



Asia Pacific Spine Society (APSS)

APSS Medtronic Fellowship Report

Duration – 29th May 2025 to 19th June 2025

Fellow

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Host

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Introduction

I had the distinct privilege of undertaking the APSS Clinical Fellowship at the National University Hospital (NUH), Singapore—a transformative experience that enriched both my clinical knowledge and professional outlook in spine surgery. Under the mentorship of internationally renowned spine surgeons, I was exposed to a comprehensive range of spinal pathologies and advanced surgical techniques. NUH, as a premier academic and tertiary referral center, provided an ideal environment for learning, with its emphasis on multidisciplinary care, evidence-based practice, and cutting-edge innovation.

About the department

The Spine Department at National University Hospital (NUH) Singapore is a leading centre for comprehensive spinal care in the Asia-Pacific region. The department boasts of state-of-the-art operating theatres with cutting edge technology such as O-arm Navigation, Multimodal Intraoperative Neuromonitoring, High End Operating Microscope with Exoscope, Thoracoscope and bone scalpel.



One of the most exciting features for me was the number of faculty in the department. The department comprises of 7 permanent consultants with varying training backgrounds each focussing on their own area of expertise. I had the privilege of having in depth discussions about spinal surgery techniques with all of them during the time spent in the theatres. The senior most consultant Prof. Wong Hee Kit along with his associate consultant Dr. Jun Hao specialize in paediatric spinal deformity. Senior consultants Prof Gabriel Liu, Prof Naresh Kumar and Prof Dennis Hey specialize in complex cervical spine, metastasis and tumour and motion preserving surgery respectively. Additionally, Dr. Jonathan Tan and Dr Alex Teo specialise in neoplastic and degenerative pathologies.

Proposed program

After the initial introductions, I was given a schedule by Prof Liu taking my interests into consideration. I was placed in the operating theatres everyday so as to maximize my time in learning techniques that each consultant specialized in. In the beginning of my fellowship, I was given reading material comprising published papers by the department faculty which enhanced my understanding of the concepts and the techniques.

	Mon	Tue	Wed	Thu	Fri	Sat/Sun
AM	OT - Prof Wong Hee Kit	OT - Prof Wong Hee Kit	OT – Gabriel Liu/ Joseph Thambiah	Spine Round	OT – Naresh Kumar/ Dennis Hey	E- cases (if any)
PM				OT – Naresh Kumar/ Gabriel Liu		

I had the privilege of attending a good variety of surgeries covering all major pathologies including trauma, paediatric deformity, cervical spine including craniovertebral junction, degenerative spine, endoscopic surgery, revision surgery and spinal injections. My logbook for the fellowship is as follows

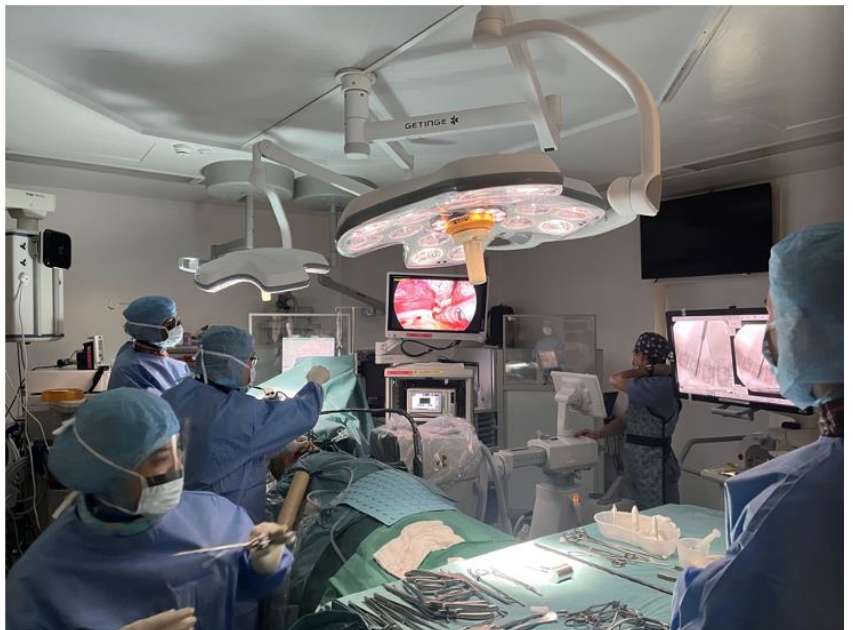
S No.	Date	Name	Age/Gender	Diagnosis	Surgery	Surgeon	Role
1	29/05/24	DTTG	20/M	Scheurmann Kyphosis	T4-L3	LL	O
2	2/06/25	KAH	11/F	Adolescent idiopathic scoliosis Lenke 1B	T7-T12 anterior tethering	WHK	O
3	02/06/25	KFK	73/M	LCS with instability L4-5	TLIF L4-5	WHK	O
4	02/06/25	TS	50/M	L2 AO typ4 burst fracture	MIS T11 – L4 posterior instrumentation with L1-L3 fusion and B/L pediculectomy and direct decompression	GL	O
5	03/06/25	BCCL	17/M	Decompensation d/t adding on in a previously intervened anterior fusion D12-L4 in Lenke 6 AIS	T3-L5 posterior instrumentation and fusion with L2 asymmetric PSO	WHK	O
6	04/06/25	MRBS	14/M	Lenke 1A Adolescent idiopathic scoliosis	T6-L3 Posterior instrumentation and fusion	JT	O

