The 7th ISMISS combined with The 17th MISS Summit Forum

minimally invasive spine surgery

～ Next generation in endoscopic spine surgery ～

Program & Abstracts

2025.3.14 (Fri) - 3.15 (Sat)

Congress Secretariat of MISS Summit Forum

Aichi Spine Hospital

31-1, Kamiike, Goromaru, Inuyama-shi, Aichi, 484-0066, Japan

E-mail: miss@itoortho.or.jp

http://missummit.com

Welcome Message

We are pleased to announce that we will be holding the 17th MISS Summit Forum on March 14 and 15, 2025, at the Aichi Spine Hospital in Inuyama, Aichi Prefecture. Last year, as the first year of After Corona, we successfully held the long-awaited face-to-face meeting, and this year, based on that experience, we intend to deliver an even richer event.

Continuing from last year, we will invite doctors from all over the world to discuss the most advanced techniques and treatments for the advancement and popularization of MISS (Minimally Invasive Spine Surgery). This year's meeting will also be held jointly with the 7th ISMISS, sharing the latest findings in the field of MISS and providing practical information directly relevant toclinical practice.

Last year was the first time in three years that we held the meeting face-to-face, and it was an occasion overflowing with your enthusiasm and passion. We hope that this year's meeting will be even more vigorous, and we look forward to deeper discussions and more personal exchanges. We are making further efforts in preparing for the conference so that it will be a meaningful time for all of you. Thank you very much for your cooperation.

Zenya Ito

Chairman of the MISS Summit Forum
Zenya Ito, MD. PhD
(Director of Aichi Spine Hospital)

Congress Outline

Congress Name
The7th ISMISS combined with The17th MISS Summit Forum
Dates
2025.3.14(Fri)-3.15(Sat)
Venue
Aichi Spine Hospital 4F
31-1,Kamiike,Goromaru,Inuyama-shi,Aichi,480-0066,Japan
Tel:+81-568-20-9100
https://www.itoortho.jp/about/access
Honorary President
Kai-Uwe Lewandrowski
Akira Dezawa
Munehito Yoshida
President
Koichi Sairyo
Chairman
Zenya Ito
Co-Chairman
Fujio Ito
Secretariat
Aichi Spine Hospital
31-1,Kamiike,Goromaru,Inuyama-shi,Aichi,480-0066,Japan
Tel:+81-568-20-9100 / Fax:+81-568-20-9107
E-mail:miss@itoortho.or.jp / URL:http://missummit.com
Language
The official language of the congress is English.
Registration
Registration desk will be open at the following times at Aichi Spine Hospital Reception desk.
March 14,2025(Fri.)8:00-
Registration Fees (Only Cash payment in Japanese Yen is acceptable.)
Delegate: JPY 10,000
Trainee doctor,(exchange)students,nurses,and physiotherapists: JPY 1,000
Cloakroom
Cloakroom is located in the hall near the registration desk.
Mobile phones
We ask that all mobile phones be turned off or swiched to the manner mode.
Lunch
Box lunches will be served at the Luncheon Seminars.
Speaker Preview
All speakers are requested to check their presentation data at least 30 minutes before their session beginning. The operating hours start at 8:00(March,14)and 8:00(March,15).
PC which installed PowerPoint 2020 is used in the venue.
Presentation Time
The time schedule is tight. Please keep the allotted time.

Time Schedule

March 14 (Fri) 2025 Aichi Spine Hospital

Presentation Room

4F Meeting Room

	Room A	Room B
9:00	9:00-9:15 **Opening Ceremony**	
	9:15-10:00 **Special Lecture**	
10:00	**Coffee Break**	
	10:10-11:10 **Lecture A1**	10:10-11:10 **Lecture B1**
11:00	**Coffee Break**	
12:00	11:25-12:55 **Luncheon Seminar 1**	
13:00	**Coffee Break**	
	13:10-14:25 **Lecture A2**	13:10-14:25 **Lecture B2**
14:00	**Coffee Break**	**Coffee Break**
15:00	14:40-15:55 **Lecture A3**	14:40-16:15 **Lecture B3**
16:00	**Coffee Break**	
	16:10-17:25 **Lecture A4**	
17:00		
18:00		
	18:00-20:00 **Banquet Dinner Party**	
19:00		

Time Schedule

March 15 (Sat) 2025

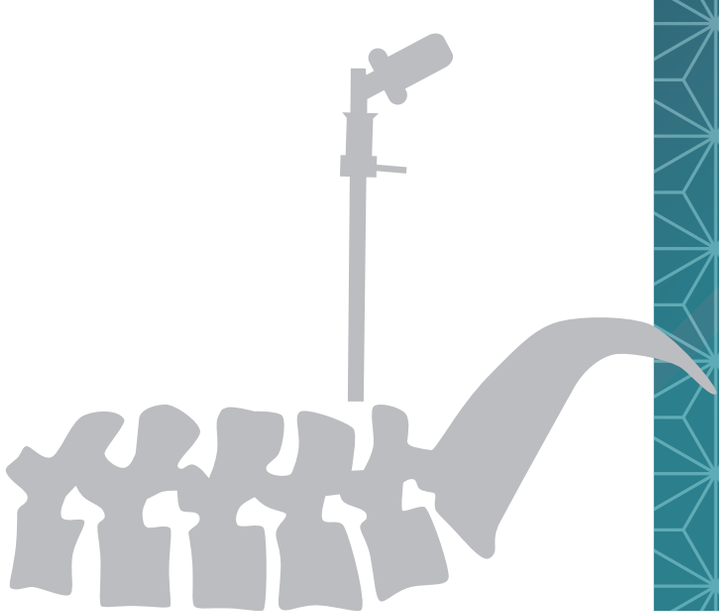
Aichi Spine Hospital

Presentation Room

4F Meeting Room

	Room A	Room B	Room C
9:00	9:00-10:10 **Lecture C1**	9:00-10:10 **Lecture D1**	9:00-10:10 **Lecture E1**
10:00	**Coffee Break**	**Coffee Break**	**Coffee Break**
	10:25-11:30 **Lecture C2**	10:25-11:25 **Lecture D2**	10:25-11:35 **Lecture E2**
11:00	**Coffee Break**	**Coffee Break**	
12:00	11:50-13:20 **Luncheon Seminar 2**		
13:00	**Coffee Break**		
14:00	13:35-14:55 **Lecture C3**		
15:00	15:00- **Closing Ceremony**		
16:00			
17:00			
18:00			
19:00			

Program



PROGRAM March 14 (Fri), 2025

ROOM A

9:00-9:15 Opening Ceremony

9:15-10:00 Special Lecture

moderator : Zenya Ito

SL 9:15-10:00
SpineGPT.
Gun Choi(Korea)

10:00-10:10 Coffee Break

10:10-11:10 Lecture A1

moderator : Tolgay Satana Kai-Uwe Lewandrowski

A1-1 10:10-10:25
INSIGHTS ON HIGH-VALUE PROCEDURES FROM THE ISASS FOUR-PART WEBINAR SERIES ON CURRENT AND EMERGING TECHNIQUES IN ENDOSCOPIC SPINE SURGERY
Kai-Uwe Lewandrowski (USA)

A1-2 10:25-10:40
Why We do not Perform Interlaminar Surgeries instead of Transforaminal Endoscopic Approach
Tolgay Satana (Turkey)

A1-3 10:40-10:55
Dural repair in spine endoscopy
Akhror Yoqubov (Uzbekistan)

A1-4 10:55-11:10
Less invasive approaches for ventral craniovertebral junction lesions performed by spinal neurosurgeons
Tatsushi Inoue (Japan)

11:10-11:25 Coffee Break

11:25-12:55 Luncheon Seminar 1

moderator : Kenyu Ito

LS1-1 11:25-12:10
Scientific strategy for the pediatric and adult lumbar spondylolysis: Basic knowledge for the MIS spine surgeons
Koichi Sairyo (Japan)

LS1-2 12:10-12:55
Comparision of Cervical Laminectomy
Son Sang Kyu (Korea)

12:55-13:10 Coffee Break

13:10-14:25 Lecture A2

moderator : Pornpavit Sriphirom Muhammad Tariq Sohail

A2-1 13:10-13:25
Percutaneous Epidural Neuroplasty(Cervical/ Lumbar) – Indication and Tips -
Gun Choi (Korea)

A2-2 13:25-13:40
en bloc butterfly flavectomy; all diamond burr and ultrasonic osteotomy technique
Woraphot Wichan (Thailand)

A2-3 13:40-13:55
Truths of Myogelosis: Extraordinary Magneto-Receptive Muscles May Cause Degenerative Spinal Deformities
Shoichi Kokubun (Japan)

A2-4 13:55-14:10
Endoscopic Management in Sciatica pain with non-spine condition(Deep Gluteal Space Syndrome)
Pornpavit Sriphirom (Thailand)

A2-5 14:10-14:25
Next Generation in Endoscopic Spine Surgery
Muhammad Tariq Sohail (Pakistan)

14:25-14:40 Coffee Break

14:40-15:55 Lecture A3

moderator : Masataka Sakane Cheol-Wung Park

A3-1 14:40-14:55
L5-S1 extra-foraminotomy by UBE
Son Sang kyu (Korea)

A3-2 14:55-15:10
Endoscopy-Assisted Cervical Arthroplasty for Cervical Myelopathy due to Disc Herniation and Spondylosis
Keng-Chang Liu (Taiwan)

A3-3 15:10-15:25
Biportal Endoscopic TLIF Using Various Types of Cages: Surgical Experience
Cheol-Wung Park (Korea)

A3-4 15:25-15:40
For next generation, Consider about the surgical training.
Yukoh Ohara (Japan)

A3-5 15:40-15:55
Surgical treatment for repeated “near miss” spinal cord spinal cord injury in elite rugby players
Masataka Sakane (Japan)

15:55-16:10 Coffee Break

16:10-17:25 Lecture A4

moderator : Ju Eun Kim Seiji Yamaya

A4-1 16:10-16:25

Navigation-assisted unilateral biportal endoscopic extra foraminal lumbar inter body fusion (UBE/BESS-ELIF)

Kenyu Ito (Japan)

A4-2 16:25-16:40

Biportal endoscopic lumbar interbody fusion with 3D printed double cage: Technical note and preliminary result

Ju Eun Kim (Korea)

A4-3 16:40-16:55

Current Status of Uniportal, Full Endoscopic, Posterior Cervical and Thoracic Approach for Degenerative Spinal Disease

Hyeun Sung Kim (Korea)

A4-4 16:55-17:10

Development of a new cage inserter (Y-slider) and trial of T-shaped double expandable cage insertion for performing UBE or full endoscopic facet-preserved transforaminal interbody fusion

Seiji Yamaya (Japan)

A4-5 17:10-17:25

Title Under Review

Chien-Min Chen (Taiwan)

ROOM B

10:10-11:10 Lecture B1

moderator : Shisheng He Yi Hung Huang

B1-1 10:10-10:25

Minimally invasive transforaminal lumbar interbody fusion by V-shape Bichannel Endoscope system, technique note and clinical results

Shisheng He (China)

B1-2 10:25-10:40

A Novel Concept in Next Generation Endoscopic Fusion Surgery: Posterior Direct Bone to Disc Approach

Yoshinori Kyoh (Japan)

B1-3 10:40-10:55

Endoscopic spine surgery. Is it the standard yet?

Benedikt Burkhardt (Switzerland)

B1-4 10:55-11:10

Preliminary clinical and radiological outcomes of uniportal endoscopic lumbar interbody fusion for degeneration lumbar scoliosis over 1 year follow-up

Yi Hung Huang (Taiwan)

13:10-14:25 Lecture B2

moderator : Kuniyoshi Tsuchiya Alfonso García

B2-1 13:10-13:25

"Full-Endoscopic Midline Foraminoplasty" an Alternative Method for treating Lumbar Foraminal Stenosis.

Saran Pairuchvej (Thailand)

B2-2 13:25-13:40

Standpoint of monoportal FESS: how to manage inconveniences and optimizing advantages of the procedure

Kuniyoshi Tsuchiya (Japan)

B2-3 13:40-13:55

Benefit of full endoscopic in revision spine surgery

Matee Phakawech (Thailand)

B2-4 13:55-14:10

SCOT for Inferiorly Migrated Disc Herniation

Byapak Paudel (Nepal)

B2-5 14:10-14:25

The development of endoscopic surgery in México

Alfonso García (Mexico)

14:25-14:40 Coffee Break

14:40-16:15 Lecture B3

moderator : Yuichi Kondo Cigdem Mumcu

B3-1 14:40-14:55

Clinical Outcomes of Unilateral Biportal Endoscopic posterior lumbar foraminotomy for lumbar foraminal stenosis.

Yuichi Kondo (Japan)

B3-2 14:55-15:10

A Novel Surgical Approach for Hidden-Zone Lumbar Disc Herniation: Contralateral Interlaminar Access via Unilateral Biportal Endoscopy

Cigdem Mumcu (Turkey)

B3-3 15:10-15:25

Biportal Endoscopic Transforaminal Lumbar Interbody Fusion Using Double Cages

Jwo-Luen Pao (Taiwan)

B3-4 15:25-15:40

Title Under Review

Tomoaki Toyone (Japan)

B3-5 15:40-15:55

Title Under Review

Byeong cheol Rim (korea)

B3-6 15:55-16:05

Contralateral Approach via Rostral Laminotomy (CARL): A Novel Technique in Unilateral Biportal Endoscopy for Treating Highly Migrated HIVD

Lee Cheng Ying (Taiwan)

B3-7 16:05-16:15

Surgical Treatment of Intradural Lesions Using UBE

Seongjoo Lee (Korea)

PROGRAM March 15 (Sat), 2025

ROOM A

9:00-10:10 Lecture C1

moderator :Wataru Narita Kenyu Ito

C1-1 9:00-9:15
Surgical skill qualification system and nationwide survey on complications of endoscopic spine surgery in Japan
Akira Dezawa (Japan)

C1-2 9:15-9:30
Educational Value of the Exoscope in Posterior Cervical Fixation
Akira Itoi (Japan)

C1-3 9:30-9:45
Title Under Review
Ayhan Cömert (Turkey)

C1-4 9:45-10:00
Pioneering XR Solutions for Spinal Procedures: AppleVisionPro Adoption and Sustained Growth
Wataru Narita (Japan)

C1-5 10:00-10:10
Navigation assisted full endoscopic spine surgery: Design, Workflow, and Clinical Application
Yasushi Shin (Japan)

10:10-10:25 Coffee Break

10:25-11:30 Lecture C2

moderator : Kei Miyamoto Hideki Murakami

C2-1 10:25-10:40
Surgical techniques of total en bloc spondylectomy (TES) by single posterior approach
Hideki Murakami (Japan)

C2-2 10:40-10:55
Minimal Invasive Spinal (MIS) Techniques for Vertebral Body Compression Fractures
Farnad Imani (India)

C2-3 10:55-11:10
Tran-Sacral Canal Plasty (TSCP) for Symptomatic Lumbar Spinal Canal Stenosis
Kei Miyamoto (Japan)

C2-4 11:10-11:20
Unilateral Biportal Endoscopy for Revision Decompression Surgery in Lumbar Canal Stenosis
Kazuhiro Yoshimura (Japan)

C2-5 11:20-11:30
Transforaminal Percutaneous Endoscopic Foraminoplasty and decompression for Symptomatic Contralateral Foraminal Stenosis after lumbar interbody fusion
Xi Chen (China)

11:30-11:50 Coffee Break

11:50-13:20 Luncheon Seminar 2

moderator : LS2-1 Zenya ito LS2-2 Motohide Shibayama

LS2-1 11:50-12:35
Minimally Invasive Spinal Treatment (MIST) for spinal disorders -Focusing on new technologies-
Ken Ishii (Japan)

LS2-2 12:35-13:20
Current progress and Future Directions of Cervical Endoscopic Spine Surgery.
Kang Taek Lim (Korea)

13:20-13:35 Coffee Break

13:35-14:55 Lecture C3

moderator : Yoshinori Kyoh Nobuyuki Shimokawa

C3-1 13:35-13:50
Surgical procedure for perineural cyst
Nobuyuki Shimokawa (Japan)

C3-2 13:50-14:05
Revision Endoscopic spine surgery
Bhupesh Patel (India)

C3-3 14:05-14:20
Prone Full Endoscopic Lateral Lumbar Interbody Fusion: Principles and Practice
Yoshinori Kyoh (Japan)

C3-4 14:20-14:30
Dynamic Recognition of structure in Spinal Endoscopic Surgery Using Deep Learning
Yi Jiang (China)

C3-5 14:30-14:45
Title Under Review
Tunç Koç (Turkey)

C3-6 14:45-14:55
The application of computed tomography perfusion and preoperative embolization for reducing intraoperative blood loss in the separation surgery of thoracolumbar metastases
Jian Zhou (China)

15:00- Closing Ceremony

ROOM B

9:00-10:10 Lecture D1

moderator : Man kyu Park Christian Morgenstern

D1-1 9:00-9:15
Next generation techniques in endoscopic/percutaneous cervical (eACDF) and lumbar fusion (pTLIF) surgery
Christian Morgenstern (Spain)

D1-2 9:15-9:30
Endoscopic cervical open-door laminoplasty - case report and literature review –
Shu Nakamura (Japan)

D1-3 9:30-9:45
Thoracic UBE
Man kyu, Park (Korea)

D1-4 9:45-10:00
Title Under Review
Abdullah Merter (Turkey)

D1-5 10:00-10:10
Bilateral contralateral laminoplasty using unilateral biportal endocopic spine surgery for upper lumbar levels
Takaki Yoshimizu (Japan)

10:10-10:25 Coffee Break

10:25-11:25 Lecture D2

moderator : Jun Ho Lee Aloysius Bambang Darwono

D2-1 10:25-10:40
Endoscopic techniques for multilevel spine Degeneration Do we need fusion ?
Aloysius Bambang Darwono (Indonesia)

D2-2 10:40-10:55
IS THERE A SOLUTION FOR POST-OPERATIVE INSUFFICIENCY in UBE? : YES
Tarik Yazar (Turkey)

D2-3 10:55-11:10
Biomechanical effect predictions after the diverse endoscopic decompression; the summarized results from the recent publications
Jun Ho Lee (Korea)

D2-4 11:10-11:25
Age-Related Impact of Uniportal versus Biportal Surgery on Postoperative Multifidus Muscle Atrophy and Fat Infiltration
GuangHua Li (Japan)

ROOM C

9:00-10:10 Lecture E1

moderator : Motohide Shibayama Jin Hwa Eum

E1-1 9:00-9:15
Anterior transvertebral key-hole herniotomy: Advantage and Technical Tips
Motohide Shibayama (Japan)

E1-2 9:15-9:30
How should MEL, UBE, and FESS be used for cervical and lumbar spinal canal stenosis, foraminal stenosis, and herniated disc?
Zenya Ito (Japan)

E1-3 9:30-9:45
Efficacy of Modified Full Endoscopic Spine Surgery(FESS) with Standard Instruments
Jin Hwa Eum (Korea)

E1-4 9:45-10:00
Percutaneous Endoscopic Transforaminal Discectomy (PETD) via Parasternum Intercostal Approach for Cervicothoracic OPLL Resection
Sumito Shimizu (Japan)

E1-5 10:00-10:10
Dural Pain: A Forgotten Concept and a New Therapeutic Target with TF-FESS
Masaki Yoshimura (Japan)

10:10-10:25 Coffee Break

10:25-11:35 Lecture E2

moderator : Kazuhiko Fujita Hidetomi Terai

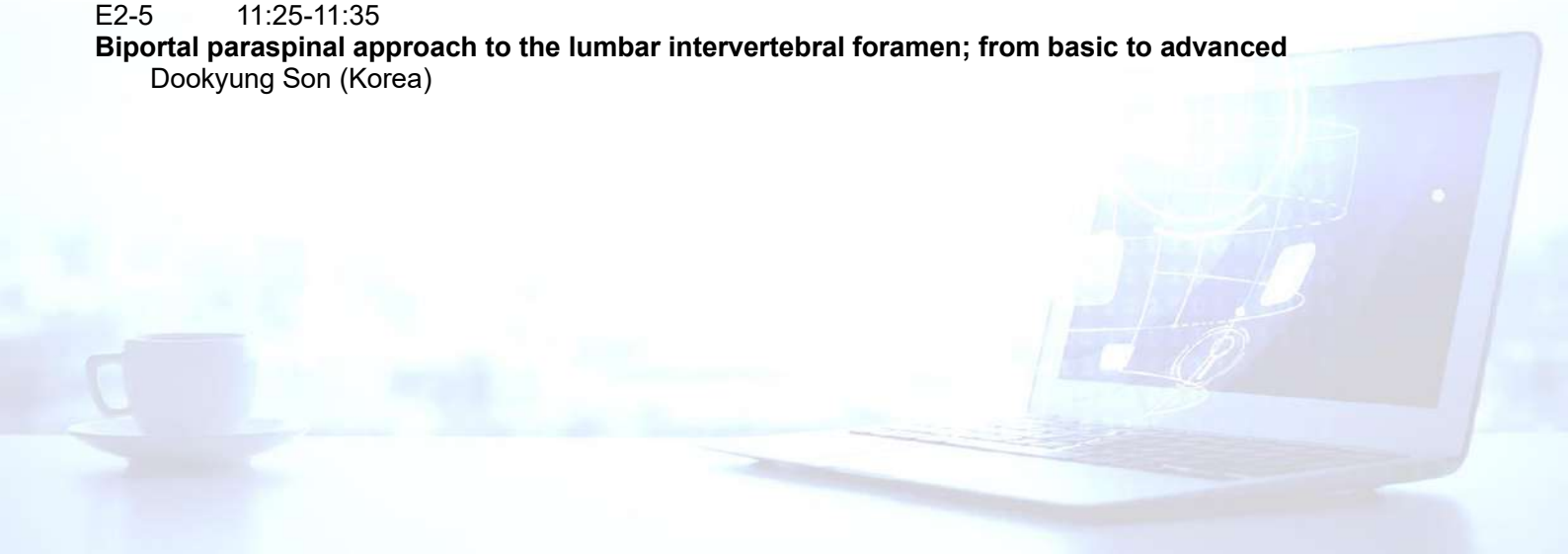
E2-1 10:25-10:40
Optimal Perfusion Pressure in UBE/BESS
Kanji Sasaki (Japan)

E2-2 10:40-10:55
Short-term results of UBEL (Unilateral Biportal Endoscopic Laminectomy) for lumbar spinal canal stenosis
Kazuhiko Fujita (Japan)

E2-3 10:55-11:10
Seeing perspective on the future of Endoscopic Spine Surgery
Han Ga Wi Nam (korea)

E2-4 11:10-11:25
Decompression of Foraminal stenosis using UBE/BESS
Hidetomi Terai (Japan)

E2-5 11:25-11:35
Biportal paraspinal approach to the lumbar intervertebral foramen; from basic to advanced
Dookyung Son (Korea)



Abstracts

SpineGPT

Gun Choi

Chairman & President of Pohang Woori Spine Hospital

Spinal disorders are a prevalent health concern affecting individuals due to various causes, including aging, injuries, and lifestyle factors. However, timely diagnosis and access to specialized medical professionals remain challenging for many patients. To address this issue, we propose an AI-driven approach using a Large Language Model (LLM) specifically designed for spinal diseases diagnosis and management.

