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

APSS-UMMC FELLOWSHIP 2025 REPORT

Fellow: Dr. Guna Pratheep Kalanchiam,

M.S. (Ortho), FNB (Spine surgery), Global Diploma (AO Spine),

FRSS (Singapore), FESS (South Korea)

Associate Consultant- Spine Division

Department of Orthopaedic Surgery

Meenakshi Mission Hospital and Research Centre,

Madurai - Tamil Nadu, India

Host:

PROFESSOR DATO' DR. KWAN MUN KEONG

MS.Orth (UM), (ORTHOPAEDIC SURGERY) Universiti Malaya (um)

MBBS(UM), (Medicine and Surgery) Universiti Malaya (um)

Head and Senior Consultant of Spine Surgery

Department of Orthopaedic Surgery

Universiti of Malaya

Kuala Lumpur – Malaysia

Fellowship Duration: 02/12/2025 to 06/12/2025

I extend my sincere gratitude to the Asia Pacific Spine Society (APSS) for the opportunity to undertake a one-week fellowship program in spine deformity surgery. The fellowship was profoundly enriching, significantly enhancing both my clinical understanding and surgical expertise. I am deeply thankful for the privilege of learning from distinguished experts and for being part of such a well-organized and inspiring program. Beyond skill development, this overseas training provided valuable exposure to contemporary advances in spinal surgery worldwide, greatly expanding my academic outlook and professional perspective.

After my selection for the fellowship, during the VISA and documentation process, I was in constant contact with Siti Mariam, Secretary to Prof. Dato. Kwan. She was very helpful throughout my fellowship period. Once I arrived at the Kuala Lumpur airport, Universiti Malaya had arranged a cab to take me to the accommodation. The accommodation provided to me was pleasant, spacious, conveniently located, and within walking distance of the Universiti Malaya. It was also conveniently located near restaurants and stores.

The Universiti Malaya Medical Centre, located in Kuala Lumpur, Malaysia, is a leading tertiary care centre recognized for advanced medical therapies and high standards of patient care. The institution combines state-of-the-art clinical practice, a strong research environment, and a team of highly trained healthcare professionals dedicated to delivering patient-focused care.

Prof. Kwan serves as the Senior Orthopaedic Consultant of the Spine Surgery, Department of Orthopaedic Surgery, University of Malaya, Kuala Lumpur, and was the President of the Asia Pacific Spine Society (APSS) 2023/2025. He was the Past President of the Malaysia Spine Society (MSS) 2019/21. His practice is primarily focused on spinal deformities, specifically scoliosis. He has extensive experience treating patients with scoliosis through both nonoperative and operative management. He handles an average of 300 spine cases a year, including approximately 200 scoliosis cases. Prof. Kwan is an active member of numerous international professional spine societies. He is well known internationally and in the regional spine community, where he currently serves as President of the Asia Pacific Spine Society (APSS). He is also an Active Member of the Scoliosis Research Society (SRS) and AO Spine. He has published more than 100 articles in peer-reviewed scientific journals, both international and national.

Due to his extensive academic contributions, he was appointed to several editorial boards and served as a reviewer for numerous leading journals. He has authored numerous academic books and videos on orthopaedic and spinal surgery and has contributed book chapters on spinal disorders.

Several administrative duties of Prof. Kwan:

Clinical Examiner for Spine Fellowship Training Programme (National)

Head of Spine Subspecialty Training Programme

Deputy Director of Research Dec 2021 - Dec 2022 (Dept of Orthopaedics, Faculty of Med)

Several Awards of Prof. Kwan:

- MOA research awards, namely the 'P. Balasubramaniam Award 2014 and 2015 for the best basic sciences research published papers for 2 consecutive years.
- "Subir Sengupta Award in 2017 and 2018" for the best clinical research published papers for another 2 consecutive years.
- 'Best Lecturer (Clinical) Award by the Faculty of Medicine, University of Malaya in the year 2013'
- Excellence Service Award 2005, Universiti Malaya

My Fellowship Schedule:

