

Fellowship Report (Dr. Mazhar Ali)

Asia Pacific Spine Society Fellow from Pakistan

Fellowship Duration: 25.07.23 to 24.10.23

Fellowship Centre: National University Hospital Singapore

Fellowship Director: Prof. Dr. Gabriel Liu

At the outset, I express my heartfelt gratitude and thanks to the Asia Pacific Spine Society for giving me this lifetime opportunity of learning, sharing knowledge and camaraderie through APSS Fellowship program at one of the best centers for spine learning in the world, National University Hospital Singapore. It will be treacherous on my part if I don't mention Educational, Fellowship Sub-Committee and especially Jennifer Matthew first in the list as this is their commendable tiring efforts, that we fellows become a part of this so successful learning program.

It was an honor for me to work in Spine Department of National University Hospital Singapore under kind supervision of wonderful Faculty. Spine Surgery Department has an amazing Team of Spine surgeons. Each consultant is fully skilled in teaching and training in his field. Department meets the latest standards of technology, Gadgets and equipments and providing full range of spine services like Pediatric Spinal Deformity, Adult Spinal Deformity, Motion Preservation Surgery, Trauma, Tumor, Infection and degenerative spine conditions. The department of Spine surgery at NUHS is simply master class and is second to none. With all the modern gadgets, equipments available to be used by the phenomenal Spine surgeons in a world class operation theatre, a highly trained enthusiast supporting team has made my learning at this centre enthralling and did jibe in me the vigour to learn further and do better.

Prof Gabriel Liu asked for my topics of interest and targets before my arrival and he accommodated me in roaster according to my interests and goals in academic fellowship. My fellowship director is so humble, caring and has left no stone unturned in making a foreign fellow feel at home away from home. His frequent interactions, calls and personal messages with the sole intent to make one comfortable and homely deserves salute and all praise. His knowledge and its clinical execution and implementation is something way high to be inculcated. He always encouraged me to learn new things and explained every step during surgery, I have great experience to learn Microscopic and Tubular Decompression, MIS & Open TLIF, Dome Hybrid Open Door Laminoplasty, ACDF and Deformity Correction. Being the President of Singapore Spine Society, Prof. Dr. Gabriel LIU arranged the Spine Meeting of Local GPs and Spine Surgeons of Singapore is highly commendable. I am highly Grateful for

arranging the Hands-On workshop on Robotic Mazor X, had a great contribution in my learning. Last but not the least thanks for hosting awesome dinner for me & my Family.

I am thankful to Prof H.K. Wong who is world known Spine Surgeon and has key role in establishing this state of the art Spine Centre and is father of spine surgery in Singapore. He was just like fatherly figure to me, for teaching pearls of scoliosis and mentoring me during my Fellowship. His teachings has changed my concept of scoliosis management. I am thankful to Him for teaching me about Cantilever technique of Scoliosis, Thoracoscopic Correction of Scoliosis, Anterior Approach for Tubercular Spine, OPEN TLIF and brief concept of Ponte Osteotomy & Fusion. I am proud to be known as Fellow of Prof Wong. Lot of prayers for his long healthy life.

Feeling honored to write about my friend and Teacher A/P Dr. Dennis Hey, the most thrilled, Vibrant, challenging and innovative spine surgeon. I always love and feel blessed to Scrub with him. He is Heading Motion Preservation Department at NUH. He shared his research work on Intervertebral Disc Regeneration, Exosome Growth Factor enhanced Spinal Fusion, Spinal alignment studies in other postures and formulating surgical strategies for adult spinal deformity. He changed my Spine Surgery and understanding of spine biomechanics with his innovative thought process. I had great experience to learn Cervical and Lumbar Disc Arthroplasty, Endoscopic Discectomy and Cervical Pedicle screw fixation with confidence under C-Arm Control and Free Hand technique. His results of Motion Preservation surgery encouraged me to add ADR in my practice. I am looking forward to learn more from him in future and hopefully he will accommodate me. On my request Dr. Denis Hey arranged Two wonderful ADR Symposium where I got chance to interact with Spine Surgeons from Malaysia, South Korea, India, Vietnam and Local Singaporeans. Special Thanks for such a delicious Dinner at the end.