Our solution is developed to serve both general users and medical professionals. For patients, it provides accessible information on spinal disorders, self-diagnosis guidance based on symptoms, and basic healthcare recommendations, including posture and exercise suggestions. For medical professionals, Spine AI (Professional) offers an advanced diagnostic tool capable of analyzing patient charts, medical imaging (X-ray, CT, MRI), and clinical history to assist in disease prediction and treatment planning.

The proposed model integrates multimodal learning techniques, leveraging text and image inputs to enhance diagnostic accuracy while minimizing AI hallucinations. Through collaboration with expert knowledge sources, our system ensures reliable and evidence-based insights. Future developments will focus on refining clinical data integration, improving interpretability, and expanding the model's applications within spinal healthcare.

This study highlights the potential of AI-driven solutions in bridging the gap between patients and healthcare providers, ultimately improving early detection, diagnosis, and management of spinal disorders.

Education and Professional Work

Honors and Awards
The Best Paper Award, IITS 2007
Hijikata Award, WCMISST 2008
Foremost Scientists of the World International Biographical Centre Cambridge, England 2008
Professional Memberships
President of World Congress of Minimally Invasive Spine Surgery and Techniques
President of International Intradiscal Therapy Society
Executive Director of Korean Minimally Invasive Spinal Surgery
Executive Director of Asia Congress of Minimally Invasive Spinal Surgery
Chief Director of Korea society of Interventional Muscle and Soft Tissue Stimulation Therapy
Vice president of Korea Medical Service Society
Directors of Board of Korean Neurological Spinal Surgery
Member of World Federation of Neurosurgical Societies(WFNS) Spine Committee
Member of Korean Neurosurgical Society
Member of International Musculoskeletal Laser Society
Member of International Intradiscal Therapy Society
Member of the International Society of Minimally Invasive Spinal Surgery
Member of American Board of Minimally Invasive Spinal surgery and Medical Science

INSIGHTS ON HIGH-VALUE PROCEDURES FROM THE ISASS FOUR-PART WEBINAR SERIES ON CURRENT AND EMERGING TECHNIQUES IN ENDOSCOPIC SPINE SURGERY

Kai-Uwe Lewandrowski

Staff Surgeon, Owner, Center for Advanced Spine Care of Southern Arizona

Background: A webinar series was conducted a comprehensive review and integration of insights to arrive at recommendations for best clinical practices for guideline development for endoscopic spine surgery. The authors discuss the limitations of traditional surgical trials and amalgamates surgeons' experience and research on various cutting-edge endoscopic techniques.
Methods: Data were extracted from surveys conducted during each webinar session involving 3,639 surgeons globally. The polytomous Rasch model was employed to analyze responses, ensuring a robust statistical assessment of surgeon endorsements and educational impacts and focusing on operative nuances and experience-based outcomes. Bias detection was performed with the differential item functioning test.
Results: The webinars reached 3639 spine surgeons globally and provided a dynamic platform for discussing advances in endoscopic spine surgery, identifying a range of high-value procedures from basic discectomies to complex lumbar interbody fusions. Each high-value endoscopic spine surgery was highlighted in separate peer-reviewed publications, which form the basis for this summary document that synthesizes key takeaways from these webinars. High-value clinical applications of endoscopic spine surgery, primarily defined as higher-intensity endorsement transformation from the pre- to the post-webinar survey with a shift to higher mean logit locations of test items both with unbiased and orderly threshold progression, were: a) Percutaneous interlaminar endoscopic decompression for lateral canal stenosis, b) Transforaminal debridement of low-grade degenerative spondylolisthesis, c) Transforaminal full-endoscopic interbody fusion for hard disc herniation, d) Endoscopic standalone lumbar interbody fusion, e) Endoscopic debridement of spondylolytic spondylolisthesis, and f) Posterior cervical foraminotomy for herniated disc and bony stenosis
Conclusions: The webinar series has significantly impacted surgeons' education and contributed to the identification of high-value endoscopic spine surgery practices that may serve as a cornerstone for surgeon training standards, policy and guidelines development. Ongoing research on technological advancements and expansions of clinical indications combined with systematic review is expected to refine the recommendations on high-value endoscopic spinal surgeries recommended for enhanced reimbursement.

Education and Professional Work

BOARD STATUS:
The American Board of Orthopaedic Surgery, 2009, recertified 2018
The American Board of Spinal Surgery, 2009
LICENSURE:
State of Arizona(active)
State of New Mexico(active)
Licensed to Practice Medicine in Germany (Approbation als Arzt-(active)
MEMBERSHIP & LEADERSHIP POSITIONS:
American Academy of Orthopaedic Surgeons (AAOS)
Orthopaedic Research Society (ORS)
North American Spine Society (NASS)
International Society for the Advancement of Spine Surgery (ISASS)
President Sociedad Interamericana de Cirugía de Columna Mínimamente Invasiva (SICCMI)
International Intradiscal Therapy Society (IITS)
World Congress Minimally Invasive Spine Surgery and Techniques (WCMISST)
Full Professor, Department of Orthopaedic Surgery, Universidad Colsanitas, Bogota, Colombia
Visiting Professor, Department of Orthopaedic Surgery, UniRio, Universidade do Estado Rio de Janeiro, Brazil
AWARDS:
1. Young Investigators Award of the European Society for Surgical Research. Osteoinduction in cortical bone grafts by controlled demineralization and laser-perforation. Lewandrowski KU, Tomford WW, Mankin HJ, Schollmeier G, Ekkernkamp A, Muhr G. Southampton, UK, March 31 - April 3, 1996.
2. Osteotech/OREF Award for Excellence in Bone Allograft Research. Modification of Cortical Bone Allografts by Partial Demineralization and Laser-Perforation to Enhance Incorporation. A Histologic, Biomechanical, and Immunological Study. Lewandrowski, KU, Schollmeier, G, Ekkernkamp A, Uhthoff HK, Mankin HJ, Tomford WW. AAOS Anaheim, 1999.
3. Titulo de Membro Correspondente Internacional da Academia Brasileira de Medicina Militar, pela distinção e pelos bons serviços prestados.
4. 75th Anniversary Service Medal of the Brazilian Military Medical Academy, pela distinção e pelos bons serviços prestados.
5. Orden al merito SILACO en el grado de Caballero - Order of merit “Knight” of SILACO (Sociedad Iberolatinoamericana de Columna), Santiago de Chile, November 9, 2017.
6. doctor honoris causa (Dr. h.c.) Department of Neurosurgery, UniRio, Universidade do Estado Rio de Janeiro, Brazil
7. Foreign Corresponding Member of the National Academy of Medicine of Colombia (Academia de Medicina de Colombia). Approved during administrative session of the academy on July 28, 2022 in Bogota, Colombia.
8. Foreign Corresponding Member of the National Academy of Medicine of Brazil (Academia de Medicina do Brazil). Approved during administrative session of the academy on December 4, 2023 in Rio de Janeiro, Brazil.

Why We do not Perform Interlaminar Surgeries instead of Transforaminal Endoscopic Approach

Tolgay Satana

Dr Tolgay Satana Miminal Invasive Spine and Arthroscopy&Arthroplasty

We should thing about How we could preserve architecture and how could we stop to degeneration process with surgical treatment. The reality is with increasing age, as growth and skeletal maturation proceed also disc degeneration process related injuries due to abnormal loads mal might be genetic predisposition. The riight direction of spinal care is to protect mechanical alignment and keep physiologic status of spine ab-nd that is leading of the idea of minimal invasive spine surgery.
In the definition of minimally invasive surgery; We talked about percutaneous, minimal tissue damage, use of anatomical spaces and bleeding not exceeding 5cc. Since it is quite obvious that this surgery cannot be performed without an endoscope, we have mentioned the drawbacks of using a microscope is not possible to part of miss. We have mentioned that as the cases of Failed Back Surgery increase, the problem arises from entering from the interlaminar region and the importance of not being able to correct the missed foraminal stenosis. Recently, unilateral biportal endoscopic surgery has been included in minimally invasive surgery, causing serious confusion. Because in reality, despite the fact that a less invasive method creates serious intermediary trauma and high-temperature Radiofrequency probes and crude surgical instruments, being considered minimally invasive did not reduce the number of subsequent failed back surgery patients. However, if it was considered a minimally invasive surgery, it caused FBSS and miss to be mentioned in the same sentence. I emphasize the importance of labeling UBE surgery as Less invasive surgery in solving this situation. In addition, the development of Transforaminal surgery equipment and the focus of minimally invasive surgeons on this method will make it easier for us to create the surgery of the future.

Education and Professional Work

Orthopedic and Trauma Surgeon
Born Ankara 1968
Graduated University of Ankara Faculty of Medicine 1991
Orthopedic Surgery Trainning completed in University of Gazi Ankara 1997
Military Service and war surgery experience 1 year 1998
Spinal Fellowship in University of Michigan 1999-2000
Specialised on Deformity spine surgery since 2000 and interested beside Artroscopic surgery
Private practicing since 2003 well known spine surgeon and arthroscopist in Turkey
Executive Member of IMLAS since 2000
Secretary of IMLAS Istanbul 2005
Guest Editor in Turkish Journal of Joint Surgery
Active member of Bone and Joint Turkey Osteoporosis and Osteoarthritis congress responsible of Spine section for 9 years.
Member of Turkish Spine Society
Member of Turkish Ortopedic society
Board member of ISMISS and national representative of Turkey since 2005
Chairman of Turkish Chapter of ISLASS
WALA board member
Founder and President of Turkish MISS
Founder and Coordinator of ISMISS Turkey 2003-14
President of World Federationmiss Congress in Istanbul snd board member
Board member MissSummit since 2009
Tolgay Satana is doing private Practice in Istanbul
He has numeorous lectures' articles, editor of books about MISS.

Dural repair in spine endoscopy

Akhror Yoqubov

Head Neurosurgeon Hospital, Tashkent City, Uzbekistan

I am Endoscopic spine surgeon, I work at private hospital in Tashkent city, Uzbekistan
I want to share my experience to young surgeons that who wants to start or just beginners.
Endoscopic spine surgery is new evolution, without endoscopic surgery we can not able to see our future life.
Since I started till now I have done more 3000 cases for four years that why I should share my experiences.

Education and Professional Work

Work History 2015.9-Current
Head Neurosurgeon Hospital, Tashkent City, Uzbekistan
- Worked closely with nursing staff to create a supportive and efficient environment in the operating room.
- Established protocols for post-operative care, minimizing complications and improving recovery times for patients.
- Evaluated new surgical equipment options, investing in cutting-edge technology that improved surgical outcomes.
- Led a dedicated team of neurosurgeons, providing guidance and mentorship to improve overall performance.

Education
Associate of Science: Skullbase Skills 2018-12
Eberhard Karls University of Tubingen – Tubingen City, Germany
Master of Science: Neurosurgery Science 2017-08
Republic Emergency Center - Tashkent City, Uzbekistan
Bachelor of Science: Treatment 2014-06
Tashkent Medical Academy - Tashkent City,Uzbekistan
High School Diploma 2006-06
65-school - Shakhrisabz District, Uzbekistan

Less invasive approaches for ventral craniovertebral junction lesions performed by spinal neurosurgeons

Tatsushi Inoue

Department of Neurosurgery, Fujita Health University

Craniovertebral junction (CVJ) lesions, especially in the ventral location, are challenging to approach, for which the posterolateral approach (PLA), typically the transcondylar approach, is adopted. However, in truly medially located intradural huge lesions, the lateral approach (LA) is less invasive than PLA because there is no need for rotation or retraction of the spinal cord in the LA. The essential point of LA is the evaluation of bone work completion and perspective orientation prior to durotomy and tumor resection. In addition, the usefulness of intraoperative real-time near-infrared fluorescence with indocyanine green (ICG) for evaluation is demonstrated on the video.
For extradural ventral lesions, the endoscopic anterior approach is more useful than microscope, making it possible to access the digit lesion extensively. Our endoscopic setup and procedures for the ventral extradural CVJ region are shown in the video with special reference to the combined transnasal and transoral approach.

Education and Professional Work

EDUCATION:
Hiroshima University, School of Medicine Hiroshima 1984-1990: M.D.
Hiroshima University, Graduate School of Medicine (Neurosurgery) Hiroshima
1993-1998: Ph.D. in Medicine
Research fellow 1994-1995
Department of Integrative Brain Science, Graduate School of Medicine, Kyoto University
Clinical fellow 2001
Carolina Neuroscience Institute NC, US
ACADEMIC APPOINTMENTS:
1991-1992 Staff Neurosurgeon
Department of Nfeurosurgery Kita-kyusyu General Hospital Kokura, Japan
1998-2001 Assistant Professor
Department of Neurosurgery Hiroshima University Hiroshima, Japan
2002-2006 Assistant Professor
Department of Neurosurgery Aichi Medical University Aichi, Japan
2007-2017 Assistant Professor
Department of Neurosurgery Fujita Health University Aichi, Japan
2018-Apr 2025 Associate Professor
Department of Neurosurgery and Department of Spine and Spinal Cord Surgery Fujita Health University
Aichi, Japan
May 2025-present Professor
Department of NeurosurgeryFujita Health University Aichi, Japan
MEMBERS IN PROFESSIONAL SOCIETIES:
Japan Neurosurgical Society
Japan Congress of Neurological Surgeons
The Japanese Society of Spine Surgery
Japanese Congress on Surgery for Cerebral Stroke
Congress of Neurological Surgeons (US)
American Association of Neurological Surgeons
American Association of Neurological Surgeons Spine Section
MAIN RESEARCH INTEREST:
Minimally Invasive Spinal Surgery
Skull Base Surgery

Scientific strategy for the pediatric and adult lumbar spondylolysis: Basic knowledge for the MIS spine surgeons

Koichi Sairyo

Professor and Chairman, Department of Orthopedics, Tokushima University, Tokushima, Japan

Introduction: Spondylolysis would occur in the pediatric population. The pathology and pain generator would be changing during the life time. Spine surgeons should understand the pathology causing symptoms in the spondylolysis precisely, and less invasive treatment in concluding conservative and surgical method should be appropriately selected.

Pediatric patients:

Based on the CT stage; i.e.. early, progressive and terminal, the goal for the treatment would be decided (1). For the early (stress fracture) and progressive (fracture) stage, since there is a chance to obtain bony healing, bony union with bracing is a goal. It may take 3 to 6 months for stopping sport activity (2). The defects in the terminal (pseudoarthritis) stage has no chance to have bony healing, pain management with soft brace and rehabilitation is the goal. When the defects cause persisting pain, direct repair surgery is considered. For the progressive stage, screwing without bone grafting is enough. We use robotic arm system, and screwing of the defects is conducted percutaneously (3). Terminal stage painful defects require direct repair with bone graft. We proposed MIS repair surgery with percutaneous pedicle screw (PPS) system (4). Recently we started use U-shape stabilization rod with PPS, and we named it as Smiley Face Rod Method (5).

Adult patients:

Basically, spondylolysis without slippage would be asymptomatic. If synovitis is combined in the defects, it may cause low back pain (6). For the painful defects, Smiley face rod direct repair surgery is effective. When slippage is combined with the pars defects, variety of the pathology would be appeared such as foraminal stenosis, disc degeneration, type 1 Modic change and so on. The gold standard would be spinal fusion. Recently, minimally invasive spinal fusion with full-endoscope is established. Full-endoscopic trans-Kambin lumbar interbody fusion (KLIF) would be one option (7). Very recently, full-endoscopic foraminal decompression for the stable isthmic spondylolisthesis is proposed, the we named crisscross decompression surgery (8). It is very effective the treat radiculopathy caused by foraminal stenosis without low back pain.

Conclusion: The pathology is totally different between pediatric and adult population even though the diagnosis is the same as the lumbar spondylolysis. The spine surgeons should treat the patients with spondylolysis based on the pathology.

Education and Professional Work

1988: MD degree, Tokushima University School of Medicine
1994: PhD degree, Tokushima University Graduate School of Medical Sciences
1995-1997: Post Dr. follow, University of Iowa, Iowa, USA
1998: Assistant Professor, Tokushima University Hospital
1999: Associate Professor, Tokushima University School of Medicine
2003-2005: Post Dr. follow, University of Toledo, Ohio, USA
2010: Associate Professor, Teikyo University Mizonokuchi Hospital
2013- present: Professor and Chairman, Tokushima University

International Society

International Society for Study of the Lumbar Spine: ISSLS (active member)
International Society for the advancement of the spine surgery: ISASS (member)
International Society of Endoscopic Spine Surgery: ISESS (Board member candidate)
International Intradiscal Therapy Society: IITS (Congress President 2021)
International Society for Minimal Intervention in Spinal Surgery: ISMISS (Asia representative)
Asian Congress Minimally Invasive Spine Surgery :ACMISST (Board member, Japan representative)
Pacific Asian Society for Minimally Invasive Spine Surgery: PASMISS (Board member)
World Congress Minimally Invasive Spine Surgery :WCMISST (Congress President 2021)

Japanese Society

Japanese Orthopaedic Association JOA (Board member)
Japanese Society for Spine Surgery and Related Research: JSSR (Board member)
Japanese Orthopaedic Society for Sports Medicine: JOSSM
(CONGRESS PRESIDENT 2018)
Japanese Society of the Minimally Invasive Spine Surgery: JASMISS
(Society chairman since 2020, CONGRESS PRESIDENT 2019)
Japanese Society of the full-endoscopic trans-Kambin lumbar Interbody Fusion: JEKLIF
(Society Chairman since 2020, CONGRESS PRESIDENT 2020&2022)
Japanese Society of Low Back Pain
(Board member, CONGRESS PRESIDENT 2023)
Japanese Society of Sport Spine: JSSS
(Society Co-Chairman since 2024, Co-CONGRESS PRESIDENT 2024)

Comparision of Cervical Laminectomy

Son Sang kyu

General Director, Good Munhwa Hospital in Busan, Korea

Abstract Under Preparation

Education and Professional Work

Education
1989-1995 Kyungbuk National Medical School
Internship and residency
1995-1996 Kyungbuk National University Hospital (Internship)
1996-1998 Military service
1999-2003 Kyungbuk National University Hospital (Residency)
License
Neuro Surgeon, Korean National Board of Neurosurgery
Membership
The Korean Neurosurgical Society
The Korean Spinal Neurosurgery Society
International Society for Minimal Intervention in Spinal Surgery (ISMISS)
Korean Society for the Advancement of Spine Surgery (KOSASS)
Korean Musculoskeletal Laser & Radiofrequency Society
International High-Tech Spine Society (HTSS)
Korean Minimally Invasive Spine Surgery Research Society (KOMISS)
Korean Society of Endoscopic Spine Surgery (KOSESS)

Percutaneous Epidural Neuroplasty(Cervical/ Lumbar) – Indication and Tips -

Gun Choi

Chairman & President of Pohang Woori Spine Hospital

Degenerative changes and postsurgical alterations in the spine's ventral and lateral epidural spaces can lead to significant irritation of nerve roots and surrounding structures, including the peridural membrane and the posterior longitudinal ligament. These pathological changes, often accompanied by mild scarring, contribute to chronic pain and functional impairment.