UNIVERSITI MALAYA

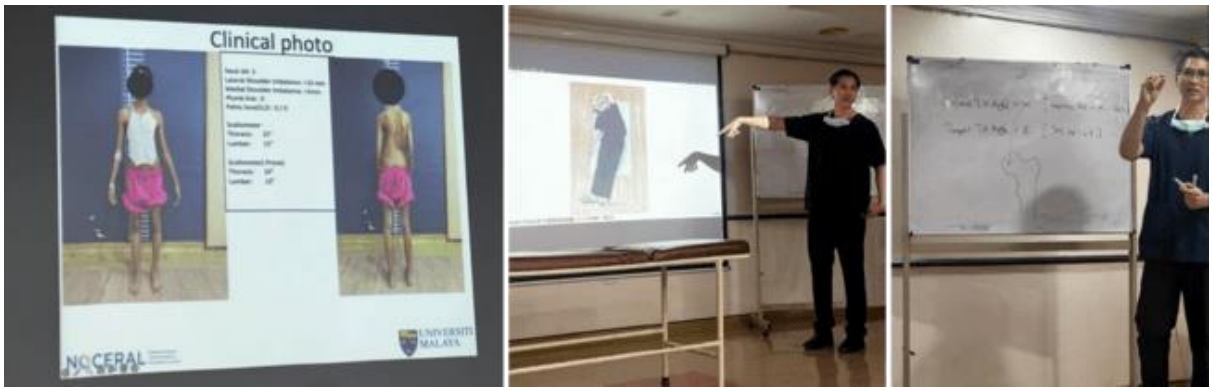
APSS-UMMC CLINICAL ATTACHMENT PROGRAMME 2025
(2nd - 6th DECEMBER 2025)

	Monday (01/12)	Tuesday (02/12)	Wednesday (03/12)	Thursday (04/12)	Friday (05/12)	Saturday (06/12)	Sunday (07/12)
0700-0800	ARRIVAL	Spine Clinical Teaching					DEPARTURE
0800-0900		OT	Preop Planning + Discussions	Spine Clinical Teaching	Long Case Teaching	OT	
0900-1000			OT	OT	*APSS-UMMC Clinical Fellow Lecture Presentation*		
1000-1130					Scoliosis Clinic		
1130-1230					BioApps Brace Visit		
1230-1300					Visitation to UM UMMC/ NOCERAL		
1300-1400		Lunch	Lunch	Lunch	Lunch	Lunch	
1400-1500		Social Programme at Kuala Selangor	OT	OT	Preop Planning + Discussions	OT	
1500-1600							
1600-1700							
1700-1800				Fellowship Dinner	Free & Easy		
1800-1900							
1900-2000							
2000-2100							
2100-2200							

DAY 1 (02.12.25):

Our fellowship started with a spine teaching session led by Prof. Kwan Mun Keong, Prof. Chris Chan Yin Wei, and the Spine team (Dr. Chiu Chee Kidd and Dr. Saturveithan Chandirasegaran). Prof. Kwan delivered an in-depth teaching session on the importance of shoulder balance in the surgical management of Adolescent Idiopathic Scoliosis, emphasizing that postoperative

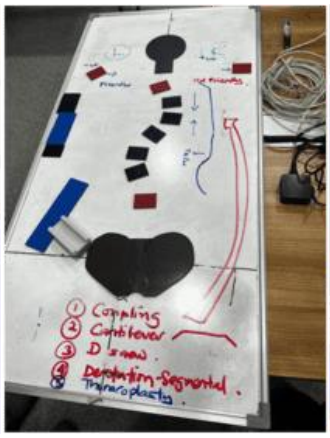
shoulder asymmetry can significantly affect functional outcomes and patient satisfaction. He explained that supine side-bending radiographs are a crucial tool for evaluating curve flexibility and preoperative planning. Using these radiographs, calculating the alpha and beta angles reliably determined the optimal tilt and level of the upper instrumented vertebra. Prof. Kwan noted that selecting the appropriate upper instrumented vertebra based on these parameters is pivotal to achieving balanced shoulders and harmonious coronal alignment after surgery. Through case examples and radiographic correlations, he demonstrated that meticulous preoperative analysis directly translates into improved aesthetic and biomechanical outcomes in patients with AIS.

