



Medtronic

APSS-MEDTRONIC FELLOWSHIP PROGRAMME 2025

4th March'2025 – 2nd June'2025

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MBBS, MS Orthopedics, M.Ch Spine Surgery

Mentors



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**THE CATHOLIC UNIVERSITY OF KOREA
SEOUL ST. MARY'S HOSPITAL**

INTRODUCTION

The APSS Fellowship is widely recognized as one of the most prestigious and well-structured training programs for spine surgeons in the Asia-Pacific region. My awareness of the program developed through various professional interactions, most notably my attendance at the APSS Congress in 2019. This congress was a pivotal experience that introduced me to the Society's strong academic foundation, commitment to advancing spine care, and its role as a leading regional authority. Since then, I have actively maintained my membership and engagement with APSS through their newsletters, educational bulletins, and ongoing communications. These resources have consistently highlighted the fellowship program, showcasing the accomplishments of its alumni and the impact the fellowship has on shaping skilled spine surgeons across Asia. This reinforced my perception of the APSS Fellowship as an invaluable platform for specialized training and professional growth. I was lucky to get this opportunity. I consider myself fortunate to have been awarded this opportunity and I am deeply thankful to APSS and the secretariat team, particularly Ms. Jennifer Mathew and Ms. Symimul, for their support throughout the process.

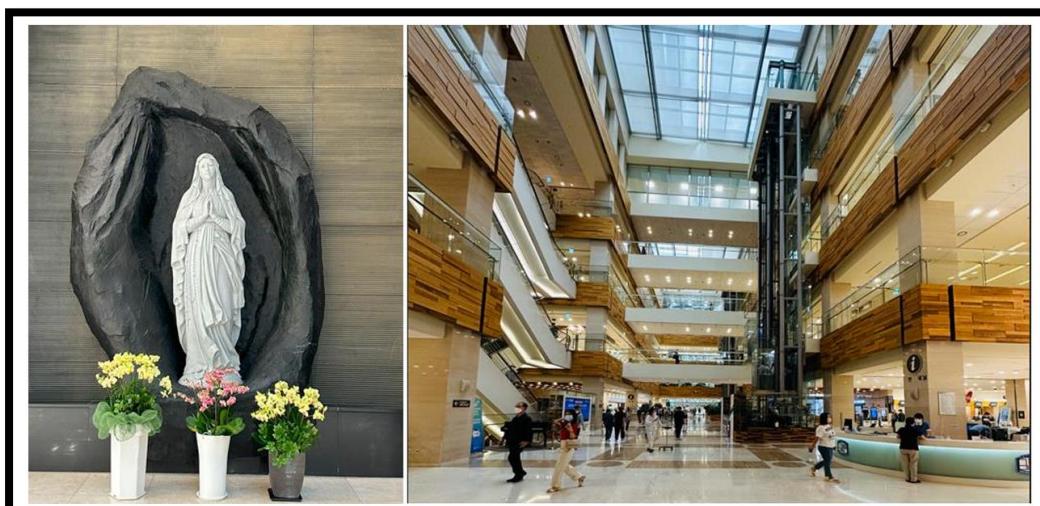
One of the key factors that attracted me to the APSS Fellowship was its dedicated focus on advanced and innovative surgical techniques, particularly in minimally invasive spine surgery (MIS) and endoscopic approaches. These techniques are becoming increasingly important in modern spine care due to their potential to reduce patient morbidity and improve recovery times. Given my personal clinical interests and the evolving demands of spine surgery, I was eager to gain hands-on experience and mentorship in these cutting-edge areas.

South Korea is internationally recognized as a leading hub for spine surgery innovation, with several centres pioneering new surgical techniques and technologies. Among these, Seoul St. Mary's Hospital stands out as a premier institution renowned for its clinical excellence and academic contributions in spine care. I was privileged to train under Professor Kim Young-Hoon, whose expertise in spinal deformity correction and minimally invasive approaches is highly regarded worldwide. Professor Kim's meticulous surgical technique, commitment to teaching, and patient-centred approach provided an ideal environment for advanced learning. Furthermore, training alongside

Dr. Kim Sang-Il, an accomplished spine surgeon with complementary expertise, enriched my exposure to diverse surgical philosophies and clinical management strategies.



This fellowship not only offered me access to cutting-edge surgical techniques but also immersed me in a culture of academic rigor, multidisciplinary collaboration, and continuous professional development. The combination of world-class mentorship, state-of-the-art clinical facilities, and a dynamic learning environment made this fellowship an exceptional opportunity to deepen my knowledge and skills in spine surgery.



FELLOWSHIP STRUCTURE

The fellowship was well-organized and clearly structured, providing a comprehensive learning framework from the outset. A detailed skeleton plan was shared at the beginning, outlining weekly clinical activities, surgeries, academic sessions, and hospital visits. This structure allowed for consistent progress, with clear expectations regarding observational and academic involvement. The balance between operating room exposure, theoretical learning, and institutional visits was particularly well maintained.