Percutaneous epidural neuroplasty (PEN) is a minimally invasive procedure designed to relieve neural irritation through the targeted placement of a spring-wound catheter. By employing a combination of hydrostatic and mechanical forces, the procedure effectively disrupts adhesions, reduces inflammation, and alleviates nerve irritation. This technique can improve mobility and significantly enhance the quality of life for patients with refractory cervical and lumbar pain syndromes.

Our institute underwent 3447 cases of PEN (633 cases of Cervical PEN, 2814 cases of lumbar PEN) and had remarkable results. In this lecture we will share a case series of patients who underwent Cervical/Lumbar PEN, highlighting clinical indications, procedural techniques, outcomes, and the role of this innovative procedure in managing complex cervical spine disorders. Attendees will be able to get a comprehensive understanding of Cervical/Lumbar PEN as an effective and less invasive alternative to traditional surgical interventions.

Education and Professional Work

Honors and Awards
The Best Paper Award, IITS 2007
Hijikata Award, WCMISST 2008
Foremost Scientists of the World International Biographical Centre Cambridge, England 2008

Professional Memberships
President of World Congress of Minimally Invasive Spine Surgery and Techniques
President of International Intradiscal Therapy Society
Executive Director of Korean Minimally Invasive Spinal Surgery
Executive Director of Asia Congress of Minimally Invasive Spinal Surgery
Chief Director of Korea society of Interventional Muscle and Soft Tissue Stimulation Therapy
Vice president of Korea Medical Service Society
Directors of Board of Korean Neurological Spinal Surgery
Member of World Federation of Neurosurgical Societies(WFNS) Spine Committee
Member of Korean Neurosurgical Society
Member of International Musculoskeletal Laser Society
Member of International Intradiscal Therapy Society
Member of the International Society of Minimally Invasive Spinal Surgery
Member of American Board of Minimally Invasive Spinal surgery and Medical Science

en bloc butterfly flavectomy; all diamond burr and ultrasonic osteotomy technique

Woraphot Wichan

Thabo Crown Prince Hospital

Background
Nowadays endoscopic spine surgery is popular among spine surgeons and one of the most disease can be treated with this method is spinal stenosis , with many techniques like uniportal, UBE and hybrid styles, also can use different instruments to comfort surgeons to perform surgery easier,faster and safer.

Content
This presentation will show many techniques for flavectomy and laminotomy .
How to select patients ,preoperative planning and what instruments do we have.
The difference of instruments using in Uniportal,UBE and hybrid styles for laminotomy and butterfly flavectomy like many types of burr, punches, chisels and other devices like ultrasonic blade.
How to do butterfly flavectomy , hemi-butterfly or piece by piece technique, which one is safer and easier.
Obstacle when using ultrasonic blade for osteotomy , it needs proper design for improved performance.

Conclusion
Patients selection and preoperative planning is the key to success.
Surgical technique is individual ,depends on surgeon preference ,instrument availability.
New instruments and techniques are important for making safer and easier procedures . Ultrasonic osteotomy instruments are available for Uniportal and UBE now.
Butterfly en bloc flavectomy is good option but not matter, it can be hemi-butterfly or piece by piece, depends on situation.

Education and Professional Work

EDUCATION
Khon Kaen University
1998 Doctor of Medicine, Faculty of Medicine
Khon Kaen University
2004 Diplomat Board of Orthopedics, Faculty of Medicine, Khon Kaen Hosiptal
SPECIAL INTERESTS:
Endoscopic Spinal Surgery
Complex Spinal Surgery
Cervical and Lumbar
Pathologies Spinal Trauma
WORK EXPERIENCE
Largest Regional Hospital, Khon Kaen Hospital
2004-2009
Specialty Doctor for Complex Orthopedics and Spine Surgery
Thabo Crown Prince Hospital
2009-Present
Head of Orthopedics Department

Truths of Myogelosis: Extraordinary Magneto-Receptive Muscles May Cause Degenerative Spinal Deformities

Shoichi Kokubun

Professor Emeritus, Tohoku University, Sendai, Japan

The human body has the skin-to-muscle reflex in addition to the muscle-to-muscle reflex, for regulation of the muscle tone at rest and the pain sensitivity of the muscle itself and the skin area inherent to it. The skin areas receive static electricity or magnetism and send an input to the neural center and generate static electricity and/or magnetism responding to an output. A high muscle tone, myogelosis, as a result of the reflex, makes the muscle and its skin area painful and leads to a specific muscle contracture and joint deformity. Muscles are divided into two types: K Point Group muscles and independent muscles numbering 45 and 51, respectively. The K Point Group muscles are further divided into two types: electro-receptive and magneto-receptive muscles numbering 23 and 22, respectively. The independent muscles numbering 51 are ordinally static electro-receptive. Because of an individual difference, the mechanism of which is unknown, some K Point Group muscles and independent muscles, which should be electro-receptive, are found magneto-receptive. They may cause a variety of orthopaedic disorders reacting to the N-Pole magnetism. Regarding the spine, for example, the obliquus externus abdominis in the K Point Group muscles causes low back pain and may cause degenerative lumbar scoliosis. Among independent muscles, the SM head of the sternocleidomastoid and the trapezius may jointly cause drop head. The rectus abdominis may cause degenerative lumbar kyphosis, and the obliquus externus abdominis or the quadratus lumborum, degenerative lumbar scoliosis. This talk also describes how to prevent progression of deformities.

Education and Professional Work

Dr. Kokubun is Director of the Research Center for Spine and Spinal Cord Disorders at the NHO Sendai Nishitaga Hospital in Sendai. He stayed at the University of Hong Kong in 1974 and at the University of Oxford in 1992. He was Professor and Chairman of the Department of Orthopaedic Surgery, Tohoku University School of Medicine in Sendai from 1995 to 2006.

His major research and clinical activities before retirement from the Tohoku University were neurology and surgery for cervical myelopathy and spine shortening osteotomy. He first in the world proposed neurological indices for level diagnostic of cervical myelopathy in 1984 and the cartilaginous endplate type of cervical disc herniation in 1996. He first in Japan excised a hemivertebra in 1977 and in the world shortened the spine for a tethered cord due to lipomyelomeningocele in 1995. On the other hand, for the last 16 years after the retirement, he has been concentrating on discovering secrets of pain from muscles as nonspecific pain.

Internationally, the 2nd Triennial Congress of the International Federation of Paediatric Orthopaedic Societies (IFPOS) was a great success under his presidency in Sendai in 2001. He was National Delegate to SICOT (1999-2005), Chief National Delegate to the Asia-Pacific Orthopaedic Association (APOA) (2001-2006), Chairman of the Spine Section, APOA (2005-2008) and President of APOA (2021-2022).

At home, as Congress President, he held the Annual Congress of the Japanese Orthopaedic Association in 2004 and the Annual Meeting of the Japanese Spine Research Society in 2005. In addition, he was President in charge of management of the Japanese Pediatric Orthopaedic Association from 2003 to 2009 and President of Japan Orthopaedics and Traumatology Research Foundation, Inc., Tokyo, Japan from 2007 to 2017. Therefore, he was given the Award for the Development of the Japanese Orthopaedic Association in 2018.

He has been making every effort to improve spinal surgery, in many Asian countries by visiting there for lectures and demonstration of surgeries or by accepting over 250 fellows to his university department and research center for their training. Because of his achievements, he has been granted an SC Fong Visiting Professorship of the University of Hong Kong in 1996, an honorary professorship of the Jilin University in Changchun, China in 1966, a Ho-Chi-Minh Medal of Ho-Chi-Minh City, Vietnam in 1999, an honorary membership of the Royal College of Orthopaedic Surgeons of Thailand in 2004, a VK Pillay Lectureship of the University of Singapore in 2006, and an AR Hodgson Memorial Lectureship of the University of Hong Kong in 2011. Prof Quazi M Iqbal Memorial Lectureship of the Universiti Kebangsaan Malaysia in 2023.

Endoscopic Management in Sciatica pain with non-spine condition(Deep Gluteal Space Syndrome)

Pornpavit Sriphirom

Phyathai Phaholyothin Hospital

Abstract Under Preparation

Education and Professional Work

Education:
1981 – 1987 M.D. – Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand
Post-doctoral Training:
1993 – 1996 Residency Training in Orthopaedics– Rajavithi Hospital, Ministry of nHealth, Bangkok, Thailand
Licensure:
1987 Thailand
Job Title:
-Head of Policy and Strategy Development Department, Rajavithi Hospital
-Head of Arthroplasty Unit, Orthopaedic Surgeon, Department of Orthopaedics, Rajavithi Hospital
-Associate Professor of Orthopaedic Surgery, Orthopaedic Department, College of Medicine, Rangsit University, Bangkok, Thailand
- Executive Committee, The Royal College of Orthopaedic Surgeons of Thailand.
- President of CAOS international (International Society for Computer Assisted Orthopaedic Surgery)
- Founder of ThaiS MISST (Thai Society for Minimally Invasive Spine Surgery and Technique)
-Founder of ASEAN MISST (Association of Southeast Asian Nations Society for Minimally Invasive Spine Surgery and Technique)
Memberships:
Thai Medical Association
The Royal College of Surgeons of Thailand
The Royal College of Orthopaedic Surgeons of Thailand
The American Academy of Orthopaedic Surgeons
The CAOS International
The NASS (North American Spine Society)
The AO spine
Certification:
1996 Diplomat Thai Board of Orthopaedic Surgery
1996 Hand and Microsurgery Workshop, Chiang Mai University, Thailand
1996 AO Advance Course on Principles of operative Fracture Treatment, Bangkok,Thailand
1997 Arthroplasty Travelling Fellowship, Job-Kalan University, LA, USA
2004 DISC Arthroplasty, Stabling, Germany
2004 MIS QS Total Knee Arthroplasty Hand-on Workshop, Melbourne, Australia
2005 MIS AL THA Hand-on Workshop, Cytec, Perth, Australia
2007 Endothoracoscopic Spine Workshop, Strasburg, France
2008 Percutaneous Endoscopic Lumbar Discectomy, Honolulu, Hawaii
2008 Percutaneous Endoscopic Cervical Discectomy, Honolulu, Hawaii
2009 Hip & Knee Arthroplasty Fellowship, Charete' University, Berlin, Germany
2009 Full- Endoscopic Discectomy the Lumbar, Thoracic and Cervical spine Cadaveric Workshop, Holn University, Germany
2009 Hip Expert Training, Anterior Approach, Navigation, Leizing, Germany
2009 S4 Cervical Spine Course and Cadaveric Workshop, Munich, Germany

Next Generation in Endoscopic Spine Surgery

Muhammad Tariq Sohail

Professor of Orthpaedics & Spine Surgery, Doctors Hospital & Medical Centre, Lahore – Pakistan

Endoscopic spine surgery has evolved significantly, marking a new era in minimally invasive spinal procedures. The next generation of endoscopic spine surgery integrates advanced optics, high-definition imaging, and robotic-assisted techniques to enhance precision and outcomes. Innovations such as 4K resolution endoscopes, augmented reality (AR) navigation, and artificial intelligence (AI)-assisted diagnostics are revolutionizing spinal care by reducing surgical trauma, minimizing complications, and accelerating recovery. Additionally, biportal endoscopic techniques and ultra-minimally invasive approaches are expanding the scope of treatable spinal disorders, including herniated discs, spinal stenosis, and degenerative conditions. These advancements offer improved visualization, greater maneuverability, and reduced reliance on open surgery, leading to better patient outcomes and decreased hospital stays. Furthermore, the integration of machine learning in preoperative planning and intraoperative decision-making is enhancing surgical precision. As the field progresses, ongoing research and technological advancements will continue to refine techniques, making endoscopic spine surgery the gold standard for treating spinal disorders with minimal disruption to surrounding tissues. This next-generation approach promises to transform spinal surgery, offering patients safer, more effective, and less invasive treatment options.

Education and Professional Work

Graduated from King Edward Medical College in 1975 and fellowship from Royal College of Surgeons of Edinburg and Glasgow in 1982 and Masters of Surgery in Orthopedics from University Liver pool in 1984.

Currently:
Visiting Professor at Postgraduate Medical Institute, Ameer –ud- Din Medical, Lahore General Hospital, Lahore. Visiting Professor at Witwatersrand University, South Africa. Board Member at Inuyama Spine Institute, Japan. Faculty Member North American Spine Society (NASS) USA and Faculty Member at Seattle Science Foundation (SSF) USA.

Past Army Services:
Dec 1975 to Dec 1977 Captain, Medical Corps of Pakistan Army

Postgraduate Training / Service abroad
August 1979 to June 1985 In various hospitals and universities in UK

Academic Appointments in Pakistan
December 1985 to Nov 2011 In various medical Colleges in Lahore and Rawalpindi

Research Publications National & International
Approximately 100 in number Text books and reference books having approximately 100 chapter. Books published (from UK, India, Italy, Venezuela, Argentina, Brazil & Pakistan) some are also translated in Persian and Spanish languages.

International Representation of Pakistan
Invited speaker in more than 97 Conferences, Workshops, and Courses

National representation
More than 80 conferences and workshops (mostly in the field of Spine surgery)

Virtual Academic Meetings
More than 20 mostly in the COVID period

Editorial Services
Has been chief editor Journal of Pakistan Orthopaedic Association (JPOA) Journal of Hand Surgery Pakistan (JHSP)
Currently reviewer more than 6 national and International journals of orthopedics and spine surgery.

Members and fellow of various National & International Societies
Approximately 12 societies

Academic Programs & Activities:
Paper setter and examiner at Punjab University, University of Health Sciences (UHS), College of Physicians and Surgeons Pakistan (CPSP), Punjab Public Service Commission (PPSC)

Postgraduate Training Courses Attended:
More than 20 National and International workshops and training courses
From UK, USA, Germany, Belgium, Canada, Switzerland, Malaysia etc. and Pakistan.

Current Research Areas:
Endoscopic surgery of spine. Bone Substitute and bone Biologics
Working on surgery and rehabilitation of hemophiliac patients in collaboration of WFH and Van Creveld Kliniek Holland.

Innovations:
Patents for bone substitutes, Vertebral (Spine) Body replacement Surgical techniques in Spine Surgery
I am keenly interested in various sports & an active flyer (Private Pilot).

L5-S1 extra-foraminotomy by UBE

Son Sang kyu

General Director, Good Munhwa Hospital in Busan, Korea

Abstract Under Preparation

Education and Professional Work

Education
1989-1995 Kyungbuk National Medical School
Internship and residency
1995-1996 Kyungbuk National University Hospital (Internship)
1996-1998 Military service
1999-2003 Kyungbuk National University Hospital (Residency)
License
Neuro Surgeon, Korean National Board of Neurosurgery
Membership
The Korean Neurosurgical Society
The Korean Spinal Neurosurgery Society
International Society for Minimal Intervention in Spinal Surgery (ISMISS)
Korean Society for the Advancement of Spine Surgery (KOSASS)
Korean Musculoskeletal Laser & Radiofrequency Society
International High-Tech Spine Society (HTSS)
Korean Minimally Invasive Spine Surgery Research Society (KOMISS)
Korean Society of Endoscopic Spine Surgery (KOSESS)

Endoscopy-Assisted Cervical Arthroplasty for Cervical Myelopathy due to Disc Herniation and Spondylosis

Keng-Chang Liu

Buddhist Tzu Chi Hospital, Chiayi, Taiwan

Introduction:
The traditional anterior cervical approach for addressing cervical myelopathy resulting from disc herniation or spondylosis often presents significant challenges, including limited surgical space, restricted visibility, and difficulties in achieving hemostasis. These limitations can impede the clear visualization of critical anatomical structures, complicating the decompression of the spinal cord and nerve roots. To overcome these obstacles, we have integrated endoscopic spine surgery techniques into the anterior cervical approach, followed by artificial disc placement, aiming to enhance surgical efficacy and patient outcomes.
Methods:
We developed an endoscopy-assisted anterior cervical technique designed to improve decompression effectiveness for cervical spondylotic myelopathy with radiculopathy, followed by arthroplasty. This minimally invasive approach closely resembles a traditional mini-open anterior cervical procedure but is executed endoscopically.
Results:
A retrospective analysis was performed on eight patients who underwent endoscopic anterior cervical discectomy followed by arthroplasty between January 2020 and August 2024. The cohort consisted of seven males and one female, with an average age of 42.5 years (range: 35-54). Preoperative arm pain, assessed via a visual analogue scale, significantly decreased from a mean of 6.5 to 1.8 postoperatively. JOA score improved from 6.7 to 15.6. Additionally, the Oswestry Disability Index (ODI) score improved from 67.2 to a mean of 15.1 at the final follow-up. The median hospitalization duration was 2.3 days, and all patients exhibited satisfactory outcomes at the last assessment.
Discussion:
The endoscopy-assisted anterior cervical approach provides enhanced visualization for precise decompression, particularly advantageous for patients with significant stenosis or large disc herniations. Following complete decompression, the placement of an artificial disc is deemed appropriate. The results from our study are promising.
Conclusions:
This study demonstrates the feasibility and safety of anterior cervical endoscopy-assisted discectomy and decompression, effectively addressing limitations associated with previous percutaneous techniques and advancing the conventional open approach into a more refined endoscopic procedure for cervical arthroplasty.

Education and Professional Work

Current Postition：
Chief, Endoscopic and Minimally Invasive Spine Center, Buddhist Dalin Tzu Chi Hospital, Taiwan
Educational Background：
Department of Medicine, National Cheng Kung University, Tainan, Taiwan
Department of Orthopedic Surgery, National Cheng Kung University, Taiwan
Current Title:
1. Director, Division of Spine Surgery, Department of Orthopedics, Buddhist Dalin Tzu Chi Hospital, Taiwan
2. Chief, Endoscopic and Minimally Invasive Spine Center, Buddhist Dalin Tzu Chi Hospital, Taiwan
3. Associate Professor, School of Medicine, Tzu chi University, Taiwan

Work Performance：
1. President of Pacific Asian Society of Minimally Invasive Spine Surgery (PASMISS) 2023
2. President of Taiwan society of endoscopic spine surgery (TSESS) 2023
3. Member of Taiwan Society of Minimally Invasive Spine Surgery (TSMISS)
4. Member of Taiwan Orthopedic Association
5. Member of Taiwan Spine Society
6. Board member of International Society of Endoscopic Spine Surgery (ISESS)

Biportal Endoscopic TLIF Using Various Types of Cages: Surgical Experience

Cheol Wung Park

Daejeon Woori Hospital, Daejeon City, Republic of Korea

Biportal Endoscopic Transforaminal Lumbar Interbody Fusion (TLIF) has become an essential technique in minimally invasive spine surgery. The success of this procedure is influenced by various factors, including the selection of an appropriate interbody cage. Depending on the anatomical conditions, pathology, and surgical goals, different types of cages—static, expandable, and customized 3D-printed designs—can be used to optimize outcomes.
This presentation will highlight my extensive experience in UBE-TLIF, with 218 cases, focusing on the decision-making process for cage selection. My experience includes various approaches such as:
UBE-TLIF with static cages
UBE-TLIF with expandable cages
UBE-TLIF with OLIF-type cages (16 cases)
Key factors in cage selection will be discussed, including:
Disc height restoration and segmental lordosis correction
Endplate preservation and fusion optimization
Expandable vs. static cages: biomechanical and clinical considerations
Challenges in insertion and positioning during biportal endoscopic TLIF
By analyzing real-world surgical cases and clinical outcomes, this lecture will provide insights into selecting the most suitable cage type for different surgical scenarios. Understanding these nuances will help spine surgeons enhance procedural efficiency, improve fusion success, and minimize complications.