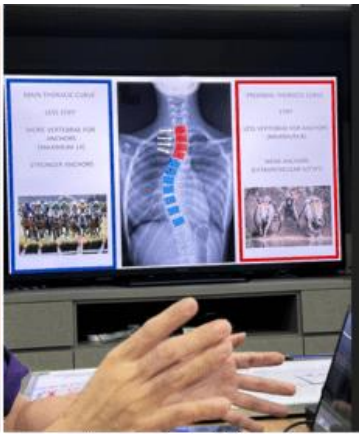


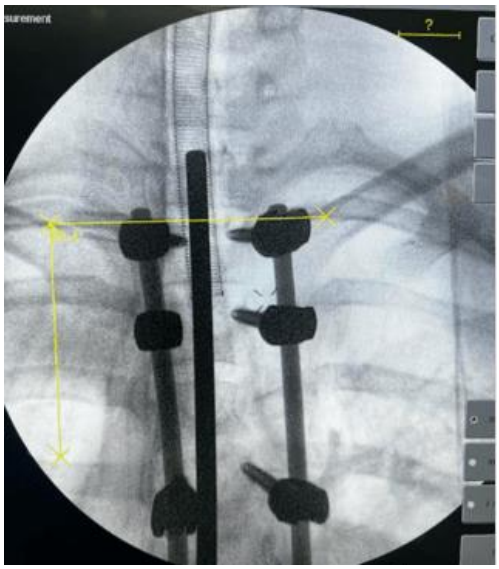
DAY 2 (03.12.25):

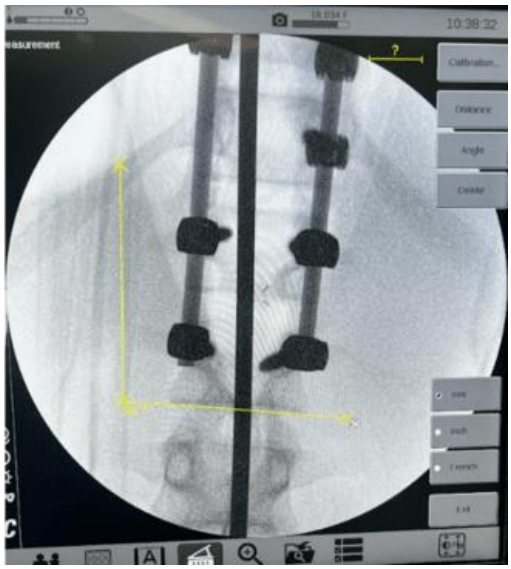
My visit to the operating room for Adolescent Idiopathic Scoliosis (AIS) was an enriching academic experience. Under the guidance of Prof. Chris, I observed the meticulous planning and execution of deformity correction surgery. He explained each intraoperative step with clarity, from exposure to final rod placement. Special emphasis was placed on the nuances of pedicle screw fixation in scoliotic spines, particularly the altered anatomy and rotational deformity. The importance of accurate entry points and trajectory to avoid cortical breach was thoughtfully demonstrated. Prof. Chris highlighted strategies to optimize screw purchase in dysplastic pedicles. Another key learning point was maintaining a clean surgical field with minimal blood loss to enhance visualization and safety. Techniques for hemostasis and systematic workflow were discussed in detail. He also emphasized gentle, appropriate soft-tissue handling to reduce postoperative pain and complications. Overall, the session deepened my understanding of both the technical precision and disciplined surgical principles required in AIS correction surgery. This was followed by lectures by Prof. Kwan on calculating intraoperative UIV and LIV angle, various strategies to reduce the rib hump in AIS and on the

importance of controlling the Proximal Thoracic Curve to achieve shoulder balancing in these patients. Prof. Kwan also elaborated on assessing the stiffness of the structural and compensatory curves in each Lenke type and deciding management accordingly.



