APSS Medtronic Fellowship Report

Duration - 28th May 2025 to 19th June 2025

Fellow

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Fellowship Center

Wakayama Medical University, Wakayama, Japan

Host

Professor Hiroshi Yamada

Professor Hiroshi Hashizume

Dr. Keiji Nagata

Introduction

From May 28 to June 19, 2025, I had the privilege of participating in the APSS-Medtronic Fellowship Program at Wakayama Medical University in Japan. Located just south of Osaka, the city of Wakayama is a serene and beautiful area known for its rich cultural heritage, including historical landmarks such as the Kumano Shrine and Kumano Kodo pilgrimage routes.

Wakayama Medical University is a renowned institution that serves the population of the broader Wakayama region and is distinguished by its long-term epidemiological research, particularly the Wakayama Cohort Study. The department of orthopedic surgery at Wakayama is especially well known for its pioneering work in minimally invasive spine surgery (MISS)—it is one of the original and most active centers in Japan for microendoscopic spine surgery, a technique that remains widely practiced to this day.

In addition to MISS, the center provides comprehensive surgical care across the full spectrum of spinal disorders, including adult spinal deformity, spinal tumors, and complex reconstructive procedures, making it an ideal environment for spine fellows to observe high-level surgical techniques and clinical management.

Program Overview

	Mon	Tue	Wed	Thu	Fri
Hospital	Wakayama University Kihoku hospital	Sumiya Hospital	Wakayama University Hospital	Wakayama University Kihoku hospital	Wakayama University Hospital

During the fellowship, I visited three different hospitals affiliated with Wakayama Medical University as part of the structured weekly rotation:

1. Wakayama University Hospital

The main teaching hospital of Wakayama Medical University with approximately 800 beds. This is the central hub for education, research, and advanced spine surgeries. A wide variety of spinal procedures, including minimally invasive surgeries, deformity correction, and tumor resection, are regularly performed here.

2. Kihoku Hospital

A 100-bed branch hospital of Wakayama Medical University, located in the northern part of Wakayama Prefecture. Despite its smaller size, it plays a key role in community-based spine care and provides valuable exposure to regional healthcare delivery.

3. Sumiya Hospital

A well-known private hospital in Wakayama, currently led by Dr. Yoshida, a former professor at Wakayama University Hospital. The hospital is renowned locally for its high-volume spine practice and is a unique setting to observe efficient and practical approaches to spine surgery in the private healthcare sector.

〈Wakayama University Hospital, Kihoku Hospital, and Sumiya Hospital〉

Daily Life and Communication

During the fellowship, I stayed at Hotel Granvia Wakayama, located next to Wakayama Station in the city center. The room was cozy and comfortable for a solo stay. Wakayama University Hospital was easily accessible—just two train stops away at Kimiidera Station, making daily commutes smooth and convenient. For visits to Kihoku Hospital, I was kindly picked up by Dr. Maeda, while Sumiya Hospital was just a 10-minute walk from the hotel.

Communication with the Japanese medical staff was smooth and efficient, primarily through the LINE messaging app. With both messaging and calling functions, there were no major barriers in daily interactions. I appreciated their proactive and friendly communication style.