Proposed Schedule

Out-Patient Clinic: (Main Building 2F Spine Center)

	MON	TUE	WED	THU	FRI
8.30 AM	OPD-YK	OPD-YK	OPD-KK	OPD-YK	OPD-SK
11.30 AM	OPD-KK	OPD-SK	OPD-SK		

Operation: (Main Building 5F)

	MON	TUE	WED	THU	FRI
8.30 AM			OP (YK)		OP (YK)
1.30 PM		OP (SK)	OR #11		OR #11

Inside Academic Meeting:

Research Meeting- Every Thursday @12.00 PM

CMC Spine Meeting in every month

Outside Spine meetings and Congress:

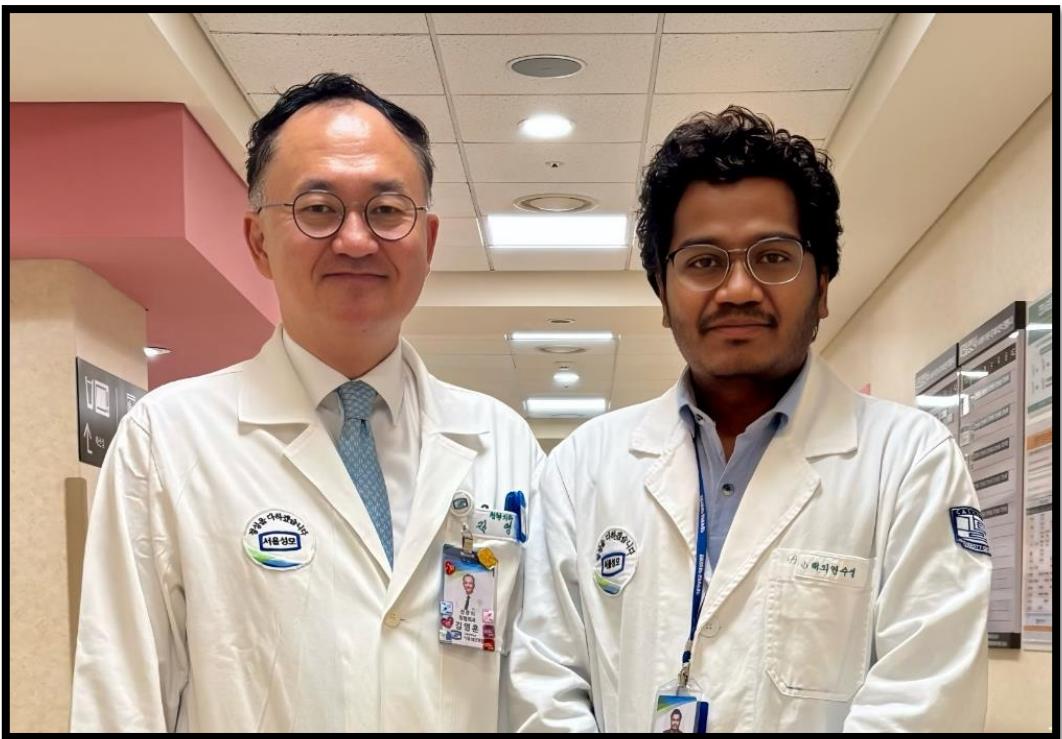
- 7th March – *Osteoporosis Study Meet*
- 22nd March – *Spine Tumor Congress*
- 29th March – *Cadaveric Spine Course*
- 23rd-24th May – *KSSS Annual Meet*

Research Projects:

1. Metalloma in Pseudoarthrosis (Case Report)
2. Related factors of early revision surgery following decompressive laminectomy in lumbar spondylosis

Outside Institute Visiting:

Prof. Ahn,JH / Dr. Park, HY / Dr. Kim, HC



OPERATING THEATRE EXPERIENCE

One of the most valuable aspects of the fellowship was the extensive exposure to a wide variety of spine surgeries performed using advanced technology and innovative surgical techniques. Seoul St. Mary's Hospital is equipped with state-of-the-art operating rooms, modern navigation systems, and high-end instrumentation, all of which contributed to a highly efficient and precise surgical environment.



During the fellowship, I had the opportunity to observe and learn from a diverse range of procedures, including:

- Minimally invasive spine (MIS) surgeries, such as MIS-TLIF/PLIF, endoscopic discectomy, and decompression
- Revision surgeries, addressing instrumentation failures, pseudoarthrosis, and adjacent segment disease
- Complex spinal deformity corrections, involving various grades of osteotomy (e.g., Ponte, pedicle subtraction, vertebral column resection)
- Degenerative spine surgeries, including cervical and lumbar decompressions and fusions

Each surgical case provided valuable insights into preoperative planning, intraoperative technique, and postoperative care. The surgical team's approach emphasized accuracy, safety, and the use of evidence-based strategies to optimize patient outcomes. The integration of high-tech imaging and intraoperative neuromonitoring further enhanced the safety and efficacy of complex procedures.