Happy to write about Prof Naresh Kumar who is Master in Metastatic Spine Disease and MIS Technique. I have No words to say thanks as Prof. Naresh Kumar was the first who taught me about the Use of Microscope and scrubbed me maximum in his cases regarding Tumor Surgery, MIS, Microscopic Decompressions, ACDF and Open TLIF. He also taught me the Transforaminal Injections and Nucleoplasty and Disc Oblation. He helped me a lot other than NUHS.

I am also thankful to Prof Joseph Thambiah, who is very friendly and encourages the Bilateral Learning and Teaching, and have great experience to learn MIS Technique.

Also grateful to Dr. Lau Leok Lim for teaching and sharing his experience regarding management of pediatric deformity Correction and Microscopic work for Decompression & TLIF.

Happy to write about Dr. John Ruiz who is senior consultant. He was the man who improved my OR manners. He has great communication skills. I saw him very methodological and organized. Always keeps his eyes on every single step to breach the OR Sterilization. Highly thankful to Dr. John Ruiz for teaching me to put the Iliac Screws under Navigation & C-Arm Control. Dr. Johns! You will be remembered for making me familiar with O-ARM & Navigation.

Dr. Alex Teu! Thank you very much for being the good friend and colleague. How I can forget during scrub when you say “ Dr. Mazhar you are senior to me and can do it better than me” . Very humble and nice human being, always having a smile on his face. Lot of prayers for your good career ahead.

The grand clinical rounds held every Thursday morning is a place and time where one can discuss all his doubts and be abreast with the recent developments in spine surgery. All the nicks and nocks of the different surgeries performed over the week is discussed openly, all in the interests of enhancing better patient care and outcomes.

I was extensively exposed to a wide variety of spine surgeries and the spectrum of surgeries knew no bounds. It included all varieties of spine etiologies; deformity, degenerative conditions, tumors and what not. I was adequately exposed to all levels of spine involvement i.e. from cervical region to lumbo-sacral segment and Pelvic with all modern gadgets and instruments inclusive. These are some surgeries to mention I had exposure at NUHS:

- Anterior Scoliosis Surgery
- Thoracoscopic Correction of Scoliosis
- Correction Of Severe Scoliosis Deformity without Osteotomy
- Asymmetrical PSO for Correction of Deformity
- Mobile Disc Arthroplasty in Cervical & Lumbar spine
- Cervical Pedicle Screw Fixation
- Biportal Endoscopic Discectomy & Decompression
- Over the Top Decompression
- Cervical Laminoplasty with Dome & reverse Dome Osteotomy
- Separation surgery for tumors
- Ant / Lat Approach for TB
- Anterior & Posterior Fixation
- MIS TLIF

Dr. Gabriel and his team ensured that I utilize the fellowship to its full academic potential. Having Dr. Anwar from Bangladesh as APSS fellow, Dr. Vishal Kumar from India and Dr. Arihoko from Japan as AO Spine fellows at the same time was icing on the cake as this led us to have good fun time together. I am thankful to the team of National University Hospital Singapore Centre under the chairmanship of Prof. Dr. Gabriel Liu for this wonderful Three Months of real academic feast in a very congenial and cordial atmosphere.

Highly thankful for Farewell dinner given by the Department at the end. That was a great time with my Seniors & Fellows.

The Singapore country itself must be in the wish list of visit for anyone for its bounty beauty, tourist attractions in plenty, a rich and diverse culture. It's a very structured, disciplined, sincere centre housed by very hard working, intelligent, humble work force. This is a must visit centre for any spine surgeon; for me I feel a spine surgeon who has not yet visited this centre is missing out something invaluable in his journey as a spine surgeon.

Incredible National University Hospital, Singapore!

Appreciation for Medtronic for Funding my Fellowship & this shows how Sincerely, Medtronic is involved in Academic Activities!

Long Live Asia Pacific Spine Society!



