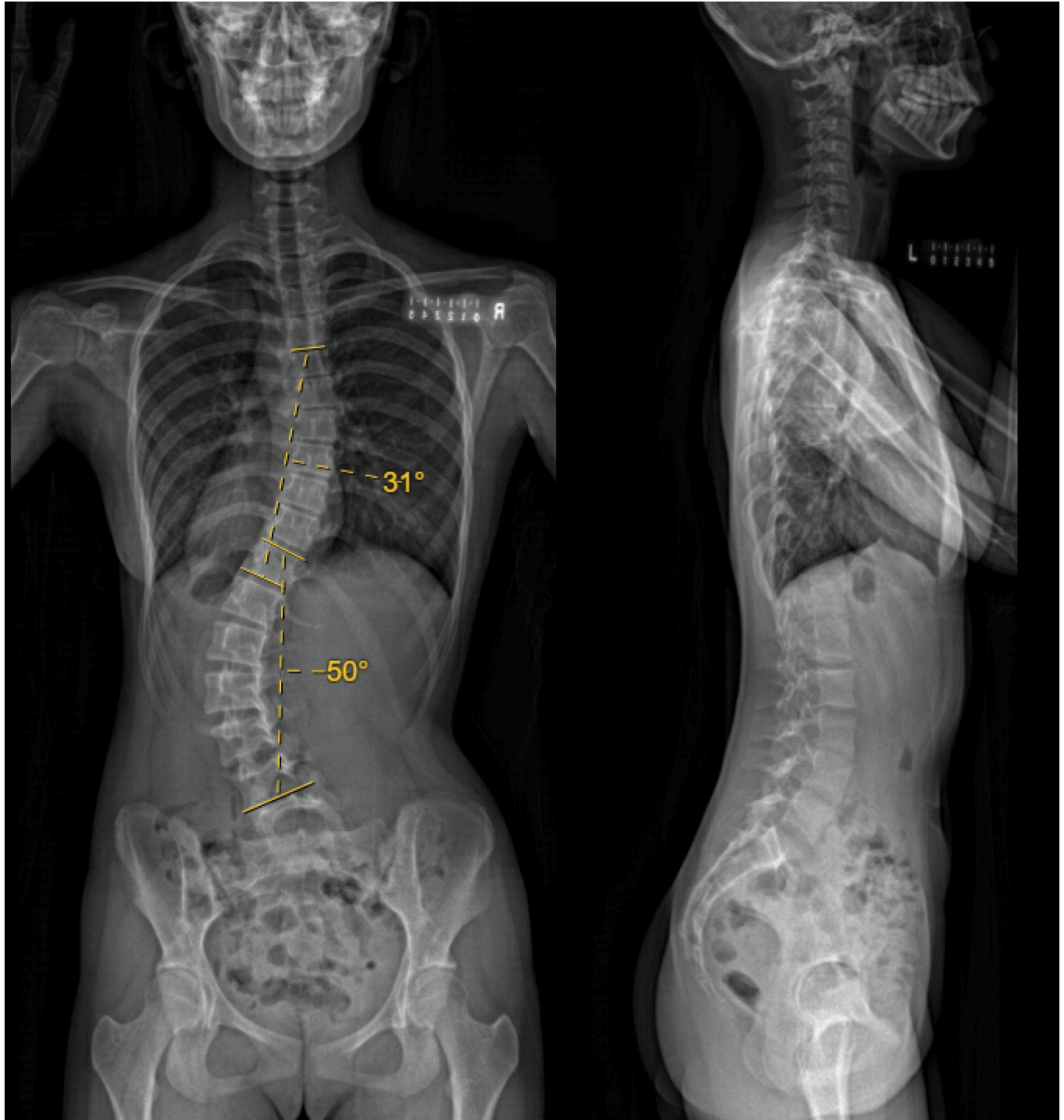
11-year-old, Premenarchal girl with Risser 0, Sanders 4, DRU 7/5, cobb's 38, progressing after bracing, Lenke 1AN, Vertebral body tethering was done T5-12. Post-operative Cobb was 32.