Noteworthy Cases:

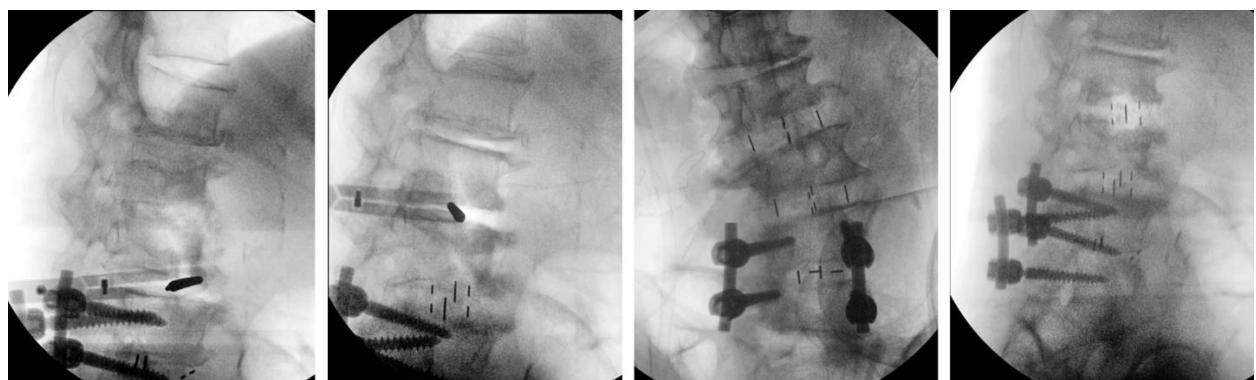
1. # Deformity Correction

A 76-year-old male with a history of Parkinson's disease and prior L4–L5 interbody fusion and instrumentation, who presented with progressive axial back pain, bilateral radiculopathy, and neurogenic claudication. Clinical examination and imaging revealed significant sagittal and coronal malalignment, adjacent segment disease, and multilevel degenerative pathology contributing to his symptomatic spinal imbalance.



He was managed by two stage surgery.

The first stage involved a lateral lumbar interbody fusion (LLIF) at L2–L3 and L3–L4, performed to restore anterior column height, improve segmental lordosis, and achieve initial correction of the spinal deformity with minimal posterior disruption.



The second stage of surgery involved a comprehensive posterior approach aimed at definitive deformity correction and long-segment stabilization. This included grade 1 osteotomies from T11 to S1 along with decompressive laminectomy at stenotic levels of L3-S1 to address neural compression contributing to the patient's radiculopathy and neurogenic claudication. A posterior lumbar interbody fusion (PLIF) was performed at L5–S1 to restore disc height and provide anterior column support at the lumbosacral junction. The procedure concluded with instrumented fusion from T11 to the ilium,

incorporating pelvic fixation to enhance construct stability and prevent distal junctional failure.



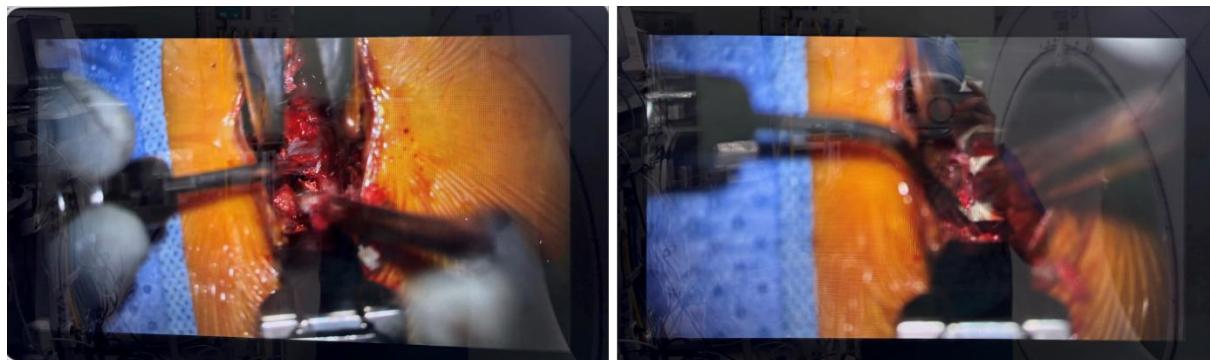
2. # MIS PLIF

A 70-year-old female presented with complaints of chronic lower back pain and radiculopathy. Clinical evaluation and radiological imaging confirmed degenerative disc disease with significant spinal canal stenosis at the L5–S1 level.



Given the localized pathology and the patient's functional status, a minimally invasive surgical approach was planned. She was managed with a mini-open posterior lumbar

interbody fusion (PLIF) at L5-S1 performed through a midline incision, allowing for direct decompression and interbody fusion.