APSS Spine Fellow at NUHS



Presentation at Spine Grand Round Class



Placement of Pedicle Screws Under Navigation



Putting the ACDF Plate Screws Under Microscope



Hands-On Workshop for Robotic MAZOR-X



Dinner With Prof Dennis Hey



Before Robotic Hands-On Workshop with Alex & Lin Shuxun



With Prof H-K Wong at GPs Gathering



With Fellows (Dr. Arihiko & Dr. Vishaal) & Prof Dennis Hey after Cervical Pedicle Screws Surgery



A good time before Farewell Dinner with Prof. Gariel LIU & Fellows



Enjoying Lunch Hosted by Prof. Gabriel LIU



Relaxing & Enjoying Lunch after Surgery Hosted by Prof. H.K Wong



Fun With Fellows- Had a Great Time



Prof. Naresh Kumar Organized Dinner for Fellows



Spine Department Farewell Dinner

LOG BOOK

Sr. No.	Name	Age	Diagnosis	Procedure	Surgeon	Status
1	25-07-23	60/M	Severe degenerative scoliosis spine	TLIF L3-S1 with PISF T11-iliac screws (Facetectomies T11-S1 and de-bulking of Osteophytes)	Prof H-K Wong	Assistant
2	26-07-23		Adolescent Idiopathic Scoliosis (AIS)	Correction of Scoliosis T4-L1 PSIF	Prof. Gabriel Liu	Assistant
3	27-07-23	64/F	Degenerative Disc disease with stenosis C5-6, C6-7	ACDF C5-6, C6-7 with Bilateral unconvertable joints decompressed under microscope	Prof. Gabriel Liu	Assistant
4	29-07-23	53/M	C6-7 PIVD	ACDF C6-7	Prof H-K Wong	Assistant
5	29-07-23	57/F	DDD with left side stenosis (L5-S1)	Left TLIF & PISF L5-S1	Prof H-K Wong	Assistant
6	31-07-23	12/F	Adolescent idiopathic scoliosis	Thoracoscopic Fusion and instrumentation	Prof H-K Wong	Assistant
7	1/8/2023	73/M	L3-4 left Para central disc with stenosis & retrolisthesis	Left L4-S1 TLIF with PISF	Prof H-K Wong	Assistant
8	1/8/2023	53/F	L4-5 Listhesis with severe stenosis and L5-S1 stenosis	L4-S1 TLIF with decompression and PISF	Prof H-K Wong	Assistant
9	2/8/2023	61/M	Degenerative Disc Disease C3-7 with Myelopathy	C3 Dome osteotomy, C4-6 Laminoplasty, C7 reverse osteomy with foraminotomies	Prof. Gabriel Liu	Assistant
10	2/8/2023	54/F	Metastatic pathological fractures D12 with stenosis	MIS D10-L3 PISF with central decompression only D12	Prof. Joseph Thambiah	Assistant
11	3/8/2023	46/M	LBP with Degenerative Disc Disease contained Disc	Anuloplasty and Nucleoplasty with Radio frequency ablation	Prof. Naresh Kumar	Assistant