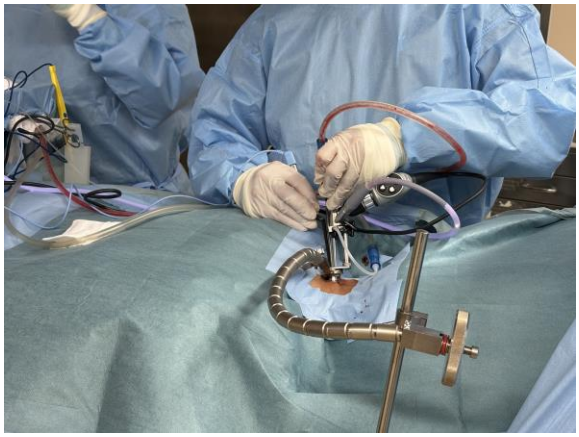

〈Hotel Granvia Wakayama, located near Wakayama station and Kimiidera station〉

Surgical Observations and Clinical Learning

Surgical technique

One of the most valuable aspects of this fellowship was the opportunity to observe and learn surgical techniques that are not yet widely adopted in Korea. Microendoscopic spine surgery, in particular, was a completely new experience for me. This minimally invasive technique involves the placement of a tubular retractor, followed by fixation of the scope to the retractor to facilitate visualization during the procedure. It minimizes injury to the muscles and surrounding structures, and can be applied not only to cervical, thoracic, and lumbar decompression, but also to lumbar interbody fusion and anterior cervical discectomy and fusion.

These procedures deepened my understanding of cervical decompression techniques, which I had rarely seen in such detail before.




〈Cervical microendoscopic surgery〉

At Kihoku Hospital, I had the chance to observe Prof. Nakagawa performing unilateral biportal endoscopy (UBE). It was an excellent opportunity to discuss the technique in depth and compare its advantages to other minimally invasive methods. Until now, I have mainly performed open-door laminoplasty, but during this fellowship, I was also exposed for the first time to French-door laminoplasty.

By observing numerous microendoscopic and UBE decompression surgeries, I was inspired to consider expanding my own surgical practice in Korea. I now feel more confident about applying UBE techniques not only in lumbar but also cervical decompression surgeries.

New Techniques and Innovations

Another notable takeaway from this fellowship was the Japanese surgeons' strong emphasis on reducing radiation exposure during spine surgery. I was particularly impressed by the integration of O-arm and C-arm-guided navigation systems into routine procedures, along with the active application of augmented reality (AR)-guided techniques. These technologies improved surgical precision while reducing radiation exposure-an approach that was both innovative and inspiring.

〈C-arm navigation and AR-guided pedicle screw fixation〉

In addition, I had the opportunity to observe and learn about several novel spinal implants and devices that are not commonly used in Korea. For instance, during French-door laminoplasty, I was introduced to a custom-designed plate developed by Prof. Nakagawa,

specifically tailored for this procedure. This specialized implant was engineered to provide reliable fixation and symmetrical expansion of the lamina, improving outcomes in selected cervical cases.

Furthermore, I encountered a vertebral body stenting system widely used in Japan, which shares functional similarities with the Spine Jack system. Observing these devices in clinical use allowed me to broaden my understanding of current implant technologies and consider how such innovations might be translated into my future surgical practice.

〈French door laminoplasty plate and vertebral body stent placement techniques〉

Academic Discussions and Research Engagement

At Wakayama University Hospital, departmental conferences were held every Wednesday and Friday, where all faculty members, residents, and fellows gathered to engage in comprehensive case discussions and academic exchanges. The open and relaxed atmosphere encouraged free exchange of ideas without hierarchy. This culture of open dialogue made it easy for everyone to propose new ideas and share concerns in a constructive manner.

On Wednesdays, in particular, the discussion often focused on ongoing research projects led by individual faculty members. The research topics covered a broad range of clinical and translational areas. Faculty members actively shared updates on their work, exchanged feedback, and brainstormed potential future studies. It was a dynamic and intellectually stimulating environment that truly reflected a commitment to academic growth.

The case discussions were also highly collaborative. Challenging patient cases were openly shared and deliberated, with group consensus often used to decide future treatment plans. I felt that this was a genuine demonstration of collective intelligence at work, where teamwork and mutual respect were central to problem-solving.

As a fellow, I was also given the opportunity to present my own ongoing research project, which allowed me to receive valuable feedback and engage in meaningful academic exchange. This experience motivated me to promote open discussion and research collaboration back in Korea.

〈Research presentation and group photo at Wakayama University Hospital〉

Human Connections and Cultural Exchange

One of the most memorable aspects of the fellowship was the genuine warmth and hospitality shown by everyone at Wakayama Medical University. Throughout the three weeks, I was treated like family. Faculty members, residents, and staff went out of their way to make me feel welcome—not only in the hospital but also outside of work. I was invited to dinner gatherings, family meals, and even enjoyed onsen visits with some of the faculty, all of which left a lasting impression.