7	06/06/25	KLI	75/F	Degenerative scoliosis with multilevel LCS	L1- Pelvis posterior instrumentation with three level TLIF	DH	O
8	08/06/25	WHL	74/M	Type 2 Odontoid fracture with C3-4 instability in DISH	C0-C5 Posterior instrumentation, decompression at C1 and fusion	GL	O
9	09/06/25	LCCX	12/F	Lenke 3 C AIS	Thoracic and Lumbar vertebral body tethering	WHK	O
10	10/06/25	LZY	12/F	Lenke 1 A AIS	Thoracic vertebral body tethering	WHK	O
11	12/06/25	CWY	80/F	DDD with radiculopathy	Epidural injection with facetal block	NK	O
12	12/06/25	WHX	80/F	Degen cervical myelopathy	ACDF C5-C6; C6-C7	GL	O
13	13/06/25	CLC	14/F	Lenke 6 AIS	T4-L4 posterior instrumentation and fusion	NK	O
14	16/06/25	DYW	48/F	LCS	L4-L5 Endoscopic TLIF	DH	O

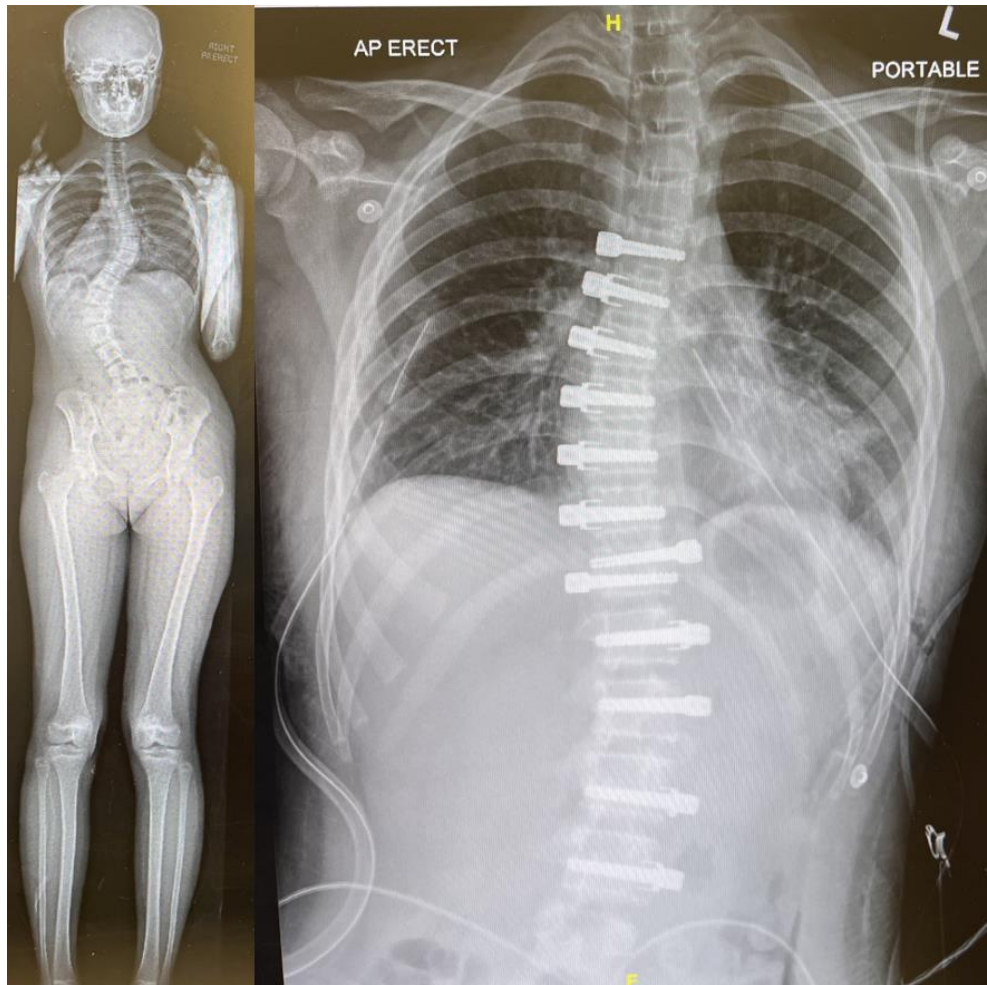
New Techniques

Thoracoscopic vertebral body tethering

Being trained in deformity surgery, I have an inclination towards learning newer techniques in paediatric deformity surgery. It was a privilege to observe three cases of thoracoscopic vertebral body tethering performed by Prof Wong Hee Kit. While there was a limited interaction with the professor, but I gained a lot listening to him share his thoughts with two other visiting surgeons from Hong Kong. All three cases were planned meticulously in the pre-operative period, had an excellent flow intra-operatively from positioning to imaging to closure and were executed to perfection. It was particularly insightful to also witness the radiographers who had mastered the art of intra-operative imaging and showed the deformed spine with utmost skill, making the surgery look so easy.



Left image showing the placement of the ports while the right image showing the operative room set up for performing the vertebral body tethering



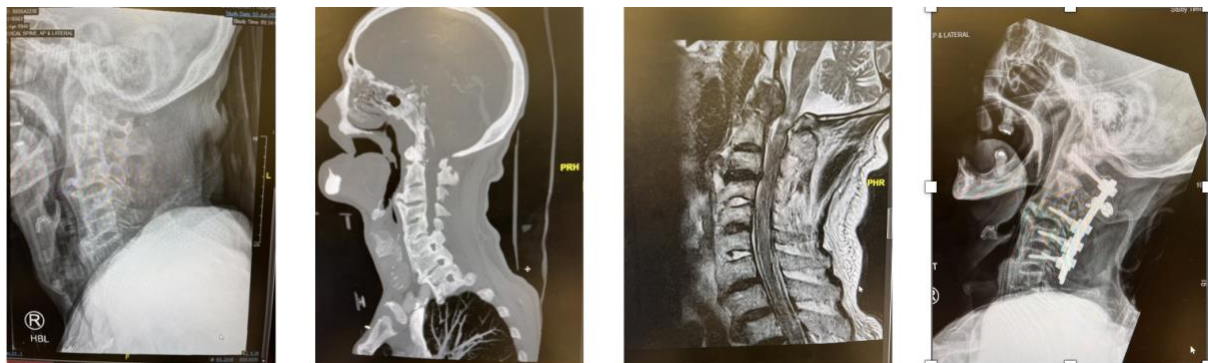
Radiographs of one of the patient who underwent a thoracic and lumbar vertebral body tether

C1-C2 surgery

Having done a substantial number of craniovertebral junction surgeries, I had some prior knowledge of C1-C2 surgeries. But seeing Prof Liu perform the near bloodless microscopic dissection at the C1-C2 joint was a wonderful learning experience. His emphasis on the need of microscopic dissection and C1-C2 meticulous articular surface preparation is something that I will definitely incorporate in my clinical practice.



Microscopic image taken during the C1-C2 dissection and instrumentation



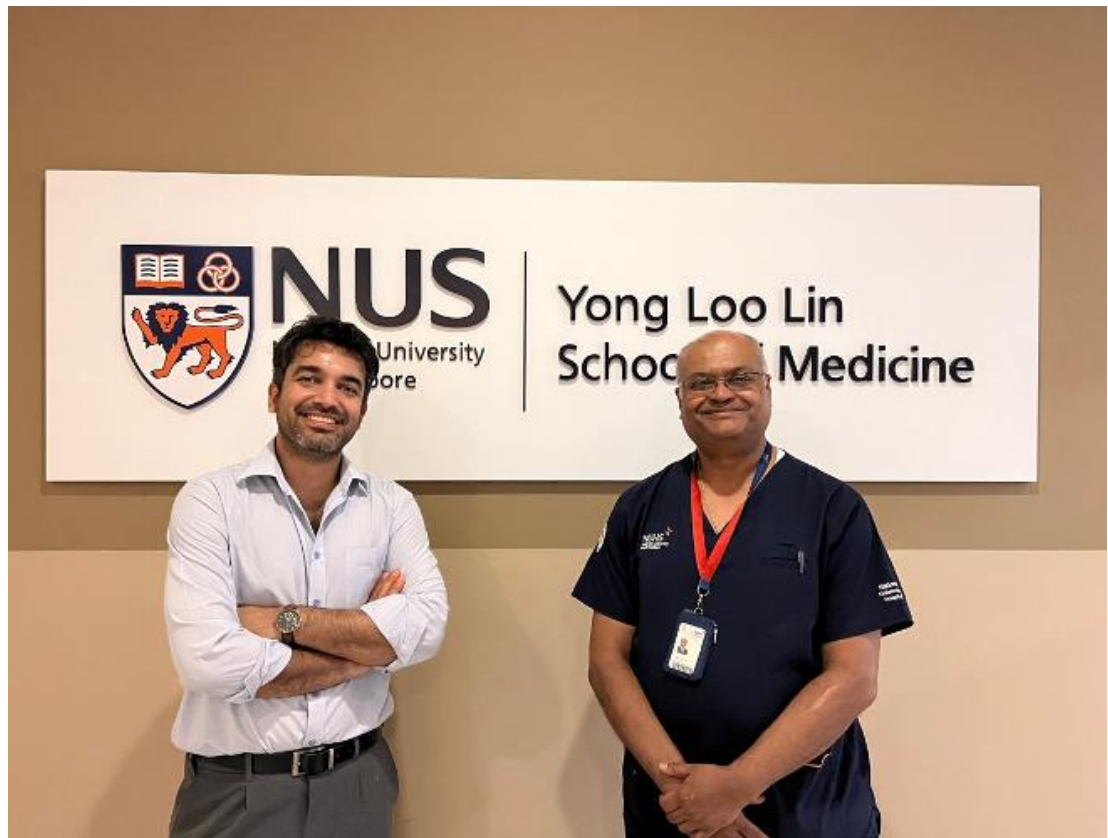
Pre-operative and post-operative images of the patient undergoing posterior instrumentation and fusion from C1-C5

Beyond operation theatres

Research

Prof Naresh Kumar took me along with him for a round to show the medical research and development facility at National University Hospital. I was fascinated to see cutting edge technology including high precision 3D printers and material research equipment. We shared our ideas on the possible uses of

newer material like nitinol for orthopaedic implants. His research and publication acumen was highly motivating and inspiring. Being an avid researcher myself, I told him about several potential collaborative research ideas between our respective institutes.



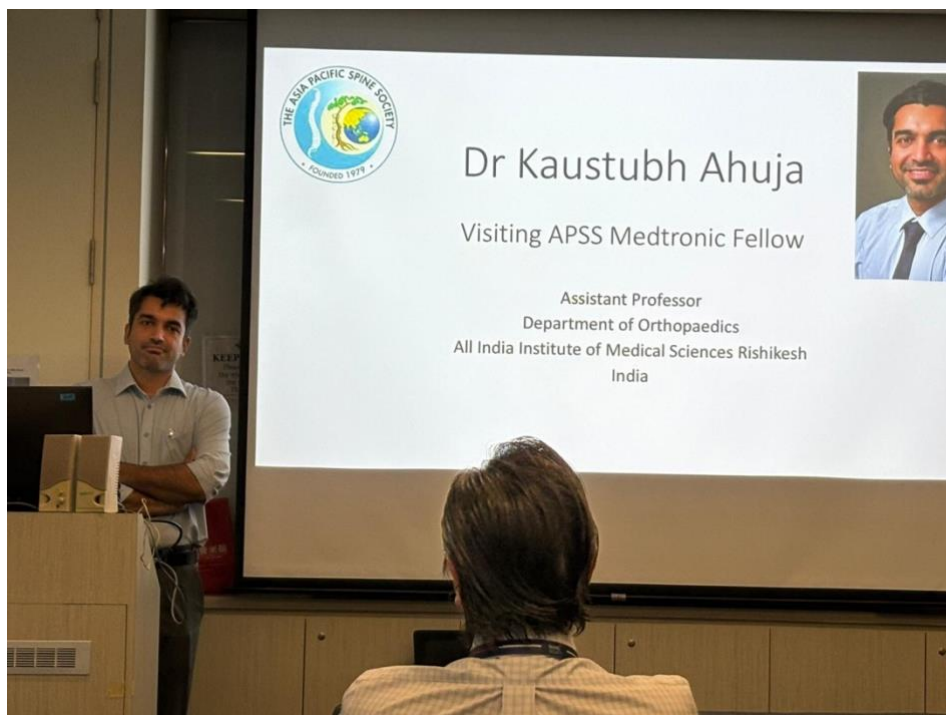
With Prof Naresh Kumar after rounds

Grand Rounds

Spine grand rounds are held every Thursday morning involving all the faculty, residents and fellows. The spine rounds were the highlight of my observership period as it included in-depth discussion of the operated cases from the previous week and the planned cases in the coming week. It is a great learning experience as all the possible surgical options for each case are discussed in detail with their pros and cons. It also included guest lectures and seminars I was lucky to attend two grand rounds and even gave a brief presentation on my career so far, surgical practice and life.



Guest lecture by the former chief medical officer, FIFA, Professor Dr. med. Jiří Dvořák in Spine grand rounds



Myself giving a presentation in spine grand rounds

Excellent hosts

I was deeply touched to see the generosity and warmth showered by Prof Liu and Prof Kumar.

Beyond the hospital, Professor Liu took the time to introduce me to Singapore's vibrant culture and local cuisine, making my visit all the more memorable. Prof Kumar took time out of his extremely busy schedule and invited me along with the other fellows to his place for a wonderful and memorable meal. Their thoughtful hospitality, and personal warmth left a lasting impression on me.



Prof Liu and myself with the beautiful Singapore skyline in the backdrop



Dinner with Prof Kumar

APSS annual conference

The fellowship ended with the 2025 APSS-APPOS combined annual congress held at Kuala Lumpur, Malaysia which was the icing on the cake. I had an opportunity to present my research work and also my fellowship experience in Singapore. The congress provided an excellent platform for exchanging new ideas, knowledge and techniques with many colleagues and senior spinal surgeons. I was awarded the fellowship certificate on the main stage by Professor Dato' Dr. Kwan Mun Keong which was the highlight of the conference. I would like to thank and congratulate the APSS for organizing yet another successful congress.



Presenting my experience as an APSS Spine fellow at the APSS-APPOS Combined Annual Congress, KL, Malaysia



Receiving the fellowship certificate from Dr. Kwan

Conclusion

My spine fellowship at the National University Hospital, Singapore, has been an incredibly rewarding and enriching experience. Over the course of three weeks, I had the opportunity to observe and learn advanced surgical techniques, participate in case discussions, and engage with a highly skilled and collaborative team. I am grateful to the faculty for their exceptional mentorship and warm hospitality, which greatly enhanced both my professional development and personal experience in Singapore. This fellowship has broadened my clinical perspective, strengthened my surgical skills, and deepened my understanding of evidence-based spine care. I am also grateful to APSS for having this wonderful fellowship program. Finally, I would like to thank my mentor Professor Pankaj Kandwal for always being a guiding light, my family for their constant support and my dogs for their unconditional love. I leave with valuable knowledge, new friendships, and a profound appreciation for the high standards of care and innovation at NUH.