12	3/8/2023	49/M	LBP with numbness both legs PIVD L3-4 and L4-5	Interlaminar Decompression at both level with inter spinous device under microscope	Prof. Naresh Kumar	Assistant
13	4/8/2023	62/M	Cervical Myelopathy	ACDF C5-6, C6-7	Prof. Naresh Kumar	Assistant
14	4/8/2023	71/M	L4-5 severe stenosis with degenerative spine	L4-5 decompression and Right TLIF with PISF	Prof. Naresh Kumar	Assistant
15	8/8/2023	72/F	L3-4 right paracentral disc prolapse	Right L3-4 decompression & Discectomy under microscope	Prof H-K Wong	Assistant
16	8/8/2023	26/F	Early onset Scoliosis	Corrective Surgery with PISF and fusion using Facetectomies and bone graft T4-L4	Prof H-K Wong	Assistant
17	10/8/2023	74/F	Spinal Stenosis L4-5, L5-S1 Bilateral recess	Bilateral Decompression L4-L5, L5-S1 under microscope	Prof Gabriel LIU	Assistant
18	11/8/2023	60/M	L4-5 Listhesis with spinal stenosis and L4-5, L5-S1	Decompression with right TLIF L4-5 AND left L5-S1 with BMP	Prof Naresh Kumar	Assistant
19	12/8/2023	60/M	C5-6 & C6-7 PIVD with retrolisthesis C5-6	C5-6, C6-7 ADR	Prof Dennis Hey	Assistant
20	12/8/2023	73/F	Old fracture T12 and L1 with kyphosis	PVCR T12 with PISF T10-L2	Prof Dennis Hey	Assistant
21	14/8/2023	56/F	Degenerative disc disease with stenosis L4-5	Left TLIF & PISF, L4-5	Prof H-K Wong	Assistant
22	14/8/2023	73/F	L4-5 grade 1 Listhesis with stenosis	L4-5 left TLIF with PISF and decompression	Prof Lau Leok lim	Assistant
23	15/8/2023	28/F	Scoliosis right thoracic	Posterior instrumentation and fusion T2-L3 and Ponte osteotomy T7-8 to T11-12	Prof H-K Wong	Assistant
24	18/8/23	24/F	L5-S1 PIVD left para central	Micro discectomy	Prof Dennis Hey	Assistant
25	19/8/23	79/F	Cervical Myelopathy	Laminoplasty C3-C6	Prof Dennis Hey	Assistant

26	22/8/23	79/F	Degenerative scoliosis with stenosis L3-4, L4-5, L5-S1	PISF T10-iliac with TLIF left L4-5, L5-S1 and right L3-4 with Bone cement screws in T10 and Vertebroplasty T9	Prof H-K Wong	Assistant
27	23/8/23	74/M	L4-5 Listhesis with severe canal stenosis	MIS Right TLIF L4-5 with PISF and decompression	Prof H-K Wong	Assistant
28	24/8/23	53/M	Spondylolisthesis L4-5 (Bilateral pars Fracture	Left TLIF L4-5 with PISF	Prof H-K Wong	Assistant
29	25/8/23	70/M	L2-3, L3-4 PIVD & Stenosis	Decompression left laminotomy L2-3, L3-4 with over the top decompression	Prof Dennis Hey	Assistant
30	25/8/23	70/M	Bastrop disease/ Syndrome Facet Arthroplasty	Endoscopic decompression of intra spinous L3-S1 and facet ablation	Prof Dennis Hey	Assistant
31	25/8/23	39/F	Ossified Ligament Flavum T10-11	Decompression Laminectomy T10-11	Prof Dennis Hey	Assistant
32	26/8/23	64/M	Spondylodiscitis T10-11	Anterior debridement, partial corpectomy and reconstruction with rib bone graft	Prof Dennis Hey	Assistant
33	28/8/23	45/M	Spondylolisthesis L4-5 and DDD L2-3, L3-4, L5-S1 with multi-level stenosis	Left TLIF L4-5, L5-S1 and decompression L2-3, L3-4 & PISF L2-S1	Prof H-K Wong	Assistant
34	29/8/2023	53/F	degenerative Scoliosis and kyphotic deformity with stenosis	PISF T11-iliac with Left TLIF L3-4, L4-5 and Asymmetrical PSO L2 with BMP and BG	Prof H-K Wong	Assistant
35	30/8/2023	44/M	Cervical Myelopathy and residual Compression at T11-12	C2 to C7 PISF C2 to C6 laminectomies left C3-4 foraminotomy Bilateral C4-5 foraminotomies C7 reverse dome osteotomy. Revision implants extension of fusion and decompression T11-12	Prof Gabriel LIU	Assistant
36	31/8/2023	84/F	L4-5 Spondylolisthesis with stenosis L4-5 and right L5-S1	Transforaminal interbody fusion L4-L5 and L5-S1 lateral recess right side decompression and micro discectomy	Prof Gabriel LIU	Assistant