What touched me most was being welcomed into the homes and family settings of several colleagues. These personal moments allowed for meaningful conversations, not only about spine surgery but also about life, family, and values we share beyond our professions.

Among these experiences, one that stood out was a dinner hosted by Prof. Hiroshi Hashizume, who shared that he had once visited my mentor, Prof. Kee-Yong Ha, during

his own APSS Fellowship. He fondly recalled the incredible hospitality he received in Korea, and in return, graciously treated me to a wonderful evening. In that moment, I truly felt the continuity and spirit of the APSS Fellowship, where relationships and goodwill are passed from one generation to the next.

I was also able to have honest and heartfelt conversations with many of my Japanese colleagues about the personal and professional challenges we face. Despite working in different countries, I realized that as spine surgeons, we often share the same concerns and values. This sense of mutual understanding and empathy was deeply meaningful.

This experience has inspired me to extend the same kindness and openness to future fellows who may visit Korea. I hope to pay it forward, just as I was generously welcomed during my time in Japan.

〈Official fellowship dinner and special meeting with Prof. Hiroshi Hashizume〉

Participation in the APSS-APPOS Annual Congress

I successfully presented my fellowship experience at the APSS-APPOS Annual Congress, held in Kuala Lumpur, Malaysia from June 20 to 22. In addition to the fellowship presentation, I also participated in the congress with one rapid-fire presentation and one oral presentation.

Faculty members and a fellow from Wakayama Medical University, where I completed my fellowship training, also attended the congress. I had the opportunity to meet them again, exchange greetings, and engage in meaningful discussions about our respective presentation topics.

Moreover, I had the pleasure of meeting and networking with many renowned spine

surgeons from the APSS community. Through these interactions, I was able to conclude my APSS Spine Fellowship on a very positive and memorable note.

〈Presentation of APSS Spine Fellowship experience during the APSS-APPOS Annual Congress〉

Conclusion

This APSS-Medtronic Fellowship has been a true turning point in my personal and professional journey. After five years of rigorous intern and resident training, followed by three years of fellowship, I have now been in independent clinical practice for six years. Over the past 14 years, I rarely had the chance to pause or take a meaningful break, and to be honest, I had begun to feel mentally and physically exhausted.

The recent healthcare crisis in Korea, triggered by the expansion of medical school admissions, made the situation even more challenging. During this challenging period, the fellowship offered me a rare opportunity to step back from my usual routine, meet new people, observe surgical techniques I had never encountered before, and engage in enriching conversations with experts from diverse backgrounds.

This experience not only re-energized me but also reminded me of the purpose behind my journey as a spine surgeon. It was a chance to reset, reflect, and restart with a renewed sense of purpose. Without a doubt, this fellowship will remain one of the most meaningful and unforgettable milestones in my career.

Acknowledgements

I would like to express my sincere gratitude to the Asia Pacific Spine Society (APSS) and Medtronic for providing me with this invaluable fellowship opportunity.

I am especially thankful to Dr. Keiji Nagata for his meticulous coordination throughout the fellowship and to the esteemed professors at Wakayama Medical University—Prof. Hiroshi Yamada, Prof. Hiroshi Hashizume, and Prof. Yukihiro Nakagawa—for their generous guidance and teaching. I am also grateful to Dr. Masatoshi Teraguchi and Dr. Takahiro Maeda, with whom I shared meaningful conversations and friendship as junior spine surgeons.

My thanks also go to Ms. Jennifer Matthew, the APSS Secretary, for her kind assistance in organizing this fellowship. I would like to extend my appreciation to my colleagues at the Department of Orthopedic Surgery, Eunpyeong St. Mary's Hospital, who supported my participation in this fellowship despite the ongoing healthcare crisis in Korea.

Lastly, my deepest thanks go to my family, who supported and encouraged me throughout this journey.

Spine Log Book

Date	Hospital	Surgeon	Diagnosis	Operation title
5/28	Wakayama University Hospital	Dr. Nagata	Spinal stenosis, L2-5	Microendoscopic laminotomy (MEL), L2-5
5/29	Kihoku hospital	Dr. Maeda	Deg. cervical myelopathy	French door laminoplasty, C3-7
5/29	Kihoku hospital	Pf. Nakagawa	Deg. SPLT, L4-5	Microendoscopic lumbar interbody fusion(MELIF), L4-5
5/30	Wakayama University Hospital	Dr. Tsutsui	L1 comp. fx. Multi-level stenosis	L1 balloon kyphoplasty Extreme lateral interbody fusion (XLIF), L1-5
5/30	Wakayama University Hospital	Dr. Nagata	Spinal stenosis, L3-5	MEL, L3-5
6/2	Kihoku hospital	Pf. Nakagawa	Spinal stenosis, L3-5	Unilateral biportal endoscopy (UBE) laminotomy, L3-5
6/3	Sumiya Hospital	Dr. Yoshida	Stenosis with facet cyst, L4-5	MEL, L4-5
6/3	Sumiya Hospital	Dr. Okada	Spinal stenosis, L3-5	MEL, L3-5
6/4	Wakayama University Hospital	Dr. Takami	Lumbar degenerative kyphosis	XLIF, L1-5
6/4	Wakayama University Hospital	Dr. Teraguchi	Spinal stenosis, L4-5	XLIF, L1-5
6/5	The Japanese Society of Anesthesiologists Annual Conference			
6/6	The Japanese Society of Anesthesiologists Annual Conference			
6/9	Kihoku hospital	Pf. Nakagawa	Stenosis with HNP, L4-5	UBE laminotomy & discectomy, L4-5
6/9	Kihoku hospital	Pf. Nakagawa	HNP, L5-S1, Rt.	UBE laminotomy & discectomy, L5-S1, Rt.
6/9	Kihoku hospital	Dr. Minamino	L1 compression fracture	Balloon kyphoplasty, L1

6/10	Sumiya Hospital	Dr. Yoshida	Spinal stenosis, L2-5	MEL, L2-5
6/11	Wakayama University Hospital	Dr. Nagata	Cervical spondylotic amyotrophy, C5-7	Microendoscopic ACDF, C5-7
6/11	Wakayama University Hospital	Dr. Teraguchi	Deg. SPLT, L3-5 (MEL state)	MELIF, L3-5
6/11	Wakayama University Hospital	Dr. Tsutusi	L1 burst fracture	Corpectomy & X-core, L1
6/11	Wakayama University Hospital	Dr. Teraguchi	Spondylitis, L3-4	AR-guided percutaneous fixation, L2-5
6/12	Kihoku hospital	Pf. Nakagawa	Deg. cervical myelopathy	French door laminoplasty, C4-7
6/12	Kihoku hospital	Pf. Nakagawa	Spinal stenosis, L4-5	UBE laminotomy, L4-5
6/13	Wakayama University Hospital	Dr. Teraguchi	Nonunion & screws loosening	Fusion extension, D9-D12
6/13	Wakayama University Hospital	Pf. Hashizume	Deg. cervical myelopathy	MEL, C4-6
6/16	Kihoku hospital	Pf. Nakagawa	Spinal stenosis, L3-5	UBE laminotomy, L3-5
6/16	Kihoku hospital	Pf. Nakagawa	Spinal stenosis, L4-5	UBE laminotomy, L4-5
6/17	Sumiya Hospital	Dr. Okada	Spinal stenosis, C4-6	MEL, C4-6
6/17	Sumiya Hospital	Dr. Yoshida	Spinal stenosis, L4-5	MEL, L4-5
6/18	Wakayama University Hospital	Dr. Nagata Dr. Teraguchi	Case discussion	