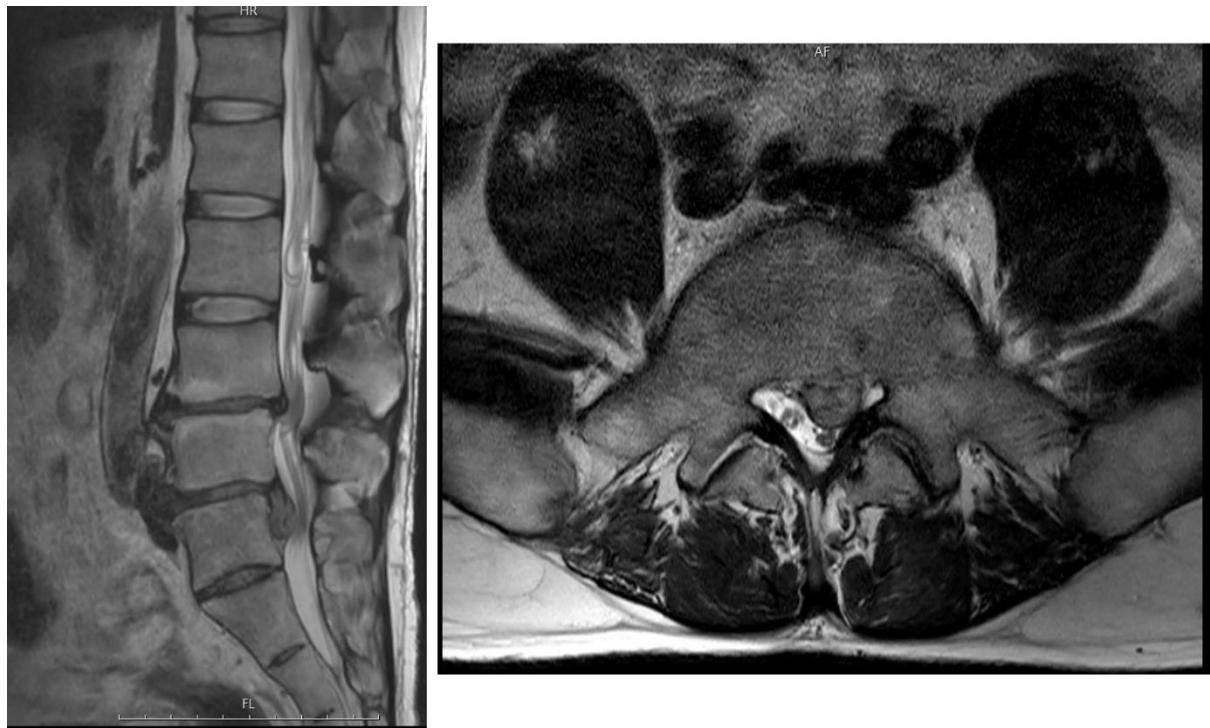
This was followed by minimally invasive pedicle screw and rod fixation, which provided segmental stability while minimizing muscle dissection and soft tissue trauma.



The patient tolerated the procedure well, with early mobilization and relief of radicular symptoms observed postoperatively. This case highlighted the effectiveness of combining mini-open and MIS techniques in managing focal degenerative pathology in elderly patients.

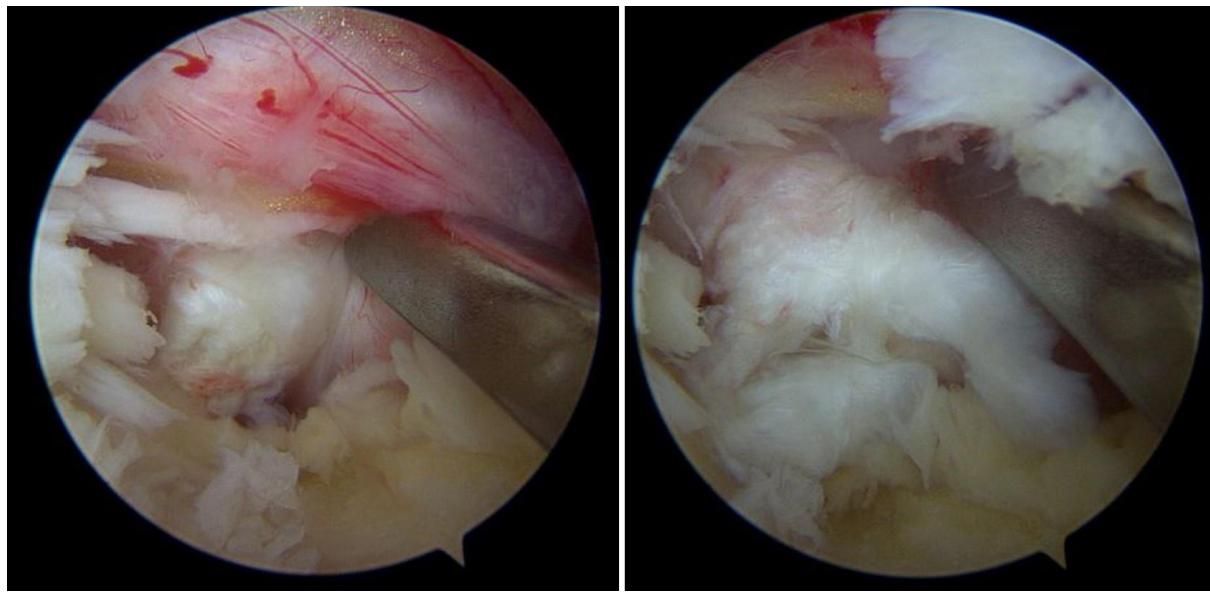
3. # Endoscopic Discectomy

A 46-year-old male presented with complaints of radiating pain along the left lower limb, consistent with symptoms of radiculopathy. Clinical examination suggested nerve root involvement, and MRI imaging confirmed the presence of a left-sided extruded lumbar disc herniation.



Given the severity of symptoms and failure of conservative management, the patient was scheduled for surgical intervention. A unilateral biportal endoscopic discectomy (UBED) was performed using the interlaminar approach, a minimally invasive technique that allows for effective decompression with reduced tissue disruption.





The procedure was completed without complications. In the immediate postoperative period, the patient reported significant relief from radicular pain, with a negative straight leg raise test indicating nerve root decompression. He recovered well, regaining the ability to perform daily activities independently and without discomfort.