Education and Professional Work

Present position
Founder and Director of Daejeon Woori Hospital (2003.12~present)Daejeon Woori Hospital, Daejeon City, Republic of Korea
Academic position/Employment
Laser Endoscopy Center Director (1999.07~2003.05)Seoul Wooridul Hospital, Seoul, Korea
Army surgeon (1996.4~1999.4)Korean Armed Forces Capital Hospital, Daegu, Korea
Resident, (1992.3~1996.2) Department of Neurosurgery, Gyeongsang National University Hospital, Jinju, Korea
General Intern (1991.3~1992.2)Gyeongsang National University Hospital, Jinju, Korea
Education
M.D. (1984.3~1991.2)Gyeongsang National University, College of Medicine, Jinju, Korea
Ph.D. (2003.03~2005.08) Doctor of medical scienceChung-Ang University, College of Medicine, Seoul, Korea
Board Certification
1996 Korean board of Neurosurgery,
Medical Licensure/Certification
1991 medical license of Korea,
Professional Membership
The Korean Neurosurgical Society-[2001-2022] Medical Insurance Committee Chair
The Korean Spinal Neurosurgery Society-[2018-2020] Medical Insurance Committee Chair
Korean Minimally Invasive Spine Surgery Society-[2022-2023] Vice President-[2023-2024] The 17th President
World UBE Society-[2021-2022] The 3rd President
Korea Research Society of Endoscopic Spine Surgery-[2019-2020] The 3rd President
Korean Neurosurgery Hospital Society-[2022-2023] Vice President

For next generation, Consider about the surgical training.

Yukoh Ohara

Associate Professor, Department of Neurosurgery Juntendo university

The usefulness of full-endoscopic spinal surgery has become widely known as most minimally invasive spine surgery. It can be said that it is a standard treatment with safety and effectiveness for lumbar and cervical foraminal lesions and lumbar disc herniation, but UBE, AFESS, large scope, etc. are being explored for decompression of large area. In addition to decompression surgery, endoscopic lumbar fusion is also becoming widespread. Although its usefulness is recognized, it is difficult to say that FESS is still widespread in Japan. It is said that there is a steep learning curve problem in FESS acquisition. An important issue in acquiring surgical techniques is to understand the anatomical knowledge, pathophysiology, and handling of the surgical equipment. Endoscopic surgery is different from conventional surgery on a distance between eye position and surgical field. For this reason, even doctors who are familiar with anatomy may be disoriented at first in the surgical field. However, professionals in conventional surgery believe that as long as they get used to real endoscopic surgical view, they can clear the endoscopic view without any problems. There is no other way to learn how to operate different surgery than using an actual device. We are developing a training simulator with a deep consideration for training. For beginners, we have prepared an environment where training can be done with a VR model that is simple and has feedback on the sensation of the drill, and a surgical simulator is provided to familiarize them with the operation of tools from the perspective of endoscopic surgery. It is also possible to use actual surgical equipment and in some cases to use 3D models with lesions. We know animal surgical training and cadaver training are very useful, but we would like to popularize FESS, which is a wonderful surgery, by providing an environment where it is easier to train repeatedly.

Education and Professional Work

March 1992; Graduated from Hirosaki University
April 1992; Resident, Department of Neurosurgery, Juntendo university
September 1996 – August 1999; Visiting fellow, Naval medical research institute. Guest researcher, National Institute of Health NINDS stroke branch.
November 2003 – January 2005; Spine fellow at Department of Neurosurgery, Aichi medical university
January 2005; Chief of spinal surgery at Department of Neurosurgery, Juntendo university
August 2012; Director, Surgical department of Spine, Spinal cord and Peripheral nerves, Shin-yurigaoka general hospital
September 2018; Associate Professor at Department of Neurosurgery, Juntendo University
February 2019; Vice director of the spine and spinal cord center in Juntendo university hospital
March 2022; Director of the spine and spinal cord center in Juntendo university hospital

Surgical treatment for repeated "near miss" spinal cord injury in elite rugby players

Masataka Sakane

Director, Orthopedic surgery & Rehabilitation, Tsukuba Gakuen Hospital

Objective:
To investigate the return to play and recurrence rates in elite rugby players who developed transient quadriplegia and cervical spinal cord injury following contact and underwent cervical laminoplasty.
Methods:
The study included 11 elite-level rugby players diagnosed with repeated transient quadriplegia who underwent cervical laminoplasty at our institution. Preoperative C5 anteroposterior spinal canal diameter was measured using CT scans. A retrospective analysis was conducted to assess return-to-play timing and recurrence rates.
Results:
The C5 anteroposterior diameter ranged from 10.8 to 12.8 mm. All players returned to their original competitive level within 4 to 12 months postoperatively without complications. No recurrence of transient quadriplegia was observed until retirement.
Discussion:
Spinal canal stenosis is considered a risk factor for transient quadriplegia, and return to collision sports is generally discouraged. In this series, all cases had an intrinsic spinal canal anteroposterior diameter of 13 mm or less. However, all players successfully returned to their original competitive level after laminoplasty.
Conclusion:
For collision sport athletes with a history of repeated transient quadriplegia and spinal canal stenosis who wish to return to play, cervical laminoplasty can be an effective surgical option.

Education and Professional Work

Education：
MD 1989 School of Medicine, University of Tsukuba
PhD 1998 University of Tsukuba

Work Experience：
1989 Orthopedic resident, Tsukuba University Hospital
1995 Research fellow, Pittsburgh University
1999 Assistant professor, Ibaraki Prefectural University
2002 Assistant professor, University of Tsukuba
2008 Associate professor, University of Tsukuba
2016 Director, Orthopedic surgery & Rehabilitation, Tsukuba Gakuen Hospital

Navigation-assisted unilateral biportal endoscopic extra foraminal lumbar inter body fusion (UBE/BESS-ELIF)

Kenyu Ito

Aichi Spine Hospital

[Purpose] In recent years, with the development of endoscopes, extraforaminal lumbar interbody fusion (ELIF) has become possible via extraforaminal approach such as Kambin's triangle. ELIF enables indirect decompression and lumbar interbody fusion without direct visualization of the dura, which is anticipated to lower the risk of dural injury and bleeding. Since 2023, ELIF has been conducted using a unilateral biportal endoscope (UBE/BESS) in our institute. We also report the application of UBE/BESS-ELIF in combination with navigation (NV).
[Method] A UBE is inserted through the skin incision for percutaneous pedicle screw (PPS). The superior articular process is partially resected, but the inferior articular process is left intact to avoid exposure of the dura. The extraforaminal disc is accessed, and a cage is inserted at 45 degrees, guided by the axial image of NV. In cases where the intervertebral disc area is large, such as L5/S, two cages are inserted. For bone grafting, the resected superior articular process and artificial bone are transplanted. The remaining facet joint is decorticated and bone grafted.
[Results] A total of 20 cases were analyzed (8 females and 12 males), with an average age of 57 years (range: 40-88). Eighteen cases involved a single-level procedure (L2/3: 1 case, L3/4: 1 case, L4/5: 10 cases, L5/S: 6 cases), while 2 cases involved a two-level procedure (L4-S). The average blood loss was 33.7 ml (range: 10-130 ml). The mean operative time was 188.1 minutes (range: 128-299 minutes) for non-L5/S cases and 200.0 minutes (range: 133-242 minutes) for L5/S cases. During the follow-up period, complications included one case of vertebral body fracture due to a fall and one case of cage subsidence.
[Discussion] UBE/BESS-ELIF allows for the insertion of a large lordotic cage by resecting the superior articular process, and bone grafts are not harvested from other sites. The procedure was also performed without any exiting nerve root damage. Since this procedure is performed using water irrigation through a PPS skin incision, we anticipate a lower infection rate.
[Conclusion] Indirect decompression using UBE/BESS-ELIF was performed without major complications. This procedure is minimally invasive and can also be applied at the L5/S level. Additionally, NV not only reduced radiation exposure for the surgeon but also facilitated the insertion of the cage in the optimal position.

Education and Professional Work

EDUCATION:
April 1998 to March 2004, student of Nagoya University School of Medicine, obtained the M.D. degree
April 2012 to March 2015, Ph.D. student in the Postgraduate Course of Nagoya University School of Medicine
LICENSURE & CERTIFICATION:
・National Board of Medicine, Registration No. 440126
・Board-certified Spine Surgeon approved by the Board of the Japanese Society for Spine Surgery and Related research, Certificate No. 11666
FELLOWSHIP OR STUDY ABROAD:
AO Fellow: Johns Hopkins University. November 11 to 27/ 2015
JSSR Asia Travelling Fellow: Nationa University Hospital (Singapore) 10/16-10/22/2017
Kyung Hee University Hospital (South Korea) 11/13-11/17/2017
International research fellow: San Diego Spine Foundation. Scripps Green Hospital, Rady Children's Hospital. April/2018-Mar/2018
ACADEMIC APPOINTMENTS:
Clinician of orthopedic section in Nagoya University.
HOSPITAL APPOINTMENTS:
2004/Apr-2008/June Okazaki city Hospital
2008/June -2011/Mar Meijo Hospital
2011/Apr -2012/Mar National center for Geriatrics and Gerontology
2012/Apr -2015/Mar Student in the Postgraduate Course of Nagoya University School of Medicine
2014/Apr -2018/Mar Clinician in Nagoya University Hospital
2018/Apr-2019/Mar San Diego Spine Foundation International Fellow, Scripps Green Hospital
2019/Apr-2023/Mar Konan Kosei Hospital
2023/Apr-present. Aichi Spine Hospital
MEMBERSHIPS:
・Japanese Orthopedic Association
・Japanese Spine Research Society
・Japanese Scoliosis Research Society
・Scoliosis Research Society
Etc.

Biportal endoscopic lumbar interbody fusion with 3D printed double cage: Technical note and preliminary result

Ju Eun Kim

Department of Orthopaedic Surgery Baroseomyeon Hospital

Background context: Numerous papers regarding minimally invasive spinal surgery using biportal endoscopic technique have been published. Furthermore, few technical reports and small case series of biportal endoscopic transforaminal interbody fusion (BE-TLIF) have been recently reported. However, as with open surgery, complications such as delayed union or subsidence occurred. Therefore, we assumed 3D printed double cage technique would result in less complication.
Purpose: Our aim was to introduce the surgical technique of BE-TLIF using 3D printed double cage that were originally designed for posterior lumbar interbody fusion and investigate the clinical outcome and technical feasibility of which.
Study design: A retrospective study.
Method: Between July 2023 and January 2024, 16 patients who underwent single-level BE-TLIF for degenerative or isthmic spondylolisthesis as well as spinal stenosis patient who were recured that were followed up for at least a year were enrolled. For cage selection, 3D printed cages that were designed for PLIF were used. Visual Analog Scale (VAS) of back and leg and Oswestry Disability Index (ODI) were collected perioperatively, and modified Macnab criteria were collected at the final follow-up. The length of hospital stay, time to ambulation, and fusion rate, perioperative complications were collected.
Result: ODI scores improved from 64.1±4.4 preoperatively to 16.3±4.1 at the final follow-up ($p<0.001$). VAS scores of the leg decreased from 7.7±1.5 to 1.7±1.5 at the final follow-up ($p<0.001$). Per the modified Macnab criteria, 94% of the patients improved to good/excellent. The fusion rate at one-year follow-up was 93.7%, and no patient showed subsidence or other postoperative complication.
Conclusion: BE-TLIF using a 3D printed double cage can be safely performed with decreased risk of subsidence. A cage with a larger footprint is assumed to be advantageous in BE-TLIF

Education and Professional Work

EMPLOYMENT:
Chief of Department, Department of Orthopedic surgery 2015~2018
Clinical Instructor, Department of Orthopedic Surgery, Kyungpook National University Hospital, Daegu, South Korea 2014 - 2015
Physician in Army (rank: captain grade), Daegu Military Hospital, Daegu, South Korea
United Nations Mission in South Sudan 2011 - 2014
EDUCATION
M.S., 2009
Kyungpook National University, College of Medicine, Daegu, South Korea
M.D., 2006
Kyungpook National University, College of Medicine, Daegu, South Korea
PreMedic School, 2001
Kyungpook National University, College of Medicine, Daegu, South Korea
PROFESSIONAL SOCIETIES AND ACTIVITIES
Korean Medical Association 2006
Korean Orthopaedic Association 2011
Daegu-Kyungpook Orthopaedic Society 2011
AOSpine member 2015
Daegu-Kyungpook Spine Society 2015
Korean Society of Spinal Surgery 2016
Korean Worker's Corporation & Welfare Service Consultant 2016
National Pension Service Consultant 2016
Korean Society of Spinal Surgery Minimal Invasive surgery Committee Member 2017
Korean Society of Spinal cord research Committee Member 2017
Korean Society of Spinal cord research Committee Member 2017
APSS member 2018
NASS member 2018
PASMISS member 2018
ISASS committee 2023

Current Status of Uniportal, Full Endoscopic, Posterior Cervical and Thoracic Approach for Degenerative Spinal Disease

Hyeun Sung Kim

Director of the Harrison Spinartus Hospital Chungdam

In the past, surgical approaches to cervico-thoracic pathology caused many complications, and the indications for surgical treatment were limited because surgical access was not easy.
However, since the development of the posterior endoscopic cervico-thoracic approach, the treatment results have improved greatly, and the indications have also become very broad.
In this lecture, we will discuss how to effectively treat degenerative cervico-thoracic diseases through the posterior endoscopic approach.

Education and Professional Work

・Editor-in-Chief of JMISST / A Section Editor of World Neurosurgery / Neurospine / IJSS / Associate Editor of BMC Musculoskeletal Disorders / Academic Editor of Medicine / Guest Editor of Brain Sciences
・Medical College of Chosun University, Gwangju, South Korea (1994~1999)
・neurospinekim@gmail.com, neuros@hanmail.net
・A Past President of KOSESS (Korean Research Society of Endoscopic Spine Surgery) (2020~2021)
・(Former) Director of Nanoori Gangnam Hospital
・A Director of Private Sector of Korean Spinal Neurosurgery Society (2022~)
・A Director of Korean Neurosurgical Society (2022~)
・A Faculty of KOMISS (Korean Minimally Invasive Spine Surgery Society) (2012~)
・A Co-Founder of NASESS (NAVI Symposium of Endoscopic Spinal Surgery) (2016~)
・A Faculty of World Spinal Column Society (2016~)
・2018 Parviz Kambin Award Winner (2018)

Memberships & Professional Societies (More than 20 Society)
Korean Neurosurgical Society / Korean Neurosurgical Spine Society / KOMISS / KOSESS / Eurospine / NASS / ISASS / AANS / WCMISST / ACMISST / KASS / AO Spine / World Spinal Column Society / Others

Major Career
2018 Parviz Kambin Award (Best Award of the Endoscopic Spine Surgery)
2019 NASS annual meeting: Endoscopic Spine Surgery Workshop and Symposium Director
2021 KOSESS (Korean Research Society of Endoscopic Spine Surgery) President
2022 An Editor-in-Chief of JMISST
Editor: World Neurosurgery / Neurospine / IJSS / BMC Musculoskeletal Disorders / Medicine

Development of a new cage inserter (Y-slider) and trial of T-shaped double expandable cage insertion for performing UBE or full endoscopic facet-preserved transforaminal interbody fusion

Seiji Yamaya[1,2], Ko Hashimoto[3], Yutaka Koizumi[2], Yutaka Yabe[2], Shigeaki Kojo[2], Hideaki Suda[2], Chikashi Kawahara[2], Naoki Morozumi[2], Shoichi Kokubun[2], Toshimi Aizawa[3]

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[2]Department of Orthopedic Surgery, Sendai Nishitaga Hospital
[3]Department of Orthopedic Surgery, Tohoku University School of Medicine

We have performed full endoscopic facet-preserved transforaminal lumbar interbody fusion using PETLIF or FE-KLIF device for 80 patients with lumbar degenerative spondylolisthesis since 2018.

The clinical outcome at three years after surgery, as well as significant reduction of spondylolisthesis and the rate of intervertebral fusion (93%), was excellent. However, cage subsidence, which disrupts indirect decompression, was found to be a factor in poor outcome.

To overcome this problem, the newly developed Y-slider ® (TANAKA Medical Instrument Manufacturing Co., Ltd) can protect nerve roots and bilateral endplates during cage insertion, and can guide and insert a cage with a larger ground surface area than conventional cages.

The Y-slider ® can be used for all MED, FESS, and UBE endoscopic facet-preserved transforaminal lumbar interbody fusion procedures, and a boomerang-shaped cage is inserted contralaterally, a straight cage is inserted on the entry side, and two cages are inserted in a T-shape.
The installation area was maximized by inserting two cages in a T-shape.
Further improvement in performance can be expected.

Education and Professional Work

Education: 2003, MD degree, Jichi Medical University.
2014, PhD degree, Department of Orthopaedic Surgery, Tohoku University.
Board certification in Japan: 2003 National Board of Medical Doctor. 2011 Approved Orthopaedic Surgeon by Japanese Orthopaedic Association
2015 Board-certified spine surgeon (approved by the board of the Japanese Society for the Spine Surgery and Related Research)
2016 Board-certified endoscopic spine surgeon MED (approved by Japanese Orthopaedic Association)
2021 Board-certified endoscopic spine surgeon FESS (approved by Japanese Orthopaedic Association)
Professional and academic employment history
2003 Iwate Prefectural Cyuou Hospital
2010 Department of Orthopaedic Surgery, Tohoku University
2015 Clinical Spine Fellow (MED) of JSSR
Department of Orthopaedic Surgery, Wakayama Medical University
2017 Clinical Spine Fellow (FESS) of JSSR
Department of Orthopaedic Surgery, Tokushima University
2017 an assistant professor, Tohoku University
2018 Director of the Center of Endoscopic Spine Surgery, Orthopaedic Surgery, Sendai Nishitaga Hospital

Title Under Review

Chien-Min Chen

Division of Neurosurgery, Department of Surgery,Changhua Christian Hospital, Taiwan

Abstract Under Preparation

Education and Professional Work

Education:
M.D. Chung-Shan Medical University (1982/9 ~ 1993/6)
PhD candidate in National Taiwan University
Neurosurgery department of Changhua Christian Hospital (2005/4~2006/12)
Clinical Fellow in Neurosurgery, Chang Gung Memorial Hospital (2007/ 1~ 2007/1)
Clinical Fellow in Neurosurgery, National Taiwan University (2007/3~ 2007/4)
Clinical Fellow in Neurosurgery, Taipei Veterans General Hospital (2007/6~ 2007/7)
Board Certification:
Board of Surgery, Taiwan Surgical Association.
Board of Surgery, Taiwan Surgical Association.
Board of Neurosurgery, Taiwan Neurosurgical Society.
Board of Taiwan Surgical intensive care
Board of Taiwan neurological intensive care
Professional Affiliations: (Medical Organizations or Societies).
Member, Taiwan Surgical Association.
Member, Taiwan Neurosurgical Society.
Member, Taiwan Society of Critical Care Medicine.
Member, Taiwan Society of pediatric neurosurgery
Member, Taiwan Neurospinal Society
Board member, Taiwan Society of skull base
Supervisor, Taiwan Society of Minimally Invasive Spine Surgery.
Executive presidium, International Society of Endoscopic Spine Surgery
Board member, World Congress on Minimally Invasive Spine Surgery and Techniques Association (WCMISST association)
The second President of Taiwan Society of Endoscopic Spine Surgery (TSESS)
Neurosurgery department of Changhua Christian Hospital Director
Professional specialty:
Full endoscopic discectomy
Minimally invasive spine surgery
Total navigation in spine surgery
Endoscopic removal of ICH
Ventricular endoscopic surgery
Neuro Oncology
Vascular Neurosurgery
Endoscopic transnasal pituitary surgery
Skull base surgery
Neurotraumatology

Minimally invasive transforaminal lumbar interbody fusion by V-shape Bichannel Endoscope system, technique note and clinical results

Shisheng He

Director of Spinal Surgery Section of Shanghai Tenth People's Hospital.

Purpose Our team designed a novel two-medium compatible bichannel endoscopy system for spinal surgery, V-shape bichannel endoscopy (VBE) system. This study aims to introduce the minimally invasive transforaminal lumbar interbody fusion (TLIF) procedure using the VBE system and share its clinical outcomes.
Methods 109 participants, who accepted VBE-assisted TLIF surgery (VBE-TLIF) in our hospital were included in this study. The duration of operation, off-bed time, and days of hospitalization were recorded. Besides, the patient's preoperative and postoperative pain were evaluated via visual analog scale (VAS), the functional status was evaluated via Oswestry
dysfunction index (ODI) and modified MacNab criteria. Patients were asked to follow-up in the outpatient department at the 3rd, 6th, 12th, and 24th month after surgery. X-ray or CT was examined to evaluate the internal fixation position and interbody fusion result.
Results All patients underwent unilateral decompression with an average operation duration of 167.82 ± 29.88 minutes. After the surgery, there was a significant reduction in the VAS scores for both leg pain and back pain. At the last follow-up, the VAS scores of leg pain and back pain were 0.67 ± 0.58 and 0.73 ± 0.66, respectively, with a statistically significant difference ($p < 0.05$). At the last follow-up, the ODI was 12.20 ± 4.35. According to the modified MacNab criteria, 88 patients had an excellent functional rating, and 17 patients had a good rating. The overall satisfaction rate reached 96%.
Conclusion The VBE system described in this study has demonstrated the ability to safely and effectively perform TLIF surgery, showing promising potential for its application in spinal surgery.