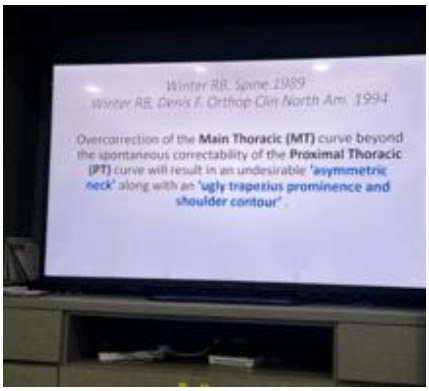


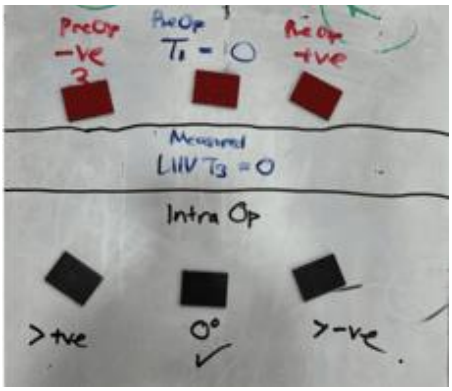


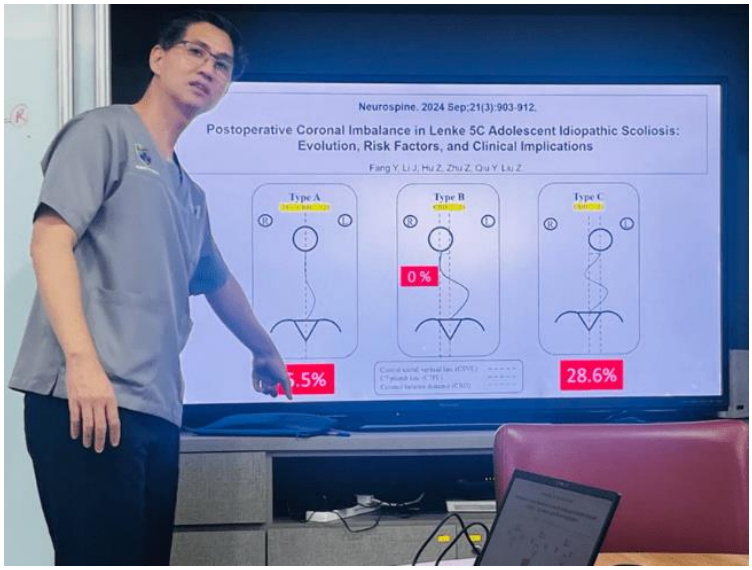


DAY 3 (04.12.25):

The following day in the operating theatre, we had the privilege of learning from Kwan. He focused extensively on intraoperative assessment of coronal balance during correction of Adolescent Idiopathic Scoliosis. Particular emphasis was placed on shoulder balancing and its impact on overall cosmetic and functional outcomes. He demonstrated the cross-bar technique as a practical method to objectively assess shoulder symmetry on the table. The discussion highlighted how small intraoperative adjustments can significantly influence postoperative balance. Prof. Kwan stressed the critical importance of adequate proximal curve correction in achieving optimal shoulder alignment. Strategies involving selective compression and distraction of the curves were discussed in detail. The biomechanics behind these manoeuvres and appropriate rod contouring were clearly correlated with real-time intraoperative findings. Overall, the session reinforced the importance of thoughtful, balanced correction rather than simply achieving maximal radiographic deformity correction.







By the evening, the entire spine team gathered for a fellowship dinner. It was a wonderful opportunity to interact with the faculty in a relaxed and informal setting. The atmosphere was warm, collegial, and filled with engaging conversations. I had the privilege of speaking with eminent professors about spine surgery, research, and evolving techniques. Beyond academics, we shared experiences about training pathways and professional growth. The discussions extended to global perspectives in deformity correction and innovation in surgical technology. There were also instances of laughter, personal anecdotes, and meaningful mentorship moments. The evening strengthened not only academic connections but also lasting friendships. It was inspiring to see the humility and approachability of such accomplished surgeons. Overall, the dinner was a memorable conclusion to an intellectually enriching day.

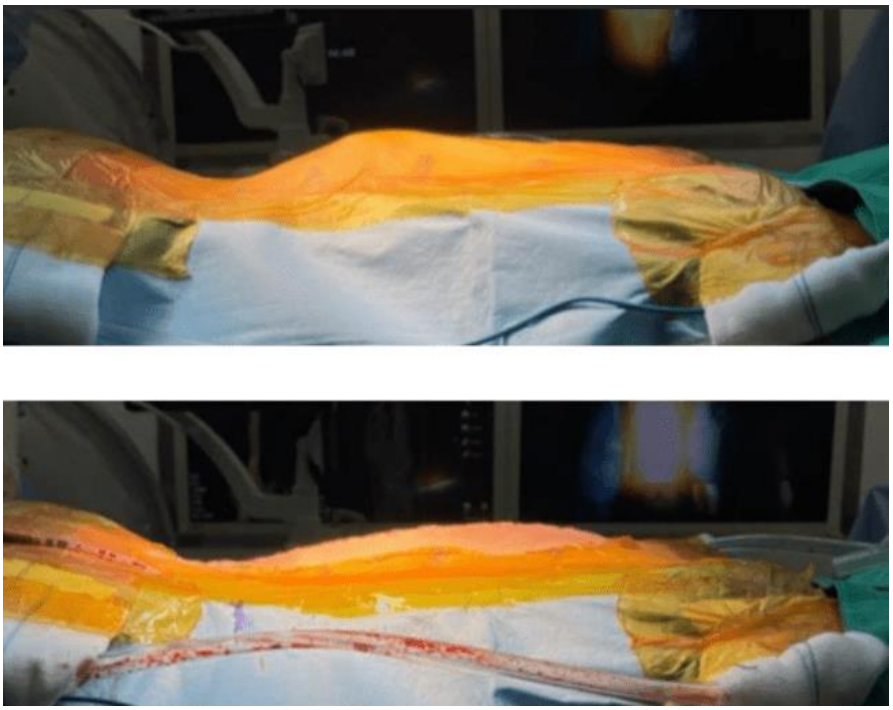
DAY 4 (05.12.25):