4. # MIS Tumour Surgery

An 11-year-old male presented with complaints of mid-back pain and a sense of spinal instability. Clinical evaluation and imaging studies revealed a benign osteolytic lesion involving the pars interarticularis of the L1 vertebra, radiologically suggestive of an osteoid osteoma.





Given the persistent symptoms and the lesion's location, surgical intervention was planned. An excisional biopsy was performed with the aid of intraoperative navigation and a surgical microscope to ensure precise localization and complete removal of the lesion while minimizing damage to surrounding structures. The procedure was completed successfully, and the patient tolerated it well.

Overall, the surgical training during this fellowship significantly enriched my operative knowledge, refined my understanding of contemporary surgical practices, and reinforced the importance of precision and innovation in spine surgery.

LEARNING IN OUT-PATIENT CLINIC

I was actively involved in outpatient clinics, where I gained valuable insights into a variety of spinal pathologies including degenerative, traumatic, and deformity-related conditions. The training emphasized the clinical correlation of symptoms with radiologic findings, enhancing my understanding of spine-specific imaging modalities such as X-ray, CT, and MRI. I developed a more refined approach to imaging interpretation, clinical decision-making, and non-operative management strategies.

ACADEMIC ACTIVITIES

Throughout the fellowship, I was actively involved in several academic forums that significantly contributed to my clinical acumen and scientific communication skills.

Weekly Research Meetings and Case-Based Discussions

I regularly attended the department's weekly research meetings and case-based discussions, which provided a valuable platform for interactive learning. I had the opportunity to present a talk on "Failures of Lumbar Spine Decompression," where I discussed key clinical predictors, surgical pitfalls, and strategies for revision. These sessions encouraged critical thinking and evidence-based analysis of complex spine cases.

Conferences and Specialized Courses Attended

I also participated in several conferences and academic events, which enhanced my exposure to the latest developments in spine care and surgical innovation:

- **7th March** – *Osteoporosis Study Meet*. Focused on bone health, spinal fragility fractures, and treatment optimization
- **22nd March** – *Spine Tumor Congress*. Covered the management of primary and metastatic spinal tumors, including surgical and non-surgical strategies



- 29th March – *Cadaveric Spine Course*: Hands-on training in surgical approaches, instrumentation, techniques
- 23rd–24th May – *KSSS Annual Meet*: A regional spine society meeting with a multidisciplinary focus on spinal trauma, deformity, and emerging technologies

These academic activities played a key role in reinforcing foundational knowledge, fostering collaboration, and refining my approach to patient care and research in spine surgery.



RESEARCH ACTIVITIES

During the fellowship, I had the opportunity to actively engage in two research projects, which enhanced my academic perspective and understanding of clinical investigation in spine surgery.

1. Case Report on Metalloma Following Spinal Fusion

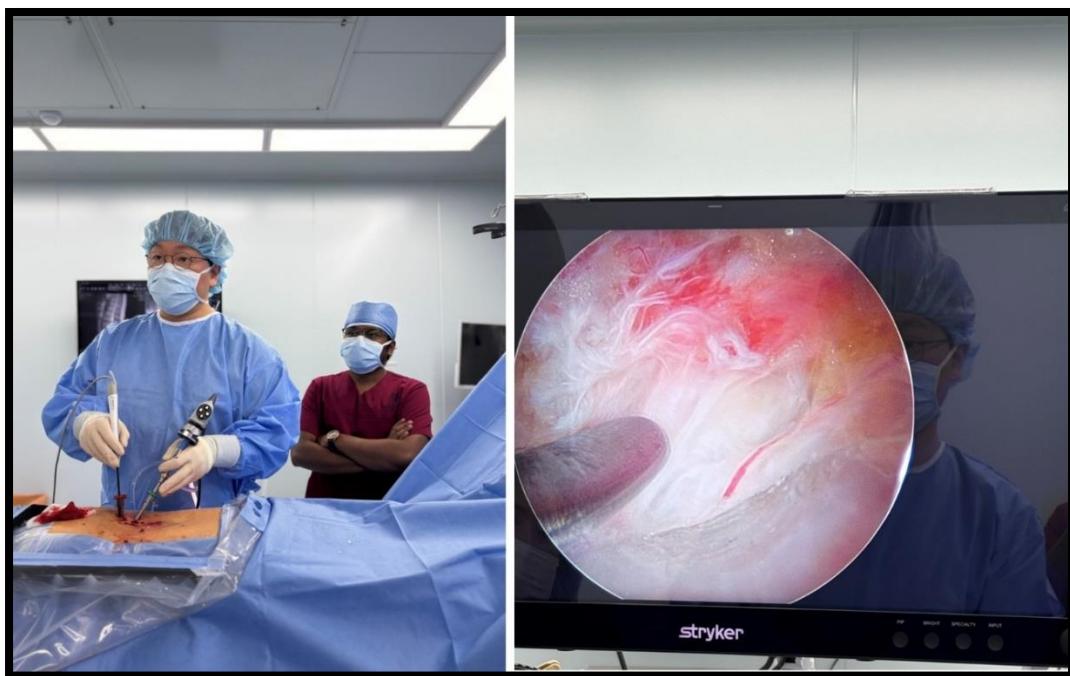
I was the primary author on a rare case report describing a metalloma formation following spinal fusion surgery. My responsibilities included detailed case analysis, literature review, image documentation, and manuscript preparation. The manuscript was successfully submitted to a peer-reviewed journal and is currently under editorial review. This project significantly improved my academic writing skills and broadened my awareness of rare complications associated with spinal instrumentation.

2. Study on Predictive Variables for Early Failure in Lumbar Decompression Surgery

I contributed to an ongoing research project aimed at identifying clinical and radiological predictors of early failure following lumbar decompressive surgery. My role primarily involved data collection and chart review, under the guidance of a research supervisor and with assistance from a research coordinator. This project provided valuable experience in understanding study design, inclusion/exclusion criteria, and statistical planning for clinical outcomes research.

VISITING OUTSIDE CENTRES EXPERIENCE

During this current fellowship, I had the valuable opportunity to broaden my surgical knowledge by visiting renowned outside centres specializing in spine surgery. At Baro Seogu Hospital in Incheon, South Korea, I observed a variety of advanced endoscopic spine surgeries under the expert supervision of Dr. Hun-Chul Kim. This experience allowed me to gain insight into minimally invasive techniques, patient selection, and the nuances of biportal endoscopic procedures, improving my understanding of cutting-edge approaches to spinal decompression and disc management.



Additionally, I observed complex minimally invasive spine fusion surgeries under Dr. Dong-Gune Chang, where I learned about the planning, and execution of fusion

techniques for spinal instability and deformities. The exposure to these surgical practices, combined with multidisciplinary perioperative care, enriched my perspective on comprehensive spine care, and reinforced the importance of precision, safety, and innovation in surgical interventions.



These observational visits significantly contributed to my professional development and will inform my clinical practice in managing spinal pathologies more effectively.

PERSONAL REFLEXION

My APSS Fellowship experience was not only academically and surgically enriching but also deeply fulfilling on a personal level. I was fortunate to be immersed in an environment where learning was not only encouraged but actively supported by a culture grounded in warmth, humility, and collaboration.





From the outset, I was welcomed with kindness and respect by everyone I encountered – consultants, professors, support staff, and fellow trainees alike. The gracious and humble demeanour of Prof. Kim Young-Hoon, coupled with the affectionate and encouraging guidance of Dr. Kim Sang-Il, created an atmosphere that was both intellectually stimulating and emotionally supportive. My co-fellow Dr. Kim Yun-Seoung played an equally important role, offering constant camaraderie and support, which transformed even the most demanding days into enjoyable and memorable experiences.



What left a lasting impression on me was the overall welcoming nature of the entire team and institution. I was not only exposed to high-level clinical training and surgical excellence but also to the rich cultural and human values that defined the institution's ethos. This holistic approach to training reinforced the significance of empathy, humility, and teamwork—qualities that are as vital as surgical precision in the practice of medicine.

This fellowship has significantly enhanced my clinical acumen, surgical skills, and evidence-based decision-making. More importantly, it has shaped my professional outlook, instilling in me a deeper sense of responsibility toward patients, peers, and the broader medical community. I am especially passionate about medical education, and I intend to pay this experience forward by mentoring junior colleagues and fostering opportunities for shared learning in clinical settings.

The APSS Fellowship has laid a strong foundation for the next phase of my career. I am committed to upholding the high standards of spine care, academic rigor, and compassionate practice that were exemplified throughout my training.