Education and Professional Work

Education:
Doctor of Medicine (Supervisor: Prof. Tiesheng Hou): Sept 1996 – July 2001, Second Military Medical University, Shanghai, China
Bachelor of Medicine: Sept 1991 – Sept 1996, Second Military Medical University, Shanghai, China
Membership of Professional Societies:
•Member of the Pacific and Asian Society of Minimally Invasive Spine Surgery
•Chairman of Spinal Pain Medicine Committee of Chinese Association of Orthopaedic Surgeons
•Vice Chairman of Cervical Disease Committee of Chinese Association of Rehabilitation Medicine
•Vice Chairman of Spinal Pain Medicine Committee of Chinese Medical Association Pain Medicine branch
•Head of Spinal Pain MIS Group of Chinese Medical Association Pain Medicine branch
•Vice Head of Spinal Microscopy Group of Chinese Association of Orthopaedic Surgeons
Research Summary:
•Group active in the areas of minimally invasive spine surgery and bone-biomaterials.
•Secured >10 research grants from industry, government, and charity sources in research funding.
•More than 60 SCI papers in international peer-reviewed journals in the last five years.
Awards and Honours:
•2019, Third Prize of Huaxia Medical Science and Technology Award.
•2017, Second Prize of Shanghai Technology Invention Award.
•2015, Second Award of Shanghai Medical Science and Technology Progress Award.
•2009, First Improvement Award of Shanghai Science Technology.

A Novel Concept in Next Generation Endoscopic Fusion Surgery: Posterior Direct Bone to Disc Approach

Yoshinori Kyoh

Director of Kyoh Orthopaedics & Neurosurgery Clinic

In lumbar fusion surgery, LLIF has gained popularity due to its indirect decompression effect, preservation of posterior elements, and enhanced stability provided by the use of larger cages. We employ endoscopic LLIF (ELLIF), a minimally invasive variant, across the thoracolumbar junction to the lumbosacral junction. However, not all cases are suitable for this approach, and posterior fixation may be more appropriate in certain scenarios. Examples include: 1) In degenerative scoliosis, where collapse and deformation of the concave vertebral body result in asymmetry of vertebral height, necessitating correction by lifting only the concave intervertebral space. 2) At the L5/S1 level, where an anterior approach poses a risk of damaging the ascending lumbar vein. 3) At levels such as T12/L1 or L1/2, where an anterior approach increases the risk of pleural injury.

The author will provide an overview of the Posterior Direct Bone to Disc Approach, a novel concept for posterior fixation, along with the actual technique, and its application in endoscopic surgery and navigation-assisted surgery. The Posterior Direct Bone to Disc Approach is a direct targeting approach for areas where the bone and intervertebral disc are in close proximity, without the nerve being visible. In posterior fixation, approaches such as PLIF involve fixation extending from decompression, where the nerve is directly exposed in the surgical field; TLIF involves a large resection of the unilateral facet joint, which inevitably exposes the nerve; and KLIF involves expanding an area where one side is already composed of nerve structures. In contrast, this approach avoids direct visualization of the nerve as much as possible when placing a cage in the intervertebral disc. This approach that does not involve exposing the nerve in the surgical field. If nerve confirmation is absolutely necessary, it is safer to confirm the nerve after placing the cage. In rare cases of degenerative scoliosis, where the intervertebral space is completely lost and the nerve root is horizontally oriented, the nerve root may become visible in the surgical field when there is no available space to insert the cage until the intervertebral space is lifted. For this approach, the mini-open procedure is safe and sufficiently minimally invasive. However, it cannot be said with absolute certainty that there is zero risk of nerve root injury. By using an endoscope to achieve a clear and deep view, safety is enhanced. Additionally, by simultaneously utilizing both endoscopy and navigation, this technique enables precise, minimally invasive surgery without the need for fluoroscopy.

Education and Professional Work

EDUCATION/POST GRADUATE TRAINING
University: 1988-1994 Mie University, Faculty of Medicine
Residency: 1995-1997 Department of Orthopaedic Surgery, Osaka Rosai Hospital
MEDICAL LICENSURE
Full Medical License (Japan) No.5810
BOARD CERTIFICATION
The Japanese Orthopaedic Association
The Japanese Society for Spine Surgery and Related Research
AWARD
Best Oral Presentation Award -3rd Place-
The 7th ACMISST & 18th KOMISS, 24-25 May, 2019, Seoul, Korea
INTERNATIONAL FACULTY & INVITED LECTURE
The 5th Asia Pacific Cervical Spine Society Meeting, Bari, Indonesia, 23–26 November, 2011
The 2016 Midyear Course of the Minimally Invasive Spine Surgery and Techniques (MISST), Goa, India, 17-19 June, 2016
The Leon Wiltse Spine Symposium, Suwon, Korea, 14 July, 2018
The 2nd ISESS & The 2nd ISMISS Asia-Japan & The 11th MISS Summit Forum, Aichi, Japan, 31 August & 1 September, 2018
The 12th MISS Summit Forum, Aichi, Japan, 23-24 August, 2019
The 3nd ISMISS Asia-Japan & The 13th MISS Summit Forum, Aichi, Japan, 26-27 March, 2021
The 4th ISMISS Asia-Japan & The 14th MISS Summit Forum, Aichi, Japan, 25 March – 24 April, 2022
The 5th ISMISS Asia-Japan & The 15th MISS Summit Forum, Aichi, Japan, 11-31 March, 2023
The 6th ISMISS combined with The 16th MISS Summit Forum, Aichi, Japan, 15-16 March, 2024

Endoscopic spine surgery. Is it the standard yet?

Benedikt W. Burkhardt

Spine Center Zürich – WSC, Klinik Hirslanden, Zurich, Switzerland

Background: Minimally invasive lumbar surgeries are becoming more popular and a routine in most neurosurgery departments around the world. We reviewed the literature and technique on fully endoscopic interlaminar lumbar discectomy.

AIM: To review latest literature and the technique and provide experience from two centers.

Material and Methods: Literature review and give our experience. Result: Endoscopic procedures are aviable alternate to microscopic procedure and results in similar clinical outcome and decreased morbidity.

Conclusion: Endoscopic procedures are safe and effective for the treatment of degenerative lumbar spine diseases

Education and Professional Work

Education

04/2004 – 05/2011	Medical school - Johannes Gutenberg Universität Mainz, Germany

Professional Experience

Since 01/2021	Consultant Wirbelsäulenzentrum / Spine Center – WSC Hirslanden Klinik Zürich, Switzerland PD Dr. med. Benedikt Burkhardt, PD Dr. med. Hansjörg Leu
07/2018 – 12/2020	Consultant Department of Neurosurgery Universitätsklinikum des Saarlandes, Germany Chairman: Univ.-Prof. Dr. med. Joachim Oertel
10/2018 – 12/2018	Zentrum für Wirbelsäulenchirurgie, Orthopädie und Traumatologie SRH-Klinikum Karlsbad-Langensteinbach, Germany Prof. Dr. med. Tobias Pitzen, Dr. med. Gregor Ostrowski, PD Dr. med. Michael Ruf
06/2016 – 09/2016	Department of Neurological Surgery – Section of Spine Neurosurgey Rush University Medical Center, Chicago, USA Professor Richard G. Fessler, MD, PhD
03/2012 – 06/2018	Residency Neurosurgery Department of Neurosurgery Universitätsklinikum des Saarlandes, Germany Chairman: Univ.-Prof. Dr. med. Joachim Oertel

Honors

04/2018	Best oral presentation – World Spine 8, Porto, Portugal
06/2018	Depuy Synthes Spine Grant – DGNC, Münster, Germany

Membership

09/2018	International Society of Minimal Intervention in Spinal Surgery (ISMISS) National representative Switzerland
11/2019	International Federation of Neuroendoscopy (IFNE)
12/2017	Deutsche Wirbelsäulengesellschaft (DWG)
05/2018	Deutsche Gesellschaft für Neurochirurgie (DGNC)
07/2018	Saarländische Chirurgenvereinigung
09/2021	Schweizer Gesellschaft für Neurochirurgie (SGNC)
09/2021	Schweizer Gesellschaft für Spinale Chirurgie (SGS)

Preliminary clinical and radiological outcomes of uniportal endoscopic lumbar interbody fusion for degeneration lumbar scoliosis over 1 year follow-up

Yi Hung Huang

Department of Orthopedics Chia Yi Christian Hospital, Chia Yi City Taiwan

【Background】
The endoscopic spine surgery(ESS) is rapidly developed in recent three decades and uniportal ESS combined with TLIF(endoTLIF) is the new trend due to the least traumatization. The drawback of uniportal endoTLIF is time consumption. The adult degeneration scoliosis is relatively complicated lumbar lesions and is highly challenged for uniportal endoTLIF due to longer segmental correction and fusion. The purposes of this article are to explore the efficacy and feasibility of uniportal endoTLIF in the treatment of patients with degeneration scoliosis.
【Methods】
From Oct 2021 to Oct 2023, a retrospectively enrolled 19 patients with deg. Scoliosis treated with uniportal endoTLIF was followed up at least 14 months. Female cases were 16 and average age was 75.26 y/o. All patients were treated 2 levels by endoTLIF at least. The clinical and radiological outcomes were evaluated preoperatively and 3, 6 and 12 months postoperatively. CT was performed for final fusion evaluation at the time of 1-year follow-up.
【Results】
The mean visual analog scale (VAS) back pain and leg pain scores improved significantly. The Oswestry Disability Index score improved from 65.6 ± 8.1% preoperatively to 15.6 ± 7.3% at 1-year follow-up ($P < 0.05$). The scoliosis Cobb' s angle changed from 18.5° ± 7.6° to 5.6° ± 2.6° at 1-year follow-up ($P < 0.05$). Solid fusion of interbody fusion was achieved in all patients. The facet fusion was achieved up to 80%. There was no dural and neurological damage during operation. The complicated heterotopic ossification causing excising root compression at foraminal site was found in one patient and the patient received endoscopic transforaminal decompression at the 1 year follow up.
【Conclusion】
The technique of Uniportal endoTLIF can be well treat for the patients with degeneration scoliosis requiring 2 levels decompression, correction and fusion at least, achieving favorable clinical outcomes and good fusion.

Education and Professional Work

Education:
MD: Private Chung Shan Medical University, 1994
MS: Institute of Manufacturing Engineering, national Cheng Kung University NCKU, 2009
Attending Surgeon:
Chia Yi Christian Hospital Orthopaedic department, 2000~ now
Chief of spine sub-special department
Chief of center of spine mini-invasive surgery
Director of department of orthopaedic surgery
Visiting Clinical Fellow:
Dept. of Orthopaedic Surgery, Showa University, Tokyo, Japan, 2006
Center for Orthopeidcs and Traumatology of the St Elisabeth Group Herner/Dusseldorf Germany 2014
Lugwig Maximilan University, Isar Klinikum Munich Germany 2015
Medical Association member:
1. Taiwan society of endoscopic spine surgery (TSESS): founding president
2. Pacific and Asian Society of Minimally invasive Spine Surgery (PASMISS): board member
3. Faulty member of Society for Minimally Invasive Spine Surgery (SMISS)
4. Taiwan society of Mini-invasive Spine Surgery(TSMISS): board member
5. Taiwan Spine Society
6. Taiwan Surgical Association
7. Taiwanese Osteoporosis Association

"Full-Endoscopic Midline Foraminoplasty" an Alternative Method for treating Lumbar Foraminal Stenosis.

Saran Pairuchvej MD[1], Khanathip Jitpakdee MD[1], Gun Keorochana MD[2]
Chok-anan Rittipoldechs MD[3], Jatupon Kongthavornsakul MD PhD[4]

[1]Queen Savang Vadhana Memorial Hospital, Chonburi , Thailand
[2]Department of Orthopedic Surgery, Ramathibodi hospital, Mahidol University ,Thailand
[3]Department of Orthopedic Surgery, Hatyai hospital , Songkhla ,Thailand
[4]Department of orthopedic surgery, Navavej international hospital

Introduction: Lumbar foraminal stenosis is a condition in which a spinal nerve is entrapped in a narrow lumbar foramen in degenerative lumbar spinal disorders. Several different techniques for this problem has been described, including foraminotomy, facetectomy, partial pediculectomy, fusion, and distraction instrumentation. Nowadays full-endoscopic lumbar surgery was able to decompress lumbar foramen, preventing from proceeding to more aggressive procedure.
Objectives: To describe the full-endoscopic midline foraminoplasty and lateral recess decompression (FEMF) procedure and report its clinical outcome at 1 year follow-up.
Materials and Methods: Consecutive patients with lumbar foraminal and/or lateral recess stenosis who underwent FEMF procedure were retrospectively reviewed. Clinical outcomes were evaluated with visual analog scale (VAS) of back and leg pain and Oswestry Disability Index(ODI) up to 1 year postoperatively. The complications and recurrence rate were also recorded
Results: A total of 30 cases were included (L3–L4 : 6 cases (20%), L4–L5: 23(76.6%), L5–S1 : 22cases(73.3%). VAS was collected at preoperative, postoperative day1, 3 month, 6 month and 1 year were 9.16,1.7,1.36,1.3,1.43 and respectively. The ODI were collected at preoperative, postoperative 1month, 3 month,6 month and 1 year were 46.63,11.5,10.66,10.46 respectively ($P < 0.05$). The mean operation time was 88.7 minutes (45-152 minutes). The length of hospital stay was 1.21 (1-3 days). No immediate complication was identified . No patient had recurrence of symptoms that required revision surgery.
Conclusions: FEMF is an effective procedure for the treatment of foraminal and/or lateral recess stenosis. Bilateral foraminal and lateral recess stenosis were able to be decompressed from single entry point.

Education and Professional Work

Education
1997-1999 High school -TriamUdom Suksa High School , Phyathai , Bangkok ,Thailand
2000-2005 M.D.(honored) - Faculty of Medicine , Chulalongkorn University ,Phyathai , Bangkok , Thailand
Post-doctoral training
2006-2010 orthopedics residency training - KhonKaen University , KhonKaen , Thailand
2011-2012 fellowship of spine surgery - Ramathibodi hospital , Mahidol University , Bangkok ,Thailand
Licensure
2005 , Thailand
Current employment
Job title
-Chief of spine consultant , Queen Savang Vadhana Memorial hospital
-Head of research unit ,Queen Savang Vadhana Memorial hospital
-Head of clinical research and evidence- based medicine for medical students , Burapha University , Chonburi,Thailand
Membership
Thai Medical Association
The Royal College of surgeons of Thailand
The Royal College of orthopedic surgeons of Thailand
The Spine Society of Thailand [SST]
The Asean Minimally Invasive Spine Surgery Society(ASEANMISST)
The European Federation of National Associations of orthopedics and traumatology (EFORT)
Certifications
2010 Diplomat Thai board of Orthopaedics surgery
2010 Hand and Microsurgery workshop ,Chiangmai, Thailand
2010 AO Advanced course on principles of operative fracture treatment Bangkok,Thailand
2011 Visiting fellowship for Spine training , Nishitaga hospital ,Sendai ,Japan
2011 Visiting fellowship for Spine training , Tohoku Chuo hospital ,Yamagata ,Japan
2012 Fellowship of spine surgery , Ramathibodi hospital ,Mahidol University,Thailand
2013 MIS and microendoscopic spine surgery , Wakayama ,Japan
2013 Spinal injury center ,Fukuoka , Japan
2015 Visiting doctors in Hospital de Gap , Gap ,France

Standpoint of monoportal FESS: how to manage inconveniences and optimizing advantages of the procedure

Kuniyoshi Tsuchiya

Director, Department of Orthopaedic Surgery

Purpose of this presentation :
There's no doubt that Full Endoscopic Spine Surgery is a most effective and least invasive procedure for lumbar disc herniation. However, decompression surgery can be tough in some cases. In this presentation, keys for stable decompression with single portal approach might be discussed.
During the procedure, orientation is one of the important keys especially in the cases with severe degeneration. Adequate bone resection is especially important in order to move cannula to the intended direction and depth.
Keys for early comfortable orientation is to go deeply as early as possible. The deeper cannula is placed, the less soft tissue can enter into the field.
Thus canal stenosis, even accompanied with unilateral foraminal stenosis can be treated with less bone resection with monoportal decompression, shown in this presentation.
In severely degenerative cases, inferior articular process cannot be a trustable landmark. In contrast, superior margin of the caudal lamina can be served as a trustable one for the depth of the spinal canal, regardless of the degree of degeneration nor spondylolisthesis.
Adhesion or proliferation of fibrous tissue is often accompanied with severe and long history of stenosis. Safe and descent removal of perineural fibrous tissue is important to recognize the margin of neural tissue.
Limitation of the range of device motion in monoportal FESS can serve as a stabilizer of the devices, making drilling more comfortable.
In order to attain satisfactory and stable results, objective endpoints should be defined and confirmed at the end of the procedure, as well as a secure hemostasis throughout the procedure.
Full endoscopic monoportal decompression for lumbar canal stenosis is extremely useful in its versatility and truly low invasiveness with just one small incision.

Education and Professional Work

FORMAL EDUCATION
1980-1986: Kyushu University, school of medicine (M.D.)
1989-1993: Department of Genetics, Medical Institute of Bioregulation. Graduate school of medicine, Kyushu University (Ph.D.)
POSTDOCTORAL TRAINING
1993-1994: Postdocrtoral fellow, Orthopaedic Research Laboratory　Stanford University, Palo Alto, CA
2003-2004: Visiting fellow at Spine Deformity Service
Department of Orthopaedics, Washington University School of Medicine, St Louis, MO
LICENSES/CERTIFICATION
1996-: Board certified Orthopaedic surgeon: Japanese Orthopaedic Association
2003-: Board certified doctor of rheumatology: Japan College of Rheumatology
2003- : Advisory doctor, Japanese Society for Spine Surgery
2010- : Board certified surgeon of Microendoscopic Spine Surgery
2016- : Board certified surgeon of Full Endoscopic Spine Surgery
Activities:
2012-: Delegate: Japanese Spinal Instrumentation Society
2016-: Educational Committee: Japanese Spinal Instrumentation Society
2017-: Spine Disease Committee: Japanese Orthopaedic Association
2018-: Delegate: AO spine Japan
2019-: Editorial Committee: guideline for lumbar canal stenosis

Benefit of full endoscopic in revision spine surgery

Matee Phakawech

S-spine and nerve hospital

Nowadays full endoscopic spine surgery becoming well known and gold standard in some kind of spine pathology. Anyway, revision surgery still challenging for every spine surgeon due to previous surgery can cause scar, fixation failure, adjacent level failure and etc.

Benefit of full endoscopic spine surgery in revision case including

1.Water irrigation can lysis adhesion
2.Clear vision reduces chance of nerve injury
3.Direction of approach easily adjust to avoid instrument obstruction
4.Preserve most of structure in adjacent level failure

This presentation including my experience about full endoscopic surgery in revision spine surgery in various situation

Education and Professional Work

EDUCATION
2005-2011 Medical Doctor
Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok
2013-2017 Orthopaedic Surgery Resident
Department of Orthopaedics, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok
2016 Fellowship of lower limb surgery
ATOS-Praxisklinik Heidelberg, Germany
2017 Fellowship of spine surgery, Tohoku Central Hospital Japan
2018 Fellowship of minimal invasive spine surgery, Aichi spine hospital, Japan
2017-2018 Fellowship of spine surgery
Department of Orthopaedics, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok
APPOINTMENT
2011-2012 Internship, Narathiwasratchanakarin hospital, Narathiwas
2012-2013 Gereral practioner, Nathawee hospital, Songkhla
2018-Present Orthopedic and Endoscopic spine surgeon at S-spine and nerve hospital and Camillian Hospital
MEMBERSHIPS IN PROFESSIONAL SOCIETIES
Medical Council of Thailand
Royal College of Orthopaedic Surgeons of Thailand (RCOST)
Spine Surgery Thailand
Minimal Invasive Spine Surgery Thailand

SCOT for Inferiorly Migrated Disc Herniation

Byapak Paudel

Grande International Hospital,Kathmandu

Inferiorly migrated disc herniation is challenging condition to treat. Different endoscopic techniques are described in different time lines- Foraminoplasty (2008), Suprapedicular (2009), Adjacent Interlaminar (2010, 2018),Contralateral Transforaminal (2011), Transforaminal Epiduroscopic (2016), SCOT (2018), Suprapedicualr Retrocorporeal (2020), Transpedicular(2022)- to treat this challenging condition. Among these techniques SCOT (2018) is gaining popularity. In this presentation step by step SCOT procedure will be elaborated with its advantages and potential encounters during the procedure along with short surgical video.