37	2/9/2023	61/F	Cervical Radiculopathy	Anterior cervical discectomy C5-6, C6-7 and artificial disc replacement (ADR)	Prof Denis Hey	Assistant
38	4/9/2023	55/M	L3-4 spondylolysis and Spondylolisthesis	Left TLIF L3-4 and Right TLIF L4-5 and PISF L3-L5	Prof H-K Wong	Assistant
39	4/9/2023	68/F	Spondylolisthesis L4-5	Left MIS TLIF under navigation	Prof Lau Leok lim	Assistant
40	5/9/2023	67/F	L4-5 Listhesis with stenosis (previous 3 Level MIS TLIF L1-2, L2-3, L3-4)	Extension off posterior instrumentation L1-iliac with TLIF at L4-5 and L5-S1	Dr. John Ruiz	Assistant
41	5/9/2023	71/F	Cervical Radiculopathy	Transforaminal injection left C5-6, C6-7	Prof Naresh Kumar	Assistant
42	7/9/2023	38/M	Bilateral buttock and leg radiculopathy	Bilateral L5 and S1 TFI	Prof Naresh Kumar	Assistant
43	8/9/2023	77/F	Cervical Radiculopathy	revision posterior cervical instrumentation from Lat mass screws to Pedicle Screws C3-C6, decompression undercutting C3 and Left C7 laminectomy	Prof Denis Hey	Assistant
44	8/9/2023	20/M	Disco genic radiculopathy more on left side	ADR L5-S1	Prof Denis Hey	Assistant
45	9/9/2023	35/M	Traumatic C6-7 unilateral facet dislocation	Dislocation reduction & C6-7 pedicle screws and Rods	Prof Naresh Kumar	Assistant
46	11/9/2023	68/F	Left Paracentral Disc Herniation L4-5	Left Micro discectomy L4-5 and lateral recess decompression	Prof H-K Wong	Assistant
47	12/9/2023	78/M	Lumber pseudo arthrosis L2-3 and Fibrous non-union and fracture L2 compression	Spinal realignment and application supplementary stabilization rods between L2 and L3 on both sides. Anterior L2-L3 discectomy and excision of L2 fibrous Non-union with reconstruction using cage and screw-Rod L2-L3	Prof H-K Wong	Assistant

48	13/9/2023	25/M	L4-5 left para central PIVD	Left tubular Microscopic discectomy L4-5	Prof Gabriel LIU	Assistant
49	13/9/2023	35/M	Traumatic C5-6 unilateral facet dislocation	Dislocation reduction & C5-6 pedicle screws and Rods	Prof Naresh Kumar	Assistant
50	14/9/2023	37/F	Metastatic tumor involving the T5-6	MIS T4-T10 with partial laminectomy T5 and left T6 Pediclectomy	Prof Naresh Kumar	Assistant
51	15/9/23	73/M	C5 Tumor	ACCF C4-C7 (C5: Corpectomy) + Post lateral mass PISF C4-6	Prof Naresh Kumar	Assistant
52	20/9/23	66/M	DDD and Spinal Stenosis with Spondylolistheses L4-5	Decompression L2-3 and Right TLIF L4-5 & L5-S1 and PISF	Prof Gabriel LIU	Assistant
53	21/9/23	73/M	L2-3 Right lateral recess stenosis and L4-5 bilateral stenosis	Decompression right L2-3 and bilateral L4-5 under microscope	Prof H-K Wong	Assistant
54	22/9/23	60/M	PIVD C5-6	Anterior cervical diseconomy and ADR C5-6	Prof Denis Hey	Assistant
55	22/9/23	60/M	PIVD C5-6	Biportal endoscopic decompression and discectomy	Prof Denis Hey	Assistant
56	22/9/23	41/M	Left paracentral Disc Herniation L5-S1	left sided lateral recess decompression and discectomy L5-S1	Prof Gabriel LIU	Assistant
57	25/9/23	79/M	PIVD C4-5, C5-6	ACDF C4-5, C5-6	Prof H-K Wong	Assistant
58	25/9/23	42/M	LBP with Right leg radiculopathy	Right L5-S1 transforaminal block	Prof Naresh Kumar	Assistant
59	25/9/23	67/M	Cervical Myelopathy	Cervical Laminectomy C3-6 and fusion by applying Lateral Mass screws	Prof Lau Leok lim	Assistant
60	27/9/23	68/M	Cervical Myelopathy	Posterior cervical to thoracic instrumentation and fusion (C5-T2) and laminectomy	Prof Gabriel LIU	Assistant
61	28/9/23	69/M	Right Cervical Radiculopathy	Right C5-6 Transforaminal block	Prof Naresh Kumar	Assistant
62	28/9/23	42/F	Cervical Myelopathy due to DDD and Severe stenosis	C4-5, C5-6, C6-7 ACDF	Prof Gabriel LIU	Assistant

63	28/9/23	42/M	LBP with Right leg radiculopathy	Right L5-S1 Transforaminal block	Prof Naresh Kumar	Assistant
64	29/9/23	62/M	Cervical Myelopathy	Laminoplasty C3-C6	Prof Naresh Kumar	Assistant
65	2/10/2023	72/M	Grade 1 Listhesis L4-5	Left TLIF L4-5	Prof Lau Leok lim	Assistant
66	4/10/2023	71/M	Degenerative scoliosis with spinal stenosis	L3-illiac fixation with TLIF L3-4, L4-5, S1 and decompression	Prof Denis Hey	Assistant
67	5/10/2023	85/M	Fracture T12 and Cord compression	Decompression and biopsy and posterior instrumentation T9-L3	Prof Denis Hey	Assistant
68	6/10/2023	65/M	Cervical Myelopathy due to OPLL and cervical spine degeneration and deformed	Cervical Laminectomy C3-5 and undercutting of C2 and C6 and fusion and alignment with pedicle screw and rods C3-C5	Prof Denis Hey	Assistant
69	7/10/2023		PIVD L4-5	Biportal endoscopic decompression L4-5	Prof Denis Hey	Assistant
70	9/10/2023	72/F	L3-4 Stenosis	Microscopic Decompression central, over the top and lateral recesses L3-4	Prof Lau Leok lim	Assistant
71	10/10/2023	65/F	C7 pathological fracture and compression	Anterior C7 Cortectomy and fusion C6-T1 & posterior C5-T2 instrumentation (Lat mass and Pedicle screws)	Prof Gabriel LIU	Assistant
72	11/10/2023	55/F	L4-5 Listhesis and left L5-S1 Stenosis	Left TLIF L4-5 and decompression on Left Side L5-S1 under microscope	Prof Gabriel LIU	Assistant
73	12/10/2023	61/M	Cervical Degeneration and Decompression C4-5, C5-6	ACDF C4-5, C5-6	Prof Naresh Kumar	Assistant
74	12/10/2023	75/M	PIVD L4-5	Biportal endoscopic decompression L4-5	Prof Denis Hey	Assistant
75	13/10/2023	67/F	Pathological Fracture T8	MIS T5-T10 and Biopsy T8	Prof Naresh Kumar	Assistant
76	18/10/2023	83/F	Spinal Stenosis L4-5, L5-S1	Left TLIF L4-5, L5-S1 & PISF with BMP	Prof Gabriel LIU	Assistant
77	19/10/2023	42/M	Traumatic Burst fracture T12	Decompression and MIS Fixation T11-L1 (short segment fixation)	Prof Naresh Kumar	Assistant

78	20/10/2023		Spinal Stenosis at L2-3, L3-4, L4-5 more on right side	Right decompression laminotomy L2-3, L3-4, L4-5 with over the top decompression to left (Bilateral)	Prof Denis Hey	Assistant
79	20/10/2023	75/M	PIVD C4-5 , L5-6	Posterior cervical Biportal endoscopic decompression flavectomies C4-5 and C5-6 (Bilateral)	Prof Denis Hey	Assistant
80	20/10/2023	35/M	Left L5-S1 PIVD	Left Foraminal block L5-S1	Prof Denis Hey	Assistant