APSS Fellowship Logbook

SL No	Date	Patient ID	Gender	Age	Diagnosis	Procedure	Operating Surgeon	Role
1	05-03-2025	4468885	M	69	Lumbar radiculopathy and Adjacent segment disease L3-4	Direct Lumbar Interbody Fusion and MIS Pedicle screw fixation	Dr. Sang-Il Kim	Observer
2	07-03-2025	14844637	F	65	Lumbar Spondylolisthesis L4-5 Lumbosacral Radiculopathy with	Posterior Lumbar Interbody Fusion and MIS Pedicle screw fixation	Prof. Young-Hoon Kim	Assistant
3	12-03-2025	35105253	F	60	Pseudoarthrosis L5-S1 Metastatic Spine	Posterior Lumbar Interbody Fusion	Prof. Young-Hoon Kim	Assistant
4	12-03-2025	39647781	M	42	Disease L5	Posterior Decompression and Fusion	Prof. Young-Hoon Kim	Assistant
5	14-03-2025	40390081	F	70	Lumbar radiculopathy	Lumbar fusion	Prof. Young-Hoon Kim	Assistant
6	14-03-2025	30726071	M	52	Thoracic Myelopathy	Posterior Fusion	Prof. Young-Hoon Kim	Assistant
7	14-03-2025	38366821	F	74	TB Spine Thoracolumbar Degenerative Lumbar Spondylolisthesis	Posterior Lumbar Interbody Fusion	Dr. Sang-Il Kim	Observer
8	17-03-2025	40741795	F	59	Degenerative Lumbar Disc	MIS TLIF	Dr. Sang-Il Kim	Observer
9	19-03-2025	40469172	F	51	Lumbar radiculopathy	Posterior Lumbar Interbody Fusion	Prof. Young-Hoon Kim	Assistant
10	21-03-2025	40448383	F	76	Disease Lumbosacral Radiculopathy	Posterior Lumbar Interbody Fusion	Prof. Young-Hoon Kim	Assistant
11	21-03-2025	40226174	F	56	Atlantoaxial Rotatory	Hemilaminectomy	Prof. Young-Hoon Kim	Observer
12	21-03-2025	40651464	M	6	Subluxation Lumbosacral	Posterior Lumbar Interbody Fusion	Dr. Sang-Il Kim	Observer
13	24-03-2025	39897663	M	81	Radiculopathy	Posterior Lumbar Interbody Fusion	Dr. Sang-Il Kim	Observer
14	26-03-2025	40507685	F	68	Lumbar radiculopathy Post Laminectomy	Posterior Lumbar Interbody Fusion	Prof. Young-Hoon Kim	Assistant
15	28-03-2025	40500915	M	74	Syndrome Intradural	Posterior Lumbar Interbody Fusion	Prof. Young-Hoon Kim	Observer
16	28-03-2025	40817884	M	74	Extramedullary Tumor	Posterior Lumbar Interbody Fusion	Dr. Sang-Il Kim	Observer
17	31-03-2025	29311493	F	23	Cervical Spine Failed Back in Lumbosacral	Laminectomy and tumor excision	Dr. Sang-Il Kim	Observer
18	02-04-2025	40460471	F	65	Instrumentation for Osteosarcoma	Revision Instrumentation with Bone grafting	Dr. Sang-Il Kim	Observer
19	04-04-2025	37838022	M	70	Lumbar radiculopathy Lumbosacral	Posterior Lumbar Interbody Fusion	Prof. Young-Hoon Kim	Observer
20	04-04-2025	40463332	M	65	Radiculopathy	Posterior Lumbar Interbody Fusion	Prof. Young-Hoon Kim	Assistant
21	07-04-2025	40796864	M	65	Lumbar radiculopathy	Anterior Cervical Discectomy and Fusion	Dr. Sang-Il Kim	Observer
22	09-04-2025	35955043	M	76	Cervical Myelopathy	Discectomy and Fusion	Prof. Young-Hoon Kim	Assistant
23	09-04-2025	19157110	M	69	Adult Lumbar scoliosis	Stage-1 correction with DLIF	Prof. Young-Hoon Kim	Assistant
24	11-04-2025	40460560	M	70	Lumbar radiculopathy Thoracic Myelopathy	Posterior Lumbar Interbody Fusion	Prof. Young-Hoon Kim	Assistant
25	11-04-2025	12396314	M	58	Compreion Fracture lumab Spine	Lumbar Laminectomy and foraminotomy	Prof. Young-Hoon Kim	Assistant
26	14-04-2025	1524	F	34	Prolapsed Intervertebral Disc	Endoscopic interlaminar discectomy	Dr. Hun-Chul Kim	Observer

27	16-04-2025	35955043	M	76	Adult Lumbar scoliosis	Stage-2 correction with Posterior instrumentaion Navigation and microscope	Prof. Young-Hoon Kim	Assistant
28	18-04-2025	40770213	M	11	Osteoid Osteoma L1 Spondylosicitis with instability in Post Lumbosacral	assited excision transpedicular biopsy with extension of instrumentaion	Dr. Sang-Il Kim	Observer
29	18-04-2025	37081772	F	69	instrumentaion status Foraminal recurrent disc in Post endoscopic	Endoscopic transforaminal decompression with revision	Dr. Sang-Il Kim	Observer
30	21-04-2025	1140	F	47	TLIF	Instrumentaion endoscopic interlaminar decompression	Dr. Hun-Chul Kim	Observer
31	22-04-2025	1042	F	62	Lumbar canal stenosis Extraforaminal disc	Endoscopic transforaminal decompresion	Dr. Beom-Seok Yoo	Observer
32	22-04-2025	1673	M	49	Protrusion	Anterior Cervical	Dr. Beom-Seok Yoo	Observer
33	23-04-2025	15747861	M	47	Cervical Myelopathy Lumbosacral	Discectomy anf Fusion Posterior Lumbar Interbody	Prof. Young-Hoon Kim	Observer
34	23-04-2025	7600041	F	66	Radiculopathy Prolapsed Intervertebral	Fusion Endoscopic interlamianr	Prof. Young-Hoon Kim	Assistant
35	24-04-2025	1736	F	56	Disc	discectomy Endoscopic interlamianr	Dr. Beom-Seok Yoo	Observer
36	24-04-2025	1772	F	39	Disc Lumbosacral	discectomy Posterior Lumbar Interbody	Dr. Beom-Seok Yoo	Observer
37	25-04-2025	30254676	F	80	Radiculopathy	Fusion Postrior Lumbar Interbody	Prof. Young-Hoon Kim	Assistant
38	25-04-2025	40457930	F	70	Lumbar radiculopathy Cervical	Fusion Posterior foraminotomy and	Prof. Young-Hoon Kim	Assistant
39	28-04-2025	16248481	M	53	Myeloradiculopathy	ACDF Thoracolumbar spine	Dr. Sang-Il Kim	Observer
40	30-04-2025	30508671	F	73	Thoracolumabr Compression Fracture	Posterior decompression and instrumentaion	Prof. Young-Hoon Kim	Observer
41	30-04-2025	39551081	M	75	Lumbosacral Radiculopathy Lumbosacral	Hemilaminectomy and microspoe assisted posterior	Prof. Young-Hoon Kim	Observer
42	02-05-2025	40481800	F	56	Radiculopathy	decompression Postrior Lumbar Interbody	Prof. Young-Hoon Kim	Observer
43	02-05-2025	16982570	F	81	Thoracolumabr Compression Fracture	Fusion Thoracolumbar spine	Prof. Young-Hoon Kim	Assistant
44	02-05-2025	16304624	F	72	Lumbar canal stenosis	Posterior decompression and instrumentaion	Dr. Sang-Il Kim	Observer
45	02-05-2025	40490514	M	77	Thoracic Myelopathy	Endoscopic interlaminal	Prof. Young-Hoon Kim	Observer
46	07-05-2025	39068232	F	70	Lumbar Radiculopathy with canal stenosis	decompression Posterior Decompression	Dr. Sang-Il Kim	Observer
47	07-05-2025	40547432	F	78	Lumbar Radiculopathy with canal stenosis	and Fusion Postrior Lumbar Interbody	Prof. Young-Hoon Kim	Observer
48	09-05-2025	21927444	F	64	Lumbar Radiculopathy with canal stenosis	Fusion and MIS Pedicle	Prof. Young-Hoon Kim	Observer
49	09-05-2025	20633666	M	76	Lumbar Radiculopathy with canal stenosis CES with pseudomenigocele and	screw fixation Postrior Lumbar Interbody	Prof. Young-Hoon Kim	Observer
50	12-05-2025	25779261	F	70	LCS	Fusion Transforaminal Lumbar interbody fusion with duroplasty	Dr. Sang-Il Kim	Observer