Note: SCOT= Suprapedicular Circumferential Opening Technique

Education and Professional Work

Present Designation:
Consultant Ortho Spine Surgeon, Assistant Director Spine Services
Former Vice President of Association of Spine Surgeons of Nepal (ASSN) (2022- 2024)
Present Affiliation:
Grande International Hospital,Kathmandu
Qualification:
Fellowship in Minimally Invasive Endoscopic Spine Surgery, MS(Ortho), MD
Awards & Achievements:
Faculty National Board of Medical Specialties (NBMS)- Medical Education Commission (MEC) , Nepal
Consultant of Nepal Health Research Council for Spinal Trauma Registry - Nepal (STR-NP) project
Mentor of Fellowship in Spinal Reconstructive Surgery (FSRS) Program- Grande Int. Hospital
Editorial Board Member of National and International Journals
Peer Reviewer of around 20 Medical Journals
20 influential publications in medical Journals and books (17 in International, 3 in National)
Author in Book Chapters related to Endoscopic Spine
Best Reviewer award First Quarter 2019, Neurospine
NEIWS best presentation award 2021, Nanoori Research
Felicitation as Guest of Honor during Instructional Course in Spine (ICS) 2022
Inspiring Alumni -Telecast of short documentary on my academic achievements by Turkish Radio Television (TRT) 2023

Development of Endoscopic Spine Surgery in Mexico

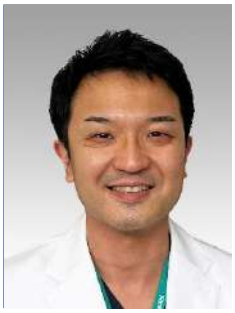
Alfonso García

Institute Name

Endoscopic Spine Surgical procedures have recently gained world wide acceptance but there's still an increased need for training programs that are able to accelerate adoption by a growing number of spine surgeons.
My country has gone through two periods during the timeline since endoscopic spine surgery became available.
A slow adoption between late 90's until 2015, followed by a rapid use and acceptance.
The situation before 2015 was characterized by; lack of exposure to technology, initial failure, low perceived usefulness and low acceptance in return. After 2015, we saw an important opportunity for advocacy, room for growth and development and gain validation amongst our piers. So we decided to design a strategy based on social, organizational and technical needs to implement a solution plan.

Education and Professional Work

Orthopedic Spine Surgeon trained in Microsurgery and Endoscopic Spine Surgery in South Korea at “Wooridul Spine Hospital.” Certified by the Royal College of Surgeons of Edinburgh and a Master Instructor for ESPINEA Americas and Latin America. Director of the Diploma Program in Endoscopic Spine Surgery endorsed by the Autonomous University of Baja California.
Dr. Alfonso García Chávez has 25 years of experience as an Orthopedic Surgeon.
He is an active proponent of Modern Endoscopy for Spine Surgery, with a primary focus on decompression.
Dr.



Clinical Outcomes of Unilateral Biportal Endoscopic posterior lumbar foraminotomy for lumbar foraminal stenosis.

Yuichi Kondo

Aichi Spine Hospital

Background: Unilateral Biportal Endoscopic posterior lumbar foraminotomy (UBE-PLF) are novel minimal invasive surgery for lumbar foraminal stenosis.
Objectives: To examine the clinical outcomes of UBE-PLF.
Methods: Between September 2023 and November 2024, forty patients who underwent UBE-PLF{male: thirty-two female: eight, mean age: 63.1(29-90)} for single-level lumbar foraminal stenosis were investigated retrospectively about surgical time(minutes), blood loss, complications and clinical outcomes.
Results: Mean surgical time was 103.1(55-184), mean blood loss was little and clinical outcomes were improved in each patient. No complication was observed including exiting nerve root (ENR) injury. One patient required Unilateral Biportal Endoscopic lumbar interbody fusion (UBE-LIF) after primary operation.
Discussion: Though we sometimes experienced ENR injury following full-endoscopic posterior lumbar foraminotomy (FE-PLF), no ENR injury was observed in these cases of UBE-PLF. There may be a possibility that UBE-PLF is safer than FE-PLF regarding ENR injury. However one patient of UBE-PLF underwent UBE-LIF as revision surgery. Furthermore study about risk factors of unsatisfactory outcomes is needed.
Conclusions: UBE-PLF improved clinical outcomes. Furthermore study about risk factors of unsatisfactory outcomes is needed.

Education and Professional Work

Mar. 2003 Graduate from the medical department, Shinshu university
Apr. 2003 Dept. of Orthopaedic Surgery, Gifu University
Jul. 2004 Dept. of Orthopaedic Surgery, Gifu Prefectural Gero Hospital
Jan. 2005 Dept. of Anesthesiology, Gifu University
Jul. 2005 Dept. of Orthopaedic Surgery, Obama Municipal Hospital
Apr. 2007 Dept. of Orthopaedic Surgery, Gifu Prefectural General Medical Center
Apr. 2008 Dept. of Orthopaedic Surgery, Hikone Municipal Hospital
Apr. 2011 Dept. of Orthopaedic Surgery, Kizawa Memorial Hospital
Apr. 2016 Dept. of Orthopaedic Surgery, Spine Center, Gifu Municipal Hospital
Apr. 2019 Hachiya Orthopaedic Hospital
Apr. 2022 Aichi Spine Hospital

A Novel Surgical Approach for Hidden-Zone Lumbar Disc Herniation: Contralateral Interlaminar Access via Unilateral Biportal Endoscopy

Cigdem Mumcu

Sultanbeyli State Hospital in Istanbul, Turkey

We report a patient with hidden-zone lumbar disc herniation who underwent discectomy via a contralateral interlaminar approach. The lateral lumbar spinal canal can be divided into several regions: the subarticular, foraminal, and extraforaminal zones. Due to its difficult surgical exposure, some authors refer to part of the subarticular and foraminal regions as the hidden zone. Conventional approaches involve partial or total facet joint resection, introducing the risk of postoperative instability.
The procedure is performed via two separate portal incisions on the opposite side of the lumbar disc herniation. After removing the soft tissue over the spinolaminar junction, a small laminotomy was made in the opposite lamina of the target area. Bony drilling was performed underneath the base of the spinous process until the midline and continued cranially along the lateral border until the edge of the ligamentum flavum was free. The contralateral ligamentum flavum was excised, exposing the contralateral thecal sac, exiting nerve root, lateral recess, and foramen with clear visualization. The herniated disc fragment was found under the exiting nerve root and was carefully removed without retracting either the spinal cord or the exiting nerve root and without violating the facet joint.
In conclusion, although the CIA-UBE approach is not a common surgical technique, it may be considered an excellent surgical option for treating lumbar disc herniation in MacNab's hidden zone without causing iatrogenic instability. A low rate of facet joint reduction, good visualization of the lateral recess, and accurate identification of the midline of the central spinal canal are advantages of the procedure.
Keywords: Biportal endoscopy, Hidden zone, Migrated disc herniation, Lumbar, Contralateral interlaminar approach

Education and Professional Work

BACKGROUND
Dr. Çiğdem Mumcu spent her early years in Karasu, Sakarya. After graduating from Istanbul University Cerrahpaşa Faculty of Medicine in 1999, she completed her specialization in Neurosurgery at Van Yüzüncü Yıl University in 2007. Beginning in 2010, she embarked on an extensive fellowship journey to advance her expertise in "Advanced Spine Surgery and Interventional Pain Management."
This challenging and exciting path started at Umraniye Training and Research Hospital and the American Hospital in Turkey, eventually leading to an international pursuit of knowledge and scientific excellence. Dr. Mumcu trained with renowned experts in Endoscopic (Minimally Invasive) Spine Surgery across various provinces in South Korea. In 2018, under the mentorship of Dr. Sang Kyu Son at Park Weon Wook Hospital in Busan, she gained specialization in Unilateral Biportal Endoscopy (UBE – Biportal Endoscopic Spine Surgery Techniques). In 2023, she further enhanced her expertise in UBE surgery at Cham Podonamu Hospital in Seoul under Dr. Heo Dong Hwa and at Daejeon Woori Hospital under Dr. Cheol Wung Park.
In addition to her proficiency in numerous minimally invasive spinal procedures, she also developed skills in Sacral Epiduroscopic Laser Decompression (SELD) and Percutaneous Stenoscopic Lumbar Decompression (PSLD) surgery through her training with Dr. Kang Taek Lim Good Doctor TeunTeun Hospital in Seoul. At Pohang Wooridul Hospital, she refined her knowledge of Uniportal Endoscopic Spine Surgery under the guidance of Dr. Gun Choi. Moreover, her collaboration with Dr. Atif Malik at the American Spine Center in the United States deepened her perspectives on Regenerative Medicine, Interventional Pain Management, and Endoscopic Spine Procedures. Since 2022, Dr. Mumcu has continued to expand her experience in Minimally Invasive Spine Surgery, working with Dr. Fujio Ito in Inuyama-shi, Japan, and Dr. Malcolm Pestonji in Mumbai, India. She also serves as an instructor at international congresses organized by these esteemed institutions.
Dr. Mumcu is a member of several prestigious professional organizations at both national and international levels, including the Turkish Unilateral Biportal Endoscopy Association, the Korean UBE Society, the International Society of UBE (ISUBE), the Endoscopic Spine Foundation of India (ESFI), the Turkish Neurosurgery Society, the Turkish Spine Society (TOD), AOSpine, and the International High Technology Spine Society (IHTSS).
Dr. Mumcu practices her profession at her private clinic in Istanbul, balancing her professional life with her personal commitments. She is married and a mother of two daughters, cherishing time spent with her family and the joy of discovering new places through travel. She values living a holistic life that integrates her medical expertise, international experience, and professional passions with personal harmony.

Biportal Endoscopic Transforaminal Lumbar Interbody Fusion Using Double Cages

Jwo-Luen Pao

Far-Eastern Memorial Hospital

As in many surgical fields, the minimally invasive surgical (MIS) technique has become the trend in the development of modern spine surgeries. Mini-open transforaminal lumbar interbody fusion has been the gold standard fusion technique for degenerative lumbar diseases for about two decades. With the advancement of equipment, instruments, and endoscopic surgical techniques, we can achieve better treatment outcomes via even smaller surgical wounds and minimal soft tissue injury.
The unilateral biportal endoscopic (UBE) technique is a novel MIS technique using two small wounds to perform spine surgeries. A smaller wound of about 5 mm is used to insert the endoscope and for saline infusion; the other bigger wound, about 10 mm, is used as the working portal to drain the normal saline and passage of various surgical instruments. With the hydrostatic pressure of the normal saline and high-resolution endoscope, we can perform very delicate surgery in a crystal clear and magnified surgical field with almost no bleeding. Adequate neural decompression can be achieved with a very low risk of dural or nerve root injury. The diameter of the endoscope is so small that we can advance it into the disc space to confirm radical resection of the degenerative disc and cartilage endplate while preserving the bony endplate. The sturdy endplate reduces the incidence of cage subsidence and provides robust initial stability. We use two interbody fusion cages and a large amount of bone graft to promote fusion. One PEEK cage and one composite PEEK cage with outer Titanium plates, laminectomy bone chips, and demineralized bone matrix were impacted into the disc space. Those specific features are exclusively for lumbar interbody fusion using the UBE technique. Reduction of the spondylolisthesis can also be achieved using the modern pedicle screws system. The surgical wounds are about 2.5 cm for a one-segment fusion and 4 cm for a two-segment fusion.
From 2019 to 2024, we performed more than 350 BETLIF cases. The clinical data, including ODI, JOA, and VAS scores, showed significant improvement with a very low incidence of complications. In our computed tomography (CT) study 1 year after the surgery, the successful fusion rate was as high as 97.7% with a cage subsidence rate of only 5.5%
BETLIF is a safe, effective, and revolutionary MIS solution for spinal fusion. Its advantages include magnificent surgical fields, direct decompression, minimum blood loss, radical discectomy and endplate preparation under direct visual, bone grafts and cage insertion under direct visual, excellent treatment results with an excellent fusion rate, and few complications.

Education and Professional Work

Education & Training
1989 ~ 1996: M.D., Depart. of Medicine, College of Medicine, National Taiwan University
1998 ~ 2003: Residency, Orthopedic Depart., National Taiwan Univ. Hospital
2002 ~ 2003: Fellowship for Sports Medicine under Prof. Ching-Chuan Jiang and fellowship for spine surgery under Prof. Po-Quan Chen, Orthopedic Department, National Taiwan Univ. Hospital
2005: Fellowship for Minimally Invasive Spine Surgery under Prof. Munehito Yoshida, Wakayama University Hospital, Wakayama, Japan
2015: 1st Traveling Fellowship to Japan, Grant from Taiwan Spine Society (TSS) & Japanese Society for Spine Surgery and Related Research (JSSR)
2022: The 19th National Innovation Award
2023: The Best Presentation Award in the 1st Annual Meeting of the World UBE Society (WUBES).

Employment
2021 ~ : Chair, Depart. of Orthop. Surg., Far Eastern Memorial Hospital (FEMH), New Taipei, Taiwan
2015 ~ : Chief, Division of Spine Surgery, Depart. of Orthop. Surg, FEMH
2024 ~ : Assistant Professor, Ministry of Education, The Republic of China
2008 ~ 2024: Lecturer, Ministry of Education, The Republic of China
2012～2015: Chief for Minimally Invasive Spine Surgery, FEMH
2003 ~ 2012: Attending Surgeon, Depart. of Orthop. Surg, FEMH

Positions in Medical Society
Formal President of the Taiwan Society for Minimally Invasive Spine Surgery 2023 (TSMISS)
Formal President of the Taiwan Society for Endoscopic Spine Surgery 2022 (TSESS)
Board member of the Pan Asian Society for Minimally Invasive Spine Surgery (PASMISS)
Faculty of Society of Minimally Invasive Spine Surgery - Asia Pacific (SMISS-AP)
National and Regional Faculty of the AOSpine Foundation
Member of the North American Spine Society (NASS)
Member of the Taiwan Orthopedic Association
Member of the Taiwan Spine Society

Photo

Title Under Review

Tomoaki Toyone

Institute Name

Abstract Under Preparation

Education and Professional Work

Title Under Review

Byeong Cheol Rim

Department of Neurosurgery RIMS Neuroclinic

Abstract Under Preparation

Education and Professional Work

Education
1994 : M.D., Chungbuk National University College of Medicine, Cheonju, South Korea Postgraduate Training
March, 1994- Feb.1995 : Rotating Internship, Chungbuk National University Hospital, South Korea
March, 1995- Feb 1999 : Residency, Department of Neurosurgery, Chungbuk National University Hospital, Cheongju, South Korea

Positions Held
Feb/19/1999 –Apr/16/1999 : Young cheon Army trainy school, South Korea
Apr.1999~ March/2000 : Chief of Neurosurgery Department, Ildong Army General Hospital(rank : captain), South Korea
April. 2000 – April/19/2002 : Capital protective army division, Republic of Korea
May. 2002 - Jan. 2003 : Director, Department of Neurosurgery, Hankuk General Hospital, Cheongju, South Korea
Feb. 2003- Jun.2005 : Director of Neurosurgery Department,
Hana General Hospital, Cheongju, South Korea
Sep. 2005 –Aug. 2006: Research Fellow of Spine Surgery, Department of Orthopedic surgery SUNY Upstate Hospital, Syracuse, NY, USA
Sep. 2006- May.2008 : Director, Department of Neurosurgery and Spine Center Hana General Hospital, CheongJu city, South Korea
July.2008-Aug.2008 : Cheonan Woori Spine Hospital
Sep.2008 – Dec.2010 : Assistant professor, Department of Neurosurgery ChungBuk Natrional University, College of Medicine
Jan. 2015 ~ : A outpatient professor of ChungBuk National University Hospital
Jan.2011 ~ Feb. 2019 : Director of Spine Center, Sun General Hospital, DaeJeon city, South Korea
March.2019 ~ Oct. 2019 : Clinical Staff, Pohang Wooridul Hospital
Oct. 2019 ~ Apr. 2020 : Director, Department of Neurosurgery, S Seoul Hospital
Apr.20 2020 ~ Aug. 31.2021 : Director, Department of Neurosurgery, MadiSarang Hospital, Cheongju-city, South Korea
Oct.21.2021 ~ Now : CEO of RIMS Neuro-Clinic, Cheongju-city, South Korea

Licensure and Certification
Licensed to Practice Medicine in Korea, 1994
Korean Board of Neurosurgery, 1999
Master of medicine (ChungBuk National University, College of Medicine), 1997
PhD. ChungBuk National University, College of Medicine, 2007

I hereby declare that the above statement is true and correct in everything of my knowledge.
Byeong Cheol Rim MD, PhD

Contralateral Approach via Rostral Laminotomy (CARL): A Novel Technique in Unilateral Biportal Endoscopy for Treating Highly Migrated HIVD

Lee Cheng Ying

Taichung Veterans General Hospital

Introduction:
Highly migrated herniated intervertebral discs (HIVD), especially those located in Lee's classification Zone 1 and Zone 4, have traditionally been addressed via interlaminar or translaminar approaches. In full-endoscopic surgery, transpedicular techniques have also been described. However, these methods often require extensive bony work, potentially impacting spinal stability in the long term and increasing the risk of pars fracture. We present a novel technique—Contralateral Approach via Rostral Laminotomy (CARL)—using Unilateral Biportal Endoscopy (UBE) to remove highly migrated HIVD through a minimal laminotomy window on the rostral side of the lamina.

Methods:
Seven patients (6 men, 1 woman; mean age 63.8 ± 18.3 years) underwent CARL between September and December 2024. Through a small rostral laminotomy, a contralateral endoscopic approach was used to reach HIVD fragments in the pedicular or infrapedicular region. Operation times averaged 52 ± 8.3 minutes. Clinical outcomes were evaluated using the Visual Analog Scale (VAS) for leg pain, length of hospital stay, and imaging follow-up with MRI and CT.

Results:
Mean preoperative leg VAS of 7.2 ± 0.82 improved significantly to 1.8 ± 0.44 postoperatively. All patients were discharged on postoperative day 1. Follow-up MRI confirmed complete removal of the herniated disc fragments, and CT demonstrated that the mean laminotomy area was 1.16 ± 0.04 cm^2, indicating minimal bony destruction.

Conclusion:
This case series demonstrates the feasibility and efficacy of the CARL technique in UBE for highly migrated HIVD. By exploiting a small rostral laminotomy and approaching contralaterally, surgeons can access and remove disc fragments with minimal disruption to bony structures, potentially preserving long-term spinal stability.

Education and Professional Work

Education:
Bachelor of Medicine, China Medical University
Resident, Department of Neurosurgery, Taichung Veterans General Hospital
Chief Resident, Department of Neurosurgery, Taichung Veterans General Hospital
Research Experience:
1. Research Fellow (2023), Royal Australasian College of Surgeons, specializing in Biportal Endoscopy
2. Research Fellow (2024), Aichi Spine Hospital, Japan, specializing in Unilateral Endoscopy
3. Research Fellow (2023-2024), Daejeon Woori Hospital, South Korea, specializing in Biportal Endoscopy
Awards and Achievements:
1.NeuroSpine Conference International Young Spine Surgeon Award 2024.
2.11th Outstanding Neurosurgery Resident Award, Stroke Prevention and Treatment Foundation.
3.2nd Taiwan Society of Minimally Invasive Spine Surgery: Innovation Excellence Paper Award
4.1st Taiwan Society of Minimally Invasive Spine Surgery: Best Surgical Video Award

Surgical Treatment of Intradural Lesions Using UBE

Seongjoo Lee

Nano Hospital

Study Design: A retrospective study

Background: In general, intradural lesions in the spine are relatively rare. and there are various treatment options. I have managed the intradural lesion with UBE, and in this study, I evaluate my clinical outcomes to determine therapeutic efficacy and safety.

Objective : The treatment of choice for intradural lesions of the spine is gross total resection (GTR). The aim of this surgery is to demonstrate that endoscopic GTR with UBE is a promising alternative treatment for intradural lesions.

Materials and Methods : Four patients diagnosed with intradural lesions were enrolled in this study. All of them underwent endoscopic GTR using UBE. The surgical procedure consists of laminectomy, flavectomy, triportal creation, durotomy, tumor resection, and dural repair. The surgical outcomes were assessed using the visual analog scale (VAS) and postoperative MRI. Postoperative complications were assessed as well.