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°.

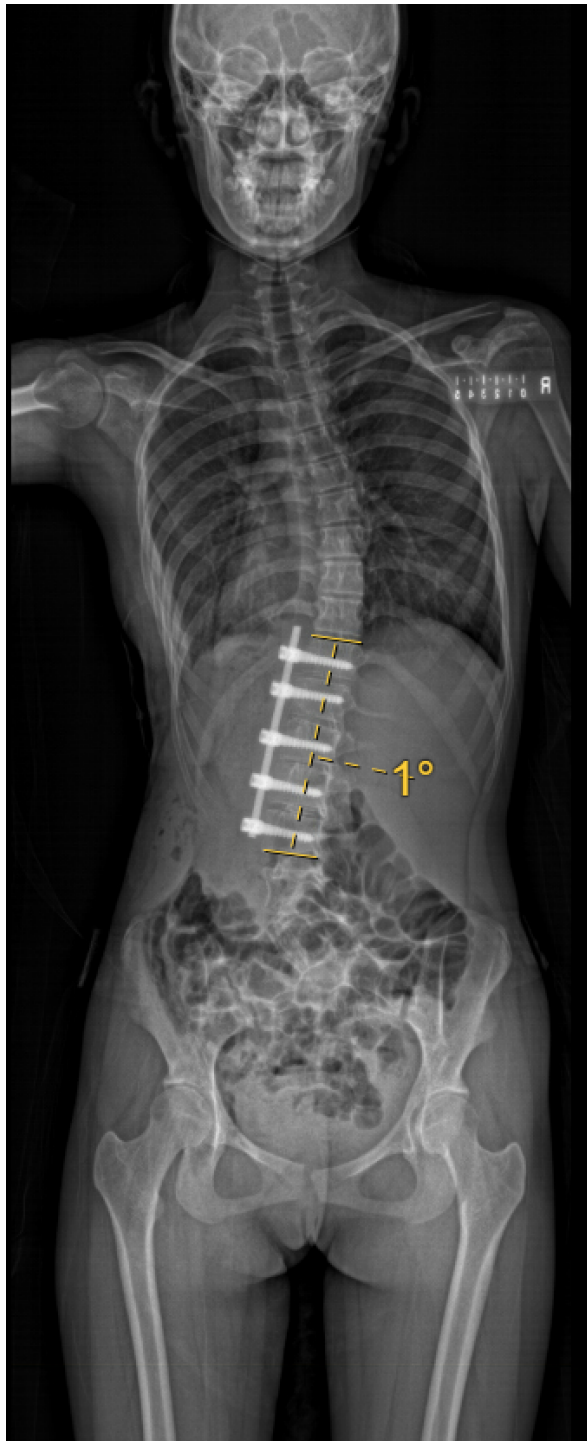


Interesting Case #3: 14-year-old Female, Post-menarchal, Risser 3, R9, U6 Lenke 5C curve with Cobb's angle 50, Posteriorly would have needed at least T10-L4 fusion, to preserve a lumbar motion segment anterior spinal fusion from T11-L3 was done.

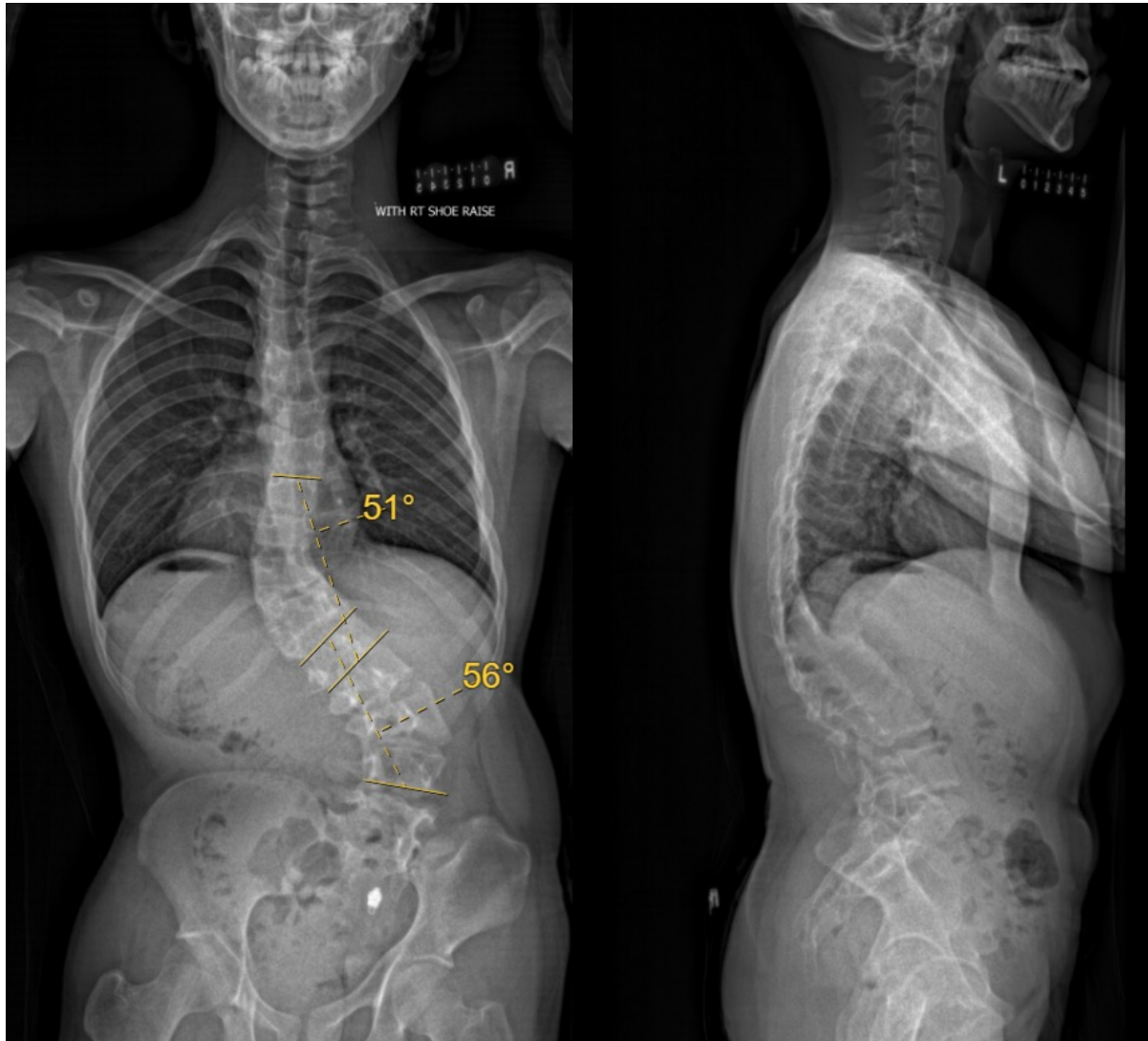


Patient in lateral position, bloodless dissection was done and “hills and valleys” exposed. Part of 10th rib was excised, meticulous disc preparation was done, Anterior longitudinal ligament was not released, rib was grafted and monoaxial Medtronic screws were used and fusion done. Closure done over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