51	12-05-2025	40862763	M	46	Herniated Nucleus Pulposus	Interlaminar Endoscopic discectomy Postrior Lumbar Interbody	Dr. Sang-Il Kim	Observer
52	14-05-2025	6988679	M	69	Lumbar Radiculopathy with canal stenosis	Fusion and MIS Pedicle screw fixation Anterior Cervical	Prof. Young-Hoon Kim	Observer
53	14-05-2025	40478814	M	66	Cervical radiculopathy	Discectomy anf Fusion Postrior Lumbar Interbody	Prof. Young-Hoon Kim	Observer
54	16-05-2025	38379233	M	79	Lumbar Radiculopathy with canal stenosis	Fusion and MIS Pedicle screw fixation	Prof. Young-Hoon Kim	Observer
55	16-05-2025	40457805	F	78	Lumbar Radiculopathy with canal stenosis	Postrior Lumbar Interbody	Prof. Young-Hoon Kim	Observer
56	19-05-2025	11770594	F	71	Lumbosacral Disc Herniation Lumbar Canal stenosis	Fusion Interlaminar Endoscopic discectomy Decompressive	Dr. Sang-Il Kim	Observer
57	19-05-2025	9894048	F	82	with cauda equina syndrome	Lmainectomy with Lumbar interbody fusion deformity correction with type 5 osteotomy and acr with fiblar allograft and	Dr. Sang-Il Kim	Observer
58	21-05-2025	37246415	M	68	Dorsolumbar compression fracture with kyhotic deformity	instrumented stabilization Postrior Lumbar Interbody	Prof. Young-Hoon Kim	Assistant
59	21-05-2025	37246415	M	67	Lumbar Radiculopathy with canal stenosis	Fusion and MIS Pedicle screw fixation	Prof. Young-Hoon Kim	Observer
60	26-05-2025	28855082	F	76	Lumbar Canal stenosis with radiculopathy Lumbar radiculopathy and nonunion in intervened posterior	Lumbar Canal stenosis with radiculopathy	Dr. Sang-Il Kim	Observer
61	28-05-2025	40577151	M	71	instrumented fusion	Direct lumbar interbody cage insertion L3-L5 Postrior Lumbar Interbody	Prof. Young-Hoon Kim	Observer
62	28-05-2025	30625380	F	75	Lumbar Radiculopathy with canal stenosis	Fusion and MIS Pedicle screw fixation	Prof. Young-Hoon Kim	Observer
63	29-05-2025	2504933	M	61	Adult Lumbar scoliosis with canal stenosis	Stage-1 correction with OLIF L2-S1	Dr. Dong-Gune Chang	Assistant
64	29-05-2025	1115616	F	73	Lumbar Canal stenosis with radiculopathy	Lumbar Canal stenosis with radiculopathy	Dr. Dong-Gune Chang	Assistant
65	30-05-2025	35301874	F	75	Lumbar Canal stenosis with radiculopathy	Lumbar Canal stenosis with radiculopathy	Prof. Young-Hoon Kim	Observer
66	30-05-2025	40464514	F	65	Lumbar Radiculopathy with canal stenosis	Fusion and MIS Pedicle screw fixation	Prof. Young-Hoon Kim	Observer
67	02-06-2025	21148253	F	72	Lumbar radiculopathy Lumbar Radiculopathy	Interlaminar Endoscopic decompression	Dr. Sang-Il Kim	Observer
68	02-06-2025	40486961	F	68	with canal stenosis	Oblique Lumbar interbody fusion	Dr. Sang-Il Kim	Observer