Results: I successfully performed endoscopic GTR in all four patients. The preoperative mean VAS significantly decreased after surgery. Postoperative clinical outcomes were excellent in two patients and good in the other two.
There was a mild postoperative complication, such as transient numbness, but symptoms improved spontaneously. Postoperative MRI and CT revealed sufficient neural decompression at the treated segments in all patients. Postoperative ambulation was initiated on the first day after surgery.

Conclusion: Compared with open surgery, endoscopic gross total resection of intradural lesions could be challenging. But this technique is effective for the removal of intradural lesions and for preserving posterior spinal elements.

Education and Professional Work

The Current Director of Nano Hospital
Orthopedic Spinal Surgeon
Graduated from Pusan National University College of Medicine.
Outpatient professor at Pusan National University Hospital.
Outpatient professor at Inje University (Busan Paik Hospital.

- Asia Pacific Training Center Cadever Workshop,
- KOMISS Cadever Spine Wokrshop
- American Academy of Orthopedic Surgeons(2005),Washington, USA
- American Academy of Orthopedic Surgeons(2006),Chicago,USA
- Stryker Pacific Training Course(2009),University Malaya Center, Kuala Lumpur
- Scorpio NRG & Navigation Training Course(2010),Shanghai
- Triathlon Tritanium & Revision Course(2018), Homer Stryker Center, Newyork, USA
- North American Spine Society(NASS) membership

Surgical skill qualification system and nationwide survey on complications of endoscopic spine surgery in Japan

Akira Dezawa

Akira Dezawa PED Clinic

The steps to establish an endoscopic surgical skill qualification qualification (ESSQ) system were started in 2002 and this system was launched at the Japanese Orthopaedic Association (JOA) in 2004, ESSQ is judged by two separate judges who watch the unedited video clips submitted by the applicants. If the video clip is not accepted by both judges, it will be judged by a third judge. Since the establishment of the ESSQ 1-type (anterior technique) 2 surgeons , 2-type (posterior technique) 172 surgeons 3-type (percutaneous endoscopic spinal technique) 48 surgeons have been certified. There is 1 surgeon who has obtained 1-3 types, and 11 surgeons who have obtained 2-3 types. The pass rate for each individual technique is not disclosed. JOA has conducted a nationwide survey on the current status of endoscopic spine surgery in Japan every year since 2006. We sent questionnaires to all spine surgery hospitals in Japan and received responses from an average of 1,265 hospitals (946-170) each year. The average response rate for the survey was 63.7% (45.2-85.8%), of which the average number of facilities performing endoscopy was 314 (222-415). Incidental dural injuries accounted for 65.4% (3113/4758) of all complications over a 15-year period, significantly higher than nerve root cauda equina injuries (4.60%) and hematomas (10.0%). Analysis of the incident level of dural injury showed that of the 4273 total incidents, 154 (3.6%) were 3B-5 incidents, which are accident that cause harm to the patient, and 4 (3.6%) were 1-3A incidents. The incident level of 3b-5 was significantly lower than that of hematoma (75.5%) and nerve root cauda equina injury (49.52%). This system is designed to provide accreditation of sufficient skills to surgeons for the purpose of facilitating endoscopic spinal surgery progress in an appropriate direction. We believe that this system will ensure the provision of safe and reliable endoscopic spinal surgery.

Education and Professional Work

Education:

1974-1980 University of Chiba
Awarded the degree of medical doctor
1982-1986 Department of orthopaedic surgery, University of Chiba
Awarded the degree of PhD in spinal cord injury for a thesis entitled "Quantitative analysis of spinal cord injury using the isopotential spinal cord surface mapping ".work supervised by professor Shunichi Inoue.

Work Experience

2014-present Visiting professor Teikyo University
Chairperson board of directors of medical corporation Meiryukai
2006-2014 Deputy director Teikyo University School of Medicine,Mizonokuchi hospital
2004-2014 professor Department of Orthopaedics ,Teikyo University School of Medicine,Mizonokuchi hospital
1996-2004 Associated professor, Department of Orthopaedics ,Teikyo University School of Medicine,Mizonokuchi hospital

Academic position

PASMISS(The Pacific Asian Society of the Minimally Invasive Spine Surgeries) 2nd president(2001)
Japan Society for the Study of Spinal Endoscopy 1st President (1999)
Japanese Minimally Invasive Orthopaedic Society 9th President(2006)
Japan PED Society 1st-4th President
7thWCMISST 7th President(2020)
ISMISS Japanese represent
SICOT member

Award(International)

JSES Karl Stort prize 2003
IITS Best poster 2007
ISMISS Turkey Best paper 2010

Editorial board

European Spine Journal
Annals of Orthopedics & Rheumatology
ISRN Minimally Invasive Surgery
Journal of Orthopedic Science

Educational Value of the Exoscope in Posterior Cervical Fixation

Akira Itoi[1], Tomoya Kojo[1], Yuya Ishii[1], Kentaro Miura[1], Osamu Obayashi[1]
Yukoh Ohara[2], Hidetoshi Nojiri[2], Muneaki Ishijima[2]

1) Department of Orthopaedic Surgery., Juntendo University. Shizuoka Hospital
2) Department of Orthopaedic Surgery., Juntendo Hospital

Recently, exoscope-assisted procedures have garnered increasing attention in the field of spine surgery. Multiple reports have emphasized their potential benefits. Our institution has introduced this method and gradually incorporated it into spinal procedures. From our initial experience, we have noted distinct educational advantages, particularly in posterior cervical fusion. By employing the exoscope, the supervising surgeon can provide intraoperative guidance from outside the operative field. In this study, we present three cases of posterior cervical fusion performed under exoscopic visualization. We also evaluate the educational value of this approach.

Education and Professional Work

EDUCATION:
1998 Graduated from Juntendo University, Medical School (Tokyo)
2017 Graduated from Kyoto University, School of Public Health (Kyoto)
LICENSURE and CERTIFICATION:
National Board of Medicine, Registration No. 395814
Japanese Board of Orthopedic Surgery No. 117613
Board-certified Spine Surgeon (approved by the Board of the Japanese Society for Spine Surgery and Related Research) No. 11603
Work Experience:
1998 Orthopedic Surgery of Juntendo University
2000 Orthopedic Surgery of Koshigaya Hospital
2001 Orthopedic Surgery of Kanto Rosai Hospital
2004 Orthopedic Surgery of Juntendo Shizuoka Hospital
2004 Orthopedic Surgery of Izu Hoken Hospital
2005 Orthopedic Surgery of Juntendo Shizuoka Hospital
2005 Orthopedic Surgery of Izu Hoken Hospital
2006 Orthopedic Surgery of Juntendo Shizuoka Hospital
2016 Enrolled in Kyoto University, School of Public Health
2017 Orthopedic Surgery of Juntendo Shizuoka Hospital
MEMBERSHIPS:
Japanese Orthopedic Association
Japanese Society for Spine Surgery and Related Research
Japan Osteoporosis Society
Japan Society for Study of Surgical Technique for Spine and Spinal Nerves
HONORS and AWARDS:
2009 Best Pater Award of the Japan Society for Study of Surgical Technique for Spine and Spinal Nerves
2023 Reviewer of the Month of Journal of Spine Surgery, October 2023.
Development Products:
3D Parallel Adjuster Tanaka Medical Instrument Co.,Ltd.
Medical device manufacturing and sales registration number: 13B1X00274000164
MDN code：70963001
MAJOR RESEARCH INTERESTS:
Spine surgery: Degenerative spine, Spinal trauma, Osteoporotic Vertebral Fracture

Title Under Review

Ayhan Cömert

Department of Anatomy Ankara University

Abstract Under Preparation

Education and Professional Work

PERSONAL DETAILS:
Address: Department of Anatomy Ankara University, School of Medicine
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Profession: Professor of Anatomy
Nationalit: Turkish
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Cellular Phone: +90 535 8467218
Awards
•ISMISS Turkey 2011 Innovative research award, ISMISS Turkey Congress, Antalya, Turkey ("Morphometry and Anatomy of the Lumbosacral Dorsal Root Entry Zones")
•Ankara University, School of Medicine, "Prof. Dr. Hikmet Yavuz" Best research award, 2008
•The American Society of Colon and Rectal Surgeons: The ASCRS Barton Hoexter, MD, Best Video Award: "Perineal anatomy for colorectal surgeons", 2016
PROJECTS
The Scientific and Technological Research Council of Turkey TÜBİTAK 104S402 SBAG SBAG-AYD-479 Yumuşak ve sert doku malzeme deney sistemine elektronik veri toplama biriminin eklenmesi 2005 /2006
Turkish Neurosurgical Society Türk Nöroşirürji Derneği Araştırma Projesi. Deneysel akut omurilik yaralanmasında (spine injury) granülosit koloni stimülan faktörün (GCSF) antiinflamatuar etkisi 2007
Celal Bayar University Research Projects, Celal Bayar Üniversitesi Bilimsel Araştırma Projesi Tıp 2005- 47 Sıçan beyninde fokal iskeminin matriks metaloproteinaz ve ekstraselüler matriks proteinlerinin dağılımlarına etkisinin immunohistokimyasal yöntemle değerlendirilmesi 2005/2007
The Scientific and Technological Research Council of Turkey TÜBİTAK 108S075 İnsan dişsiz çene kemiklerinin mikromekaniksel özelliklerinin incelenmesi 2008/2011

Pioneering XR Solutions for Spinal Procedures: AppleVisionPro Adoption and Sustained Growth

Wataru Narita[1], Kentaro Yamane[2]

[1]Kameoka Municipal Hospital Spine Center
[2]Department of Orthopaedic Surgery, National Hospital Organization Okayama Medical Center

Objective
This study examines the challenges associated with developing XR technology and maintaining its business viability, with a focus on using AppleVisionPro (released in February 2024) and exploring its potential applications.
Methods
In 2016, we developed the first XR simulator for percutaneous pedicle screw insertion in the lateral decubitus position, in collaboration with a company in which the authors were involved. In 2017, we employed the system as a surgical support device, enabling remote conference capability in a shared virtual space via the internet. For accuracy verification, we performed screw insertion under intraoperative CT synchronization using cadaver specimens. In 2024, we created a prototype XR application compatible with the newly released AppleVisionPro. Leveraging its high-resolution display and voice command features, we aimed to improve operability and enhance the surgeon's view of the surgical field.
Results
The system allows for overlaying patient-specific anatomy and preoperative screw or cage trajectories onto the surgical field. In 2020, the XR system obtained medical device certification, and advances in hardware improved the user interface. However, device-only solutions did not achieve sufficient accuracy for safe clinical application. Meanwhile, compatibility with AppleVisionPro, which offers enhanced display quality and sensor capabilities, showed promise for better adaptation to hand movements and gaze shifts. Preliminary prototypes indicated more intuitive operation and improved perception of 3D information in the surgical field.
Conclusion
Current XR technology is useful for surgical support, education, and communication, yet challenges remain in terms of accuracy and practical application. The introduction of high-performance devices like AppleVisionPro, released in 2024, could further improve headset operability, field of view, and display accuracy. Moving forward, leveraging these new devices' features to their fullest will require dedicated software development, strategies to reduce physical strain on surgeons, and improvements in spatial awareness. For ensuring safety and accuracy, combinations with intraoperative navigation and AI-driven image analysis are imperative. Addressing these technical issues will lead to higher-precision, more versatile XR surgical support technologies, contributing to long-term business sustainability.

Education and Professional Work

Jichi Medical University (B.S., 2003) Kyoto Prefectural University of Medicine, M.D.
Director of Spine Surgery Center, Kameoka City Hospital
Born in Kyoto in 1977, graduated from Jichi Medical University in 2003, and received his Doctor of Medicine from Kyoto Prefectural University of Medicine in 2017. While engaged in medical care in remote areas, he has been developing new surgical techniques and instruments by applying IT technology, including obtaining patents on surgical instruments and developing smartphone applications. 2017, he started spine treatment using virtual reality (VR) for the first time in Japan. 2018 October, he established the Spine He is planning to be the president of the MIST Society in 2026.

Professional Services
Nov 2023 - present Secretary, Japanese Association for Minimally Invasive Spine Surgery (JASMISS)
July 2023 - present Director, International Society for the Advancement of Spine Surgery, Asia-Pacific Section (ISASS AP)
April 2021 - present Vice-Chair, Public Relations Committee, Japanese Society for Instrumentation Research
Apr 2021 - present Public Relations Committee Member, Japanese Society for Spine Surgery
Jan 2020 - present Sponsor, Japanese CAOS Society
Jan 2019 - present Director and councilor, Minimally Invasive Spinal Treatment (MIST) Society
Jan 2018 - present Chair of Public Relations Committee and Chair of Medical Device Committee, Minimally Invasive Spinal Treatment (MIST) Society
Jan 2017 - present Sponsor, Kansai MISt Study Group

Work experience
2003 Resident, Kyoto Prefectural University of Medicine
2005 Member of Orthopedic Surgery Department, Nantan Public Hospital
2007 Medical Director, Kyotango Kumihama Hospital
2009 Medical staff, Kyoto Prefectural Yosanoumi Hospital
2013 Deputy Director, Spine and Spinal Cord Disease Center, Nantan Public Hospital
2015 Chief, Spine and Spinal Cord Surgery Center, Midorigaoka Hospital
2018 Director, Spine Surgery Center, Kameoka City Hospital

Navigation assisted full endoscopic spine surgery: Design, Workflow, and Clinical Application

Yasushi Shin

Osaka International Medical & Science center Osaka Keisatsu Hospital

Introduction
Minimally invasive procedures and technologies can be broadly characterized as traditional open procedures and approach that involve small incisions, fine-needle procedures, endoscopy, and miscellaneous technologies. We review our experiences of minimal access spine surgery and concepts in the Hybrid operation room.

Materials and Methods
The procedures were performed in a hybrid operating room using C-arm cone-beam computed tomography (CT) equipped with a laser-guided navigation system (Artis Zeego, SIEMENS and CURVE navigation system, Brain Lab). Since November 2016, 357consecutive patients have undergone a neurosurgical procedure in this operating room. Cases (Tumor removal, Decompression, Fixation) are selected and designed according to minimally invasive concept. The efficacy and safety of the procedures were assessed.

Results
The surgical procedure to which the minimally invasive concept was applied was classified as follows: 1) anatomical and physiological consideration with preoperative Simulation. 2) Minimal radiation exposure 3) Tailored approach with the AR image 4) Safe and precise navigated instrumentation 5) real time navigation for full endoscopic spine surgery 6) Ergonomic compatibility with a head mount display

Conclusion
The use of modality has made it possible to utilize endoscopic surgery for the complex pathology.

Education and Professional Work

1996-2002 the department of Neurosurgery, Nara Medical University
2003 assistant professor, the department of Neurosurgery, Nara Medical University
2004 assistant head physician, the department of Neurosurgery, Osaka Police Hospital
2008 head physician, the department of Neurosurgery, Nara prefectural Nara hospital
2012 assistant director, the department of Neurosurgery, Higashiosaka City General Hospital
2013 Lecturer, the department of Neurosurgery, Nara Medical University
2014 Charité – Universitätsmedizin Berlin ,Neurochirurgische Klinik
2015 Vice director, the department of neurosurgery, Osaka police Hospital

License and Certification
Japanese Board of Neurosurgery
The Japan Stroke society
Japanese Society for Neuroendoscopy
Endoscopic spine surgery
Japanese Society for Minimally-invasive and Endoscopic Technique of Spinal Neurosurgery(JASMETS)

Surgical techniques of total en bloc spondylectomy (TES) by single posterior approach

Hideki Murakami

Department of Orthopaedic Surgery, Nagoya City University

Conventionally, curettage or piecemeal excision of the vertebral tumors has been commonly practiced. However, clear disadvantages of these approaches include high risk of tumor cell contamination to the surrounding structures and residual tumor tissue at the site due to difficulty in demarcating tumor from healthy tissue. These contribute to incomplete resection of the tumor as well as high local recurrence rates of the spinal malignant tumor. To reduce local recurrence and to increase survival, total en bloc spondylectomy (TES) has been developed. The TES operation was designed to achieve oncological complete tumor resection in en bloc including main and satellite micro-lesions in a vertebral compartment to avoid local recurrence. Using this technique, we are able to excise the tumor mass together with a wide or marginal margin. This lecture presents our surgical technique of TES for primary malignant and metastatic tumors of the spine.

Education and Professional Work

EDUCATION:
2001 Ph.D. (Dr. of Medical Science),
Graduated from Postgraduate School, Kanazawa University School of Medicine
1993 M.D.,
Graduated cum laude, Kanazawa University School of Medicine
1987 Graduated from High School

LICENSURE & CERTIFICATION:
National Board of Medicine, Registration No.354991
Japanese Board of Orthopaedic Surgery, Certificate No.115361
Board-certified Spine Surgeon approved by the Board of the Japanese Society for Spine Surgery and Related Research, Certificate No. 10168

FELLOWSHIP OR STUDY ABROAD:
1999/Jan - 2001/Jan
Research fellow, The Emory Spine Center, Emory University School of Medicine
(by Scholar of Yoshida Scholarship Foundation)
2007/Oct – 2007/Nov
Asia Traveling Fellowship (visited Beijing and Hong Kong)
(Japanese Society for Spine Surgery and Related Research)
2010/Nov
HKOA (Hong Kong Orthopaedic Association) Traveling Fellowship
(Japanese Orthopaedic Association)

ACADEMIC APPOINTMENTS:
2010/Jul. - 2019/Jan.
Associate Professor of Department of Orthopaedic Surgery, Kanazawa University
2019/Feb. - present
Professor and Chairman of Department of Orthopaedic Surgery, Nagoya City University
2015/Mar. - present
Visiting Professor, Khon Kaen University, Thailand
2017/Sep.
Visiting Professor, Chiang Mai University, Thailand

Minimal Invasive Spinal (MIS) Techniques for Vertebral Body Compression Fractures

Farnad Imani

Professor of Anesthesiology, Chairman of Pain Research Center,
Iran University of Medical Sciences, Tehran, Iran

Osteoporotic vertebral compression fractures (VCFs) are a common cause of acute pain in elderly. Minimally invasive vertebral augmentation procedures such as vertebroplasty and balloon kyphoplasty by injecting cement into the osteoporotic VCFs have been widely used to treat symptomatic and painful osteoporotic VCFs. The primary clinical goal of augmentation is pain reduction, reduced disability, and enhanced quality of life.
The major complications arising from vertebroplasty or kyphoplasty are related to leakage of cement into the epidural space and neural foramina with resultant cord compression and radicular pain. There is also a risk of pulmonary embolism should cement enter the paravertebral venous plexus. Kyphoplasty compare to vertebroplasty provides a better height restoration of the fractured vertebra and a lower risk of severe complications.
In the case of involvement of the posterior edge of the vertebral body, expandable titanium mesh cage has provided an interesting alternative for vertebroplasty and kyphoplasty, due to absence of cement leakage by using this system. Subsequent fractures are a potential complication, possibly due to the relatively high stiffness of cement. Silicone as an augmentation material has biomechanical properties closer to those of bone and might be an alternative to cement into the vertebral body.
Recent technological advances combined with innovative interventional techniques can now offer alternative less invasive treatment options for many patients with VCFs. There are several new implants for OVCFs, including Vertebral Body Stenting, Vesselplasty, Spine Jack, and Kiva. The vertebral body stenting system consists of a balloon and titanium stent, simultaneously delivered into the vertebra and maintains the height of the cavity. Vesselplasty is an effective alternative to BKP, composed of a special polyethylene terephthalate container (Vessel-X) instead of a balloon. A Spine Jack is a retractable titanium expander used to restore compressed vertebrae. The unexpanded Spine Jack is cylindrical to facilitate vertebral implantation. The Kiva system was designed to prevent bone cement leakage by surrounding bone cement. It is composed of a Nitinol guidewire and a spiral PEEK implant to block bone cement.

Education and Professional Work

Prof Farnad Imani is currently Chair of Pain Research Center in Iran University of Medical Sciences (IUMS), with twenty seven years' experience in academic postgraduate teaching in anesthesiology and pain medicine. He is founder of academic pain fellowship in Iran at 2006. His research interest includes chronic and acute pain managements, and has a special interest in the percutaneous, endoscopic, and minimal invasive procedures for spinal pain. Prof Imani is founder and past Editor in Chief of Anesthesiology and Pain Medicine journal from 2011-2022.