It was a teaching session for the undergraduate students, and we were given the opportunity to present our discussion on Scoliosis. I presented a talk on “Adult Spinal Deformity” and its distinction from paediatric deformities with regard to clinical presentation and management. The students were highly interactive and also presented a Case of Paediatric Scoliosis to Prof. Kwan and Prof. Chris.

SCOLIOSIS CLINIC

Later we attended the Scoliosis Outpatient Clinic, where Prof. Dato' Kwan and Prof. Chris provided invaluable instruction on the key clinical principles underpinning the comprehensive management of scoliosis. The clinic offered exposure to a wide spectrum of Adolescent Idiopathic Scoliosis cases, including patients managed surgically as well as those undergoing

conservative treatment with bracing, all of whom presented to the outpatient department for regular follow-up. Through these real-world clinical encounters, the professors emphasized decision-making criteria, clearly outlining indications for observation, bracing, and surgical intervention. The natural history and progression patterns of different curve types were carefully demonstrated through longitudinal clinical and radiological follow-up, reinforcing the importance of timely, individualized management. Additionally, several complex and interesting cases, including pre- and post-operative pictures, were discussed in depth during the OPD, fostering interactive learning and a deeper understanding of nuanced clinical scenarios in scoliosis care.



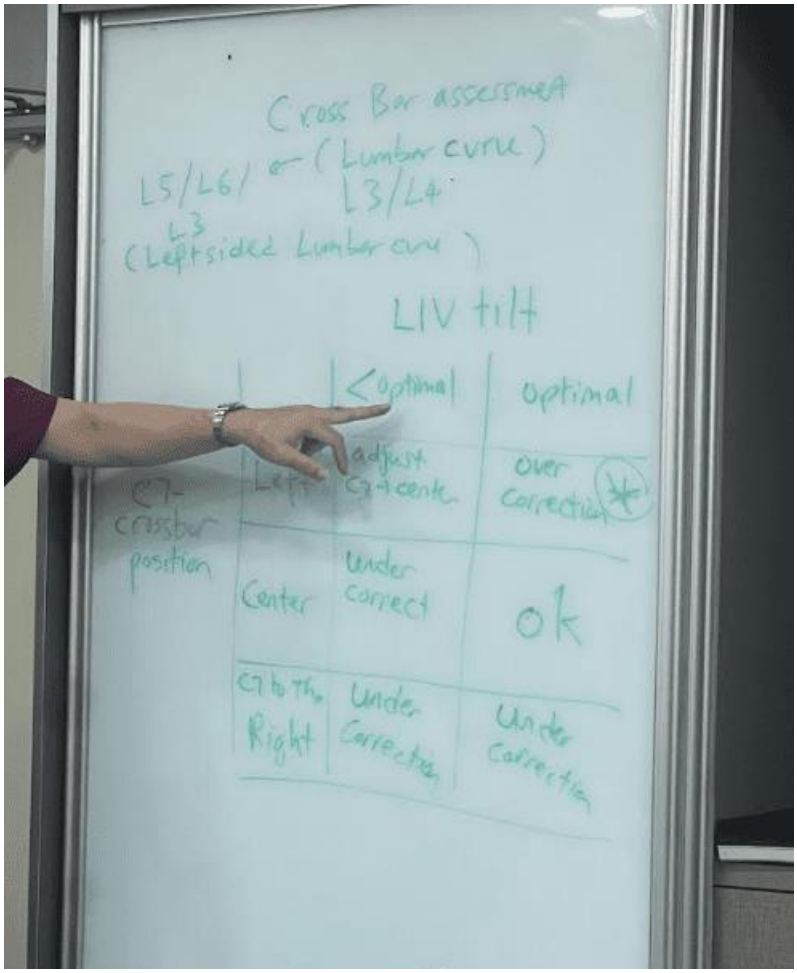
Pre- and post-operative pictures of a patient operated for Kyphosis correction

Following our outpatient scoliosis clinic, we stepped out for lunch with the department staff Siti Mariam and Josephine. It was a refreshing break after a busy and engaging clinic session. We enjoyed a spread of delicious native Malay dishes, rich in flavour and tradition. The combination of spices, coconut-based gravies, and aromatic rice made the meal truly memorable. Beyond the food, the conversation flowed effortlessly between clinical discussions and personal experiences. It was wonderful to share perspectives on scoliosis management across different healthcare settings. The warmth and hospitality added a special touch to the

afternoon. Such moments outside the hospital setting strengthened our camaraderie. The lunch was both culturally enriching and personally uplifting. It was a delightful blend of learning, friendship, and authentic Malay cuisine.

DAY 5 (06.12.25):

It was the final day of our visit and we observed three cases in the operating room. Prof. Chris lectures on the lowest instrumented vertebra (LIV) tilt and on managing Lenke 5 and 6 curves were particularly insightful. The discussions were clinically rich and highlighted the nuances of decision-making in deformity correction.



We were then given radiographs of patients with AIS and calculated the optimal UIV and LIV tilt angles, under the supervision of Prof. Chew. I also gained valuable insights into the challenges and potential complications associated with improper pedicle screw placement. The

professor emphasized the safety considerations of pedicle screw insertion and the role of cannulated screws in managing dysplastic pedicles, reinforcing the importance of precision and technique.

Later, we toured the historic University Hospital campus with Dr. Satur. He showed us the well-planned architecture and discussed the institution's legacy. We captured several photographs, creating memories that will remain special to us.

Before we departed, Prof Kwan, Prof Chris, and Dr Chee kindly presented us with souvenirs to take home— a thoughtful gesture that beautifully concluded a memorable and enriching visit.

CASE EXAMPLES

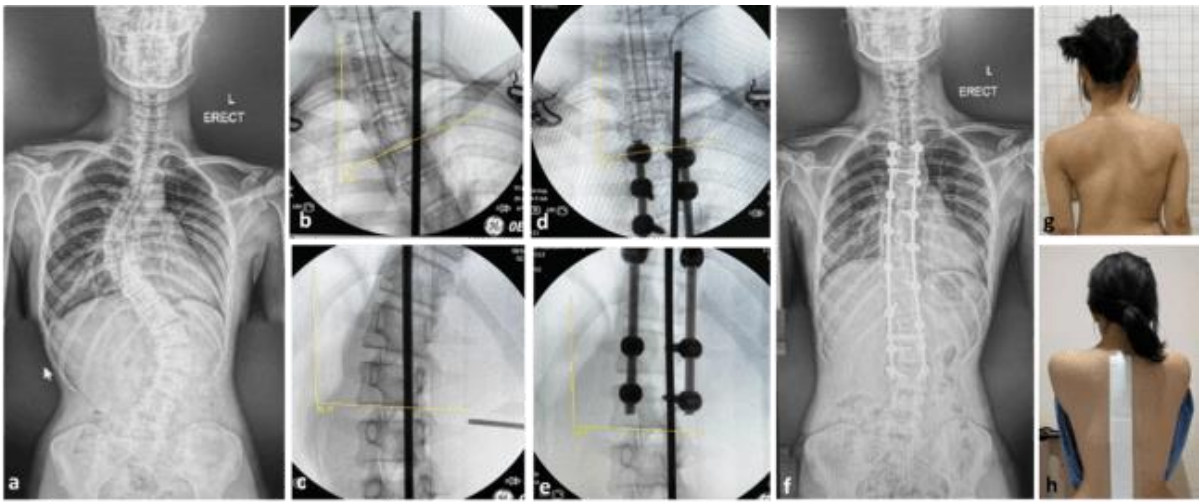


Fig 1: (a) Showing AP radiograph of 13-year-old female with AIS Lenke IA, (b-c) UIV and LIV tilt angles calculated with Cross-bar technique under General Anaesthesia, (d-e) UIV and LIV tilt angles calculated after instrumentation (f) Post-operative radiograph showing good deformity correction and shoulder balance (g-h) Comparison of Pre- and Post-operative clinical photographs

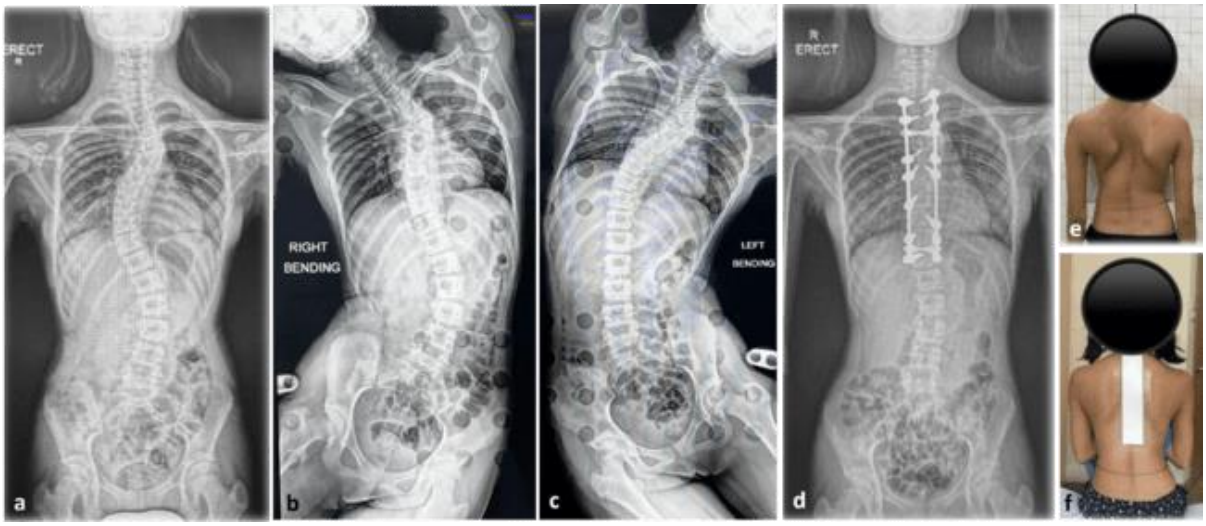


Fig 2: (a) Showing AP radiograph of 13-year-old female with Congenital Scoliosis due to T4 Hemivertebra, (b-c) Side-bending radiographs to assess the flexibility of the major and minor curves, (d) Post-operative radiograph showing T2-T12 instrumentation (e-f) Comparison of Pre- and Post-operative clinical photographs

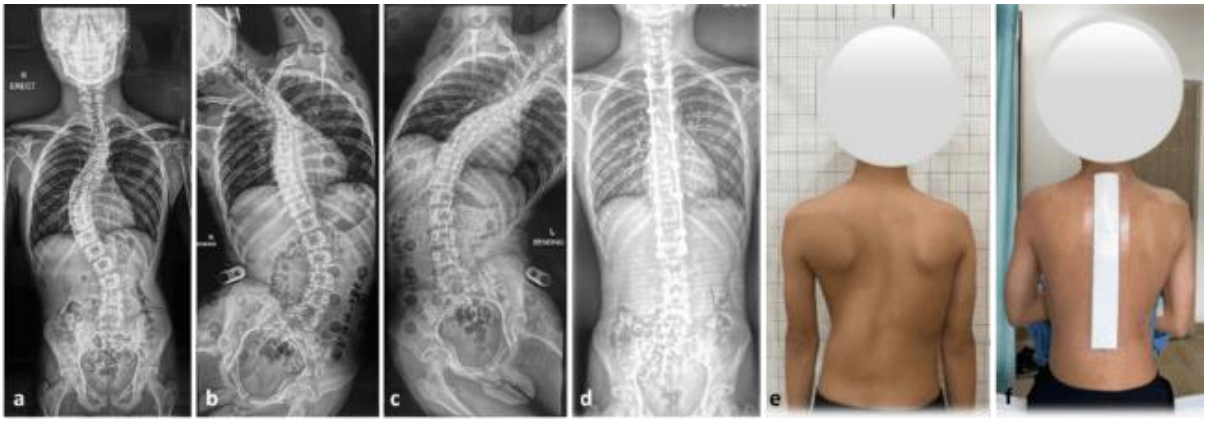
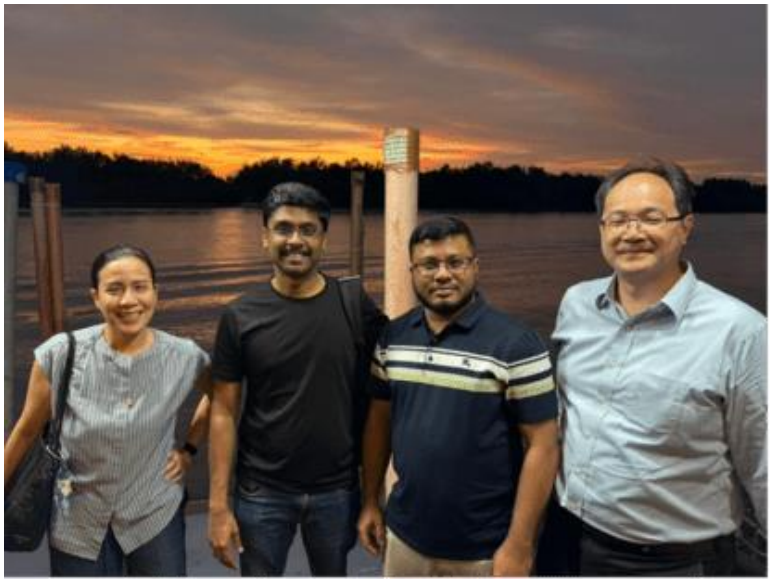


Fig 3: (a) Showing AP radiograph of 15-year-old male with Lenke 2AN, (b-c) Side-bending radiographs showing structural Proximal and Main Thoracic curves with compensatory Lumbar Curve, (d) Post-operative radiograph showing T2-L2 instrumentation (e-f) Comparison of Pre- and Post-operative clinical photographs

FELLOWSHIP and NEW FRIENDSHIPS:

One of the most rewarding aspects of my fellowship was getting to know several talented spine surgeons, Dr. Ana Rosario from the Philippines, Dr. Chen Chih-Wei from Taiwan, and Dr. Abdullah Al-Mamun from Bangladesh, not only as colleagues but as individuals. Interacting with them allowed me to learn from their diverse training backgrounds, clinical perspectives, and approaches to Scoliosis care, shaped by their respective healthcare systems. Our discussions—both inside and outside the operating room—were rich, insightful, and often inspiring. Beyond the academic exchange, these interactions gradually evolved into genuine friendships built on mutual respect, shared challenges, and a common passion for spine surgery. I believe these bonds will extend well beyond the fellowship and continue to enrich my professional journey.



MEMORIES WITH PROF. DATO. KWAN AND THE SPINE TEAM:





I am extremely grateful to the Asia Pacific Spine Society (APSS) for the opportunity to participate in the spine fellowship program. This training has significantly strengthened my knowledge of spinal deformities, operative strategies, and comprehensive patient management. I am thankful for the exceptional mentorship, clinical exposure, and academic growth made possible through this fellowship.

S.NO	DATE	NAME	AGE (yrs)	SEX	DIAGNOSIS	PROCEDURE	SURGEON	ASSIST/ OBSERVE
1	02.12.25	Iris Sophia Binti Buqhory	13	F	Adolescent Idiopathic Scoliosis (AIS) Lenke 1A	T4-L2 Posterior instrumented Deformity correction and Fusion	Prof Chris/ Dr.Chee	Observed
2	03.12.25	Khor Chuk Kuan	23	M	AIS Lenke 3 CN	T3-L3 Posterior instrumented Deformity correction and Fusion	Dato Kwan/ Prof Chris	Assisted
3	03.12.25	Thiresha Nair	13	F	Congenital Scoliosis (T4 Hemi)	T2-T12 Posterior instrumented Deformity correction and Fusion	Dato Kwan/ Prof Chris	Observed
4	03.12.25	Evelyn Tiam Yee Wen	15	F	AIS Lenke 1AN Flexible	T7-L2 Posterior instrumented Deformity correction and Fusion	Dato Kwan/ Dr Chee	Assisted
5	03.12.25	Citra Camelia	13	F	AIS Lenke 1CN Flexible	T3-T12 Posterior instrumented Deformity correction and Fusion	Dato Kwan/ Dr Chee	Observed
6	04.12.25	Nurul Awla Binti Mohamed	25	F	AIS Lenke 5C	T5-L4 Posterior instrumented Deformity correction and Fusion	Prof Chris/ Dr Chee	Assisted
7	04.12.25	Nur Arisa Rose	12	F	AIS Lenke 1CN	T3-L3 Posterior instrumented Deformity correction and Fusion	Dr Chee/ Dr Sato	Observed
8	06.12.25	Tee Kai Sheng	15	M	AIS Lenke 2AN	T2-L2 Posterior instrumented Deformity correction and Fusion	Prof Chris/ Dr Chee	Assisted
9	06.12.25	Goh Jia Jun	25	M	AIS Lenke 2ARN	T2-L3 Posterior instrumented Deformity correction and Fusion	Dato Kwan/ Prof Chris	Observed
10	06.12.25	Febby Lin	22	F	AIS Lenke 1C- Stiff	T2-T12 Posterior instrumented Deformity correction and Fusion	Dato Kwan/ Dr Chee	Assisted