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



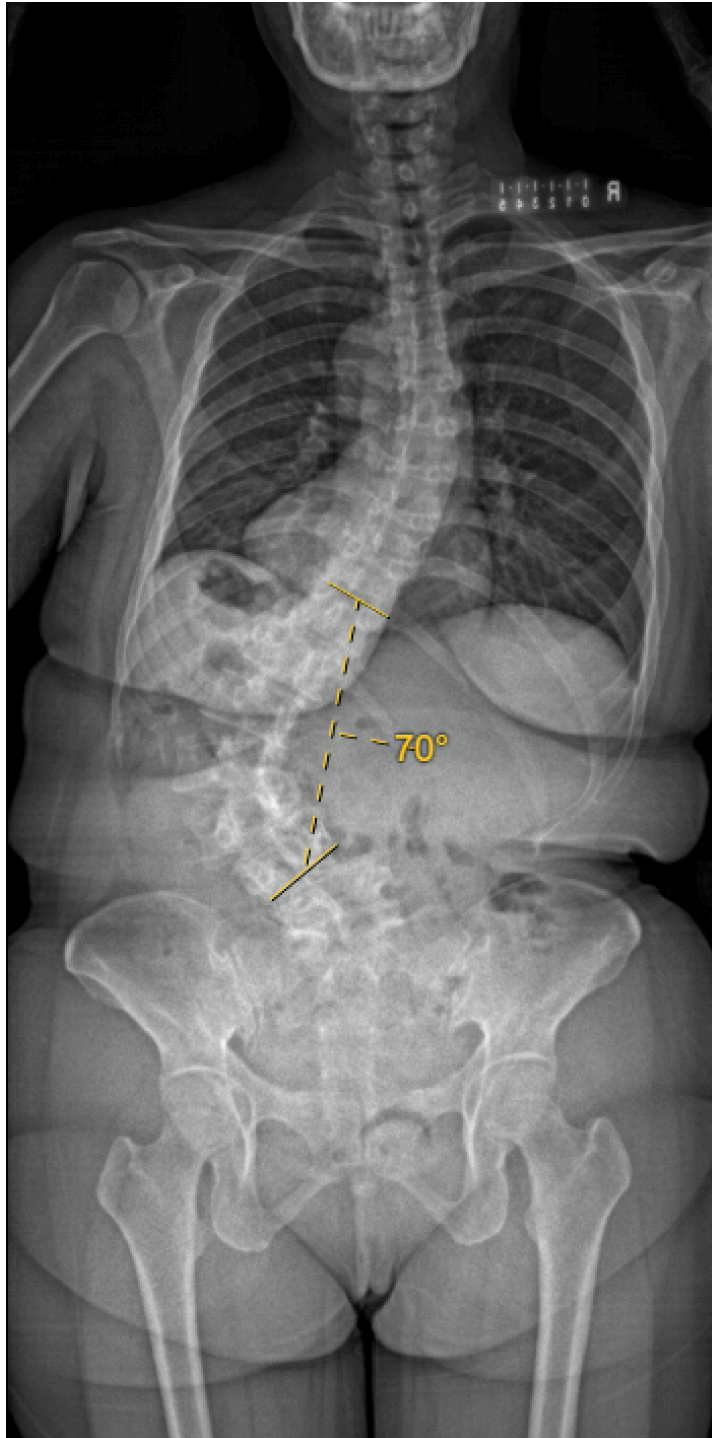
Interesting Case #4: 15-year-old male with Tethered cord syndrome with fibrolipoma, associated acetabular dysplasia, with right club foot and T12 hemivertebra. Laminectomy and detethering done at 9 months of age & in January 2024. Presented with curve progression with no neurodeficits.



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.



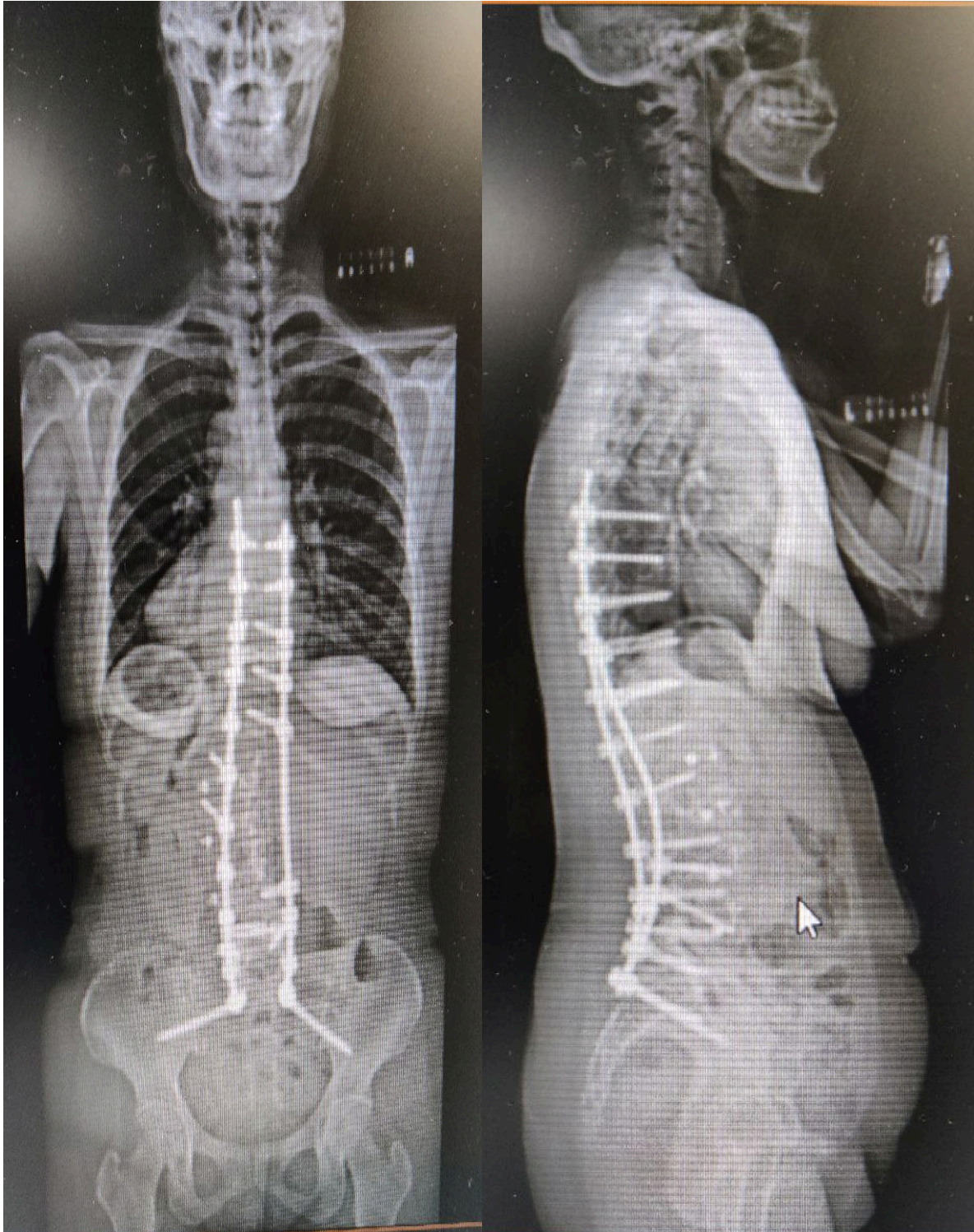
Interesting Case #5: 52-year-old lady, a case of neglected AIS presented with mechanical back pain with pain radiating to left buttock and posterolateral thigh and calf. There was trunk shift to left clinically but no neurodeficits. Cobb's angle was 70° which was reduced to 45° on fulcrum bend. Sagittal 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 **7th APSS Annual Meeting** which was held at the Hong Kong Convention & Exhibition Centre from 13th June to 16th June.

13 & 14th 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 27th 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)