Tran-Sacral Canal Plasty (TSCP) for Symptomatic Lumbar Spinal Canal Stenosis

Kei Miyamoto

Gifu Municipal Hospital

Tran-Sacral Canal Plasty (TSCP) is one of the super minimally invasive treatments for Symptomatic lumbar spinal canal stenosis. We started this procedure on January, 2024 and have accumulated approximately 90 cases treated by TSCP. Our impression is that, this procedure can provide patients with not a small amount of satisfaction, taking its super minimally invasiveness into account. We report technical tips, clinical outcomes, and several problems of TSCP.

Key words
Lumbar Canal Stenosis
Trans-Canal Sacral Plasty (TSCP)
Super Minimally Invasive Spinal Treatment
Intra-Spinal Canal Treatment (ISCT)

Education and Professional Work

Personal History
1964 Born in Ohtake City, Hiroshima, Japan
1990 Graduated from Gifu University School of Medicine
1991 Medical staff, Department of Orthopaedic Surgery, Gifu University School of Medicine
1999 Assistant Professor, Department of Orthopaedic Surgery, Gifu University Graduate School of Medicine
2000 Exchange fellowship of Société Franco-Japonaise d'Orthopédie, at Bordeaux University and Marseille University, France
2003-2006 Visiting Instructor, Rush University Medical Center, Chicago, USA
2007 Associate Professor, Department of Reconstructive Surgery for Spine, Bone and Joint, Gifu University Graduate School of Medicine
2014 Associate Professor, Department of Regional Medicine and Musculoskeletal Science, Gifu University Graduate School of Medicine
2015 Director of Orthopaedic Section, Gifu Municipal Hospital
2015 Visiting Professor, Department of Orthopaedic Surgery, Gifu University School of Medicine

Awards
1996 ASB Clinical Biomechanics Award, American Society of Biomechanics
2006 New Investigator Recognition Award, Orthopaedic Research Society
2006 Russell Hibbs Award for the Best Basic Science Paper, Scoliosis Research Society
2006 Basic Science Research Award 3rd Prize, Cervical Spine Research Society
2013 Best English Poster Presentation Award, Japanese Spine Research Society
2015 Excellent E-Poster Presentation Award, Japanese Research Society for Anterior and Lateral Approach Spine Surgery
2018 Excellent E-Poster Presentation Award-Silver Prize, Japan Society for the Study of Surgical Technique for Spine and Spinal Nerves
2019 Best Poster Presentation Award, International Minimally Invasive Spine Stabilization Congress
2025 Best Oral Presentation Award, Japanese Research Society for Anterior and Lateral Approach Spine Surgery

Academic Societies
Delegate and Member, Japanese Orthopaedic Association
Board Member, Japanese Society of Spine Related Research
Board Member, Japan Spine Instrumentation Society
Board Member, Japan Society for the Study of Surgical Technique for Spine and Spinal Nerves
Board Member, Japanese Research Society for Anterior and Lateral Approach Spinal Surgery
Board Member, Japan Society of Minimally Invasive Spine Stabilization
Board Member, Japanese Society for Adult Spinal Deformity
Board Member, Central Japan Association of Orthopaedic Surgery & Traumatology
Board Member, Tokai Association for Spine and Related Research
Delegate, AO Spine Japan
Member, Japanese Scoliosis Society
Member, Société Franco-Japonaise d'Orthopédie

Unilateral Biportal Endoscopy for Revision Decompression Surgery in Lumbar Canal Stenosis

Kazuhiro Yoshimura[1], Shougo Fukuya[2], Masaaki Taniguchi[2]

1) Yoshimura Brain and Spine Clinic 2) Osaka Neurological Institute

Background and Objective:
Revision decompression surgery (ReD) for lumbar spinal stenosis (LSS) following primary decompression surgery (LSS-PD) poses an increased level of difficulty and risk due to tissue adhesions and anatomical changes. This study evaluates the efficacy of Unilateral Biportal Endoscopy (UBE) in selected cases of ReD for LSS-PD.

Methods:
Between April 2023 and November 2024, three patients who underwent UBE-ReD for LSS-PD were retrospectively analyzed. Patient demographics, pre- and postoperative JOA scores, improvement rates, operative time, complications, and postoperative hospital stays were assessed.

Results:
The mean age was 70.3 years (range: 59–79). The decompression levels were L3/4 in two cases and L4/5 in one case. The mean JOA score improved from 17 preoperatively to 24 postoperatively, with an average improvement rate of 57%. The mean operative time was 120 minutes (110–140), and the average hospital stay was 3.6 days (2–6). One case of dural tear was observed.

Conclusion:
In UBE-ReD for LSS-PD, detaching soft tissue from the dural sac proved challenging, even with continuous irrigation. However, accurate intraoperative orientation was possible with fluoroscopic guidance. The expanded visual field facilitated safe bony exposure and decompression. UBE-ReD is considered a viable surgical option for LSS-PD cases.

Education and Professional Work

Education
April 1995 – March 2001: Osaka City University, Faculty of Medicine (M.D.)
April 2007 – March 2011: Osaka University Graduate School of Medicine (Ph.D.)

Professional Experience
May 2001 – March 2002: Department of Neurosurgery, Osaka University Hospital
April 2002 – March 2013: Neurosurgeon, Osaka Prefectural Adult Disease Center, Iseikai General Hospital, Yukioka Hospital, and others
April 2013 – March 2023: Department of Neurosurgery, Osaka Neurological Institute
May 2023 – Present: Yoshimura Neurosurgery and Spine Clinic (Director)

Transforaminal Percutaneous Endoscopic Foraminoplasty and decompression for Symptomatic Contralateral Foraminal Stenosis after lumbar interbody fusion

Xi Chen

Dept. of Spine Surgery The First Affiliated Hospital of USTC

Objective:The most common cause of contralateral symptoms after lumbar interbody fusion is contralateral foraminal stenosis. this retrospective study aimed to assess the effectiveness of transforaminal percutaneous endoscopic foraminoplasty and decompression in patients with contralateral radiculopathy after lumbar spinal fusion.
Methods: Clinical data from 18 patients with contralateral radiculopathy due to foraminal stenosis after lumbar spinal fusion surgery between January 2017 and September 2023 were retrospectively analyzed. Endoscopic foraminoplasty and decompression for these patients after unsuccessful conservative treatments.The average follow-up time was 38.6 months, minimum 6 months. Outcome data at each visit included MacNab criteria, visual analog scale (VAS), and Oswestry Disability Index (ODI).
Results: The average leg VAS improved from 8.5 ± 1.8 to 2.1 ± 0.7 ($P < 0.005$). according to the MacNab criteria, 12 patients had excellent outcomes, 5 had good outcomes, one had a fair outcome, and none had poor outcomes, success rate of 94.4%. There was one patient had leg numbness caused by dorsal root ganglion injury, but improved after 3 months。 Conclusion: Foraminal stenosis is the most common cause of contralateral radiculopathy after lumbar spinal fusions,and transforaminal endoscopic technique is a effective treatment for this patients, it avoids going through the previous surgical approach and decrease complications .

Education and Professional Work

EDUCATION/ TRAINING
09/2016-07/2019 Doctoral Degree, Nanjing University Medical School
09/2013-07/2016 Master Degree, Nanjing University Medical School
09/2008-07/2013 Bachelor Degree, Nanjing University Medical School

RESEARCH INTERESTS:
Basic and clinical research of spinal deformity and intervertebral disc degeneration diseases.

PROFESSIONAL EXPERIENCE
01/2021-present Attending doctor, Dept. of Spine Surgery, The First Affiliated Hospital of USTC
08/2019-12/2020 Resident, Dept. of Spine Surgery, The First Affiliated Hospital of USTC

Minimally Invasive Spinal Treatment (MIST) for spinal disorders -Focusing on new technologies-

Ken Ishii

Director, New Spine Clinic Tokyo

The field of Minimally Invasive Spine Treatment (MIST) has made remarkable progress over the past 20 years. In conservative treatment, notable advancements include the development of physical therapy and drug therapy. In surgical procedures, endoscopic techniques such as MED, FESS, and DPEL have become widespread since 1998, while percutaneous pedicle screws (PPS) have evolved from the first generation in 2005 to the fourth generation today.
Notably, the fourth generation has surpassed previous models, incorporating PPS placement without tapping and introducing set screws with double-lead design. The cervical artificial disc replacement, introduced in 2017, helps prevent adjacent segment disease, while XLIF ACR enables localized lordosis correction, reducing the fixation range. VBS, an advanced version of BKP, supports the restoration of collapsed vertebrae through the use of stents. Augmented screws prevent loosening and back-out. In surgical navigation, O-arm navigation remains mainstream. However, in 2022, the AR navigation system ClarifEye was introduced for the first time outside Europe, specifically in Japan.
All these advancements align with the global trend of MIST, which benefits patients, healthcare professionals, and healthcare economics alike. Moving forward, it is up to us to determine whether these technologies will be fully utilized or left untapped.

Education and Professional Work

EDUCATION
1993 M.D. Keio University School of Medicine
2002 Ph.D. Keio University School of Medicine
2000-2002 Postdoctoral Fellow, Department of Neuroscience, Georgetown University Medical Center
2002-2003 Postdoctoral Fellow, Department of Radiology, Center for Molecular Imaging Research, Massachusetts General Hospital/ Harvard Medical School
HONORS/ AWARDS
2009 Grant of Japan Orthopaedics and Traumatology Foundation
2009 Asia Traveling fellowship (Japanese Society for Spine Surgery and Related Research) 2009
2010 1st Cervical Spine Research Society Asia Pacific Section (CSRS-AP) Poster Award 2010
2010 The 25th Annual Research Meeting of the Japanese Orthopaedic Association Poster Award 2010
2010 The 7th Research Meeting of the International Orthopaedic Association NIRA
2011 1st Keio Intellectual Property Award 2011
2012 The American Academy of Orthopaedic Surgeons (AAOS) Guest Nation Poster Award 2012
2012 The Japanese Orthopaedic Association Encouragement Award 2012
2013 The 59th Annual Research Meeting of Orthopaedic Research Society
2015 Cervical Spine Research Society (CSRS) travelling fellowship 2015
2015 The 30th Annual Research Meeting of the Japanese Orthopaedic Association Poster Award 2015
2017 Scoliosis Research Society Annual Meeting Russell A. Hibbs Basic Research Award, etc
SPECIALITY
Cervical disorders, Minimally invasive surgery, lateral interbody access surgery, Endoscopic surgery, Ossification of posterior longitudinal ligament and yellow ligament, Degenerative diseases, Spine tumors, Spinal cord and Cauda equina tumors, Spinal deformity, CT- based navigation, Dropped head syndrome, Anti-aging and Regenerative medicine for musculoskeletal system, etc
EDITORIAL BOARD PLOS ONE: ACADEMIC EDITOR, SIENTIFIC REPORTS: ACADEMIC EDITOR, ASIAN SPINE J: EDITORIAL BOARD, JOURNAL OF ORTHOPAEDIC SCIENCE: EDITORIAL BOARD, CONTEMPORARY SPINE SURGERY: EDITORIAL BOARD, SPINE SURGERY AND RELATED RESEARCH (SSRR): EDITORIAL BOARD

Current progress and Future Directions of Cervical Endoscopic Spine Surgery.

Kangtaek Lim

AIN Hospital, Incheon, Korea.

With the advancement of endoscopic spine surgical instruments and surgical methods, most cervical spine surgeries can be performed with endoscopic decompression or endoscopic fusion, allowing patients to reduce the risk of incisional surgery and return to their daily activities as soon as possible after surgery.
Depending on the location of the lesion, transit anterior or posterior transit surgery is performed, and I want to explain the diagnostic method, the location of the surgery, the surgical method, and how to avoid the risks during the operation.
The next version of spinal endoscopic systems is electronic endoscopy, I would like to explain its advantages in spinal surgery.

Education and Professional Work

AIN Hospital, Incheon, Korea.
Neurosurgeon.
Director of KOMISS(Korea Minimally Invasive Spine Surgery)
Consultant physicians of Myelotec,USA
Consultant Physician of Maxmorespine, Germany.
Member of AO spine, NASS, CNS.
Review Board of AJP, Asian Journal of Pain.
International Board of our esteemed journal JOSS (Journal of Spinal Surgery), official journal of NSSA (Neuro Spinal Surgeons Association, India).
The 5th President of KOSESS.

Surgical procedure for perineural cyst

Nobuyuki Shimokawa

Department of Neurosurgery, Tsukazaki Hospital,Hyogo, Japan

The indications and treatment methods for perineural cysts are still diverse, and no consensus has yet been reached. Here, I introduce my surgical procedure I use to treat perineural cysts at our hospital. Perineural cysts in S1, S2, and S3 are thought to be most common, and the sacral arch is removed as a unit to expose the cyst and surrounding nerve roots. There are cases where adhesions are strong in this area, so careful dissection is required to prevent leakage of cerebrospinal fluid. The anatomical relationship between the cyst and the surrounding common dural tube, as well as the nerve root that is usually located on the ventral side and is under compression, is confirmed by direct visualization. The cyst is incised longitudinally and the cyst contents are suctioned, after which its relationship with the surrounding structures is confirmed. The cyst is formed in the gap between the perineurium and epineurium, so when the wall of the perineurium toward the medial cranial direction is checked, a slit-shaped area of cerebrospinal fluid leakage is usually identified there. This slit is closed with fat tissue and a collagen sheet, and it is confirmed under direct vision that the cerebrospinal fluid leakage has stopped. As much of the cyst wall as possible is excised and sutured. The suture is reinforced with Neoveil and fibrin glue to make it water-tight. The surrounding area is filled with fat tissue to eliminate dead space. The sacral arch is then returned to its original position, the wound is closed, and the surgery is completed. I will present a video of the actual surgery.

Education and Professional Work

Education
1991-1997Completed Residency at the Department of Neurosurgery, Osaka City University (Prof. Hakuba)
1985-1991MD.Collegeof Medicine, Osaka City University, Osaka, Japan
Professional Affiliations
2012-at present Head of Spine Center, TsukazakiHospital, Himeji, Hyogo , Japan
2005-at present Chairman of Department of Neurosurgery, TsukazakiHospital
2003-2005 Chief of Department of Neurosurgery, TsukazakiHospital
1997-2003 Staff of Department of Neurosurgery, TsukazakiHospital
Academic Interests
2024- at present Board of the Japan Society of Neurotraumatology
2016-2021 Member of WFNS Spine Committee
2016-at present Member of The Section on Disorders of the Spine and Peripheral Nerves(DSPN)
2016-at present Member of American Association of Neurological Surgeons(AANS)
2015-at present Member of Cervical Spine Research Society Asia Pacific Section(CSRS-AP) & CSRS-Japan
2015-at present Member of Board of the Neurospinal Society of Japan (NSJ)
2014 -at present Member of Congress of Neurosurgical Surgeons (CNS)
2013-2015 Inspector of Japanese Society of Spinal Surgery
2012-at present Review Board of Neurologiamedico-chirurgica(official journal of the Japan Neurosurgical Society)
2012 at present Editorial Board of the Japan Society of Neurotraumatology
2012-at present Editorial Board of the Japan Society of Neurosurgical Emergency
2012 –at present Editorial Board of the Japan Medical Society of Spinal Cord Lesion
2010-at present Member of Board of the Japan Society for the Study of Surgical Technique for Spine and Spinal Nerves
2010 Board-certified Instructor of Neurospinal Society of Japan
2008 Board-certified Technical Specialist by the Japanese Society of Neuroendoscopy
2006 Board-certified Surgeon of Neurospinal Society of Japan
2005 Board-certified Stroke Specialist certified by the Japan Stroke Society
1997 Japanese Board of Neurosurgery by Japan Neurosurgical Society

Photo

Revision Endoscopic spine surgery

Bhupesh Patel

Abstract Under Preparation

Education and Professional Work

Prone Full Endoscopic Lateral Lumbar Interbody Fusion: Principles and Practice

Yoshinori Kyoh

Director of Kyoh Orthopaedics & Neurosurgery Clinic

The author has given multiple presentations at this forum on Full Endoscopic Lateral Lumbar Interbody Fusion. This presentation covers the fundamental principles and procedure in accordance with the surgical flow. 1) The procedure uses a transpsoas approach and can be performed in the prone position. 2) The prone position allows simultaneous posterior procedures. 3) It positions the intestines and other structures further from the surgical site. 4) The endoscope sheaths for 12mm width cage minimizes damage to the psoas major muscle. 5) The cage use is a fully coated, implant that promotes good bone fusion. 6) The surgery is completed through a single 2 cm skin incision. However extending it to 3cm improves visibility. 7) The incision should be made slightly posterior to the vertebral body's posterior edge, allowing access to the retroperitoneal space and entry into the vertebral body's lateral aspect through the intermuscular plane anterior to the psoas major. 8) Attaching A PVC sheath prevents fogging, retracts fat, and facilitates endoscopic manipulation. 9) There are three entry routes into the retroperitoneal space. I) At L4/5 and L5/S1, the approach is made from the iliac crest. If the iliac crest obstructs access, it can be resected and used as a bone graft donor site. No large retractor is needed, unlike OLIF or XLIF, reducing disruption to the iliac crest. II) At L1/2, L2/3, and L3/4, access is through the intermuscular plane between the external and internal oblique muscles and the transversus abdominis. III) At TH12/L1 and L1/2, an intercostal approach may be possible. 10) L4/5, closest to the retroperitoneum, requires the most caution. 11) In underweight patients, the intestines may shift posteriorly, requiring extra caution. 12) The intervertebral disc bulges and is very slippery, requiring careful handling. However, this bulging can serve as a key landmark. 13) Fix the sheath with the Lock-arm, confirmed under fluoroscopy. (Navigation-assisted techniques are under development.) 14) The disc surface is perforated endoscopically. If osteophytes are present, they can be safely drilled within the sheath endoscopically. 15) Under endoscopic and fluoroscopic guidance, the disc space is curetted, freshened and reducted. 16) During trial and cage insertion, counterpressure is required to prevent the sheath from lifting. 17) Confirmation of cage placement and ensure that the retroperitoneum has not strayed into the intervertebral space. 18) For multi-level cases, up to four levels can be accessed through a single incision. Alternatively, two separate incisions may also be used.

Education and Professional Work

EDUCATION/POST GRADUATE TRAINING
University: 1988-1994 Mie University, Faculty of Medicine
Residency: 1995-1997 Department of Orthopaedic Surgery, Osaka Rosai Hospital
MEDICAL LICENSURE
Full Medical License (Japan) No.5810
BOARD CERTIFICATION
The Japanese Orthopaedic Association
The Japanese Society for Spine Surgery and Related Research
AWARD
Best Oral Presentation Award -3rd Place-
The 7th ACMISST & 18th KOMISS, 24-25 May, 2019, Seoul, Korea
INTERNATIONAL FACULTY & INVITED LECTURE
The 5th Asia Pacific Cervical Spine Society Meeting, Bari, Indonesia, 23–26 November, 2011
The 2016 Midyear Course of the Minimally Invasive Spine Surgery and Techniques (MISST), Goa, India, 17-19 June, 2016
The Leon Wiltse Spine Symposium, Suwon, Korea, 14 July, 2018
The 2nd ISESS & The 2nd ISMISS Asia-Japan & The 11th MISS Summit Forum, Aichi, Japan, 31 August & 1 September, 2018
The 12th MISS Summit Forum, Aichi, Japan, 23-24 August, 2019
The 3nd ISMISS Asia-Japan & The 13th MISS Summit Forum, Aichi, Japan, 26-27 March, 2021
The 4th ISMISS Asia-Japan & The 14th MISS Summit Forum, Aichi, Japan, 25 March – 24 April, 2022
The 5th ISMISS Asia-Japan & The 15th MISS Summit Forum, Aichi, Japan, 11-31 March, 2023
The 6th ISMISS combined with The 16th MISS Summit Forum, Aichi, Japan, 15-16 March, 2024

Dynamic Recognition of structure in Spinal Endoscopic Surgery Using Deep Learning

Yi Jiang

Beijing Haidian Hospital

Purpose. The purpose of this study was to develop a dynamic recognition algorithm model and software based on a deep learning network to automatically recognize important anatomical structures within spinal endoscopic surgery.
Methods. Three thousand images were collected during spinal endoscopic surgeries and were randomly divided into a training dataset (2400 images) and a test dataset (600 images). Semantic Segmentation and labeling of range of interest were processed by 4 different spine surgeons. The annotated categories include three types of structures: bone, ligament, and disc.We used generative adversarial network techniques to generate new foramen images directly from the segmentation tags. Our generation model is based on the self-developed Soft-AdaLIN algorithm, and the generation model training is based on the pytorch deep learning framework. The NVIDIA 4090 graphics card with 24G video memory is used to take 2400 sets of images and mask data of the training set as training data, and the loss functions are L1 loss, perception loss and GAN loss. The training batch size was 4, the learning rate was 2e-4, and a total of 400,000 steps were trained. The segmentation model is based on OCRNet structure, and the backbone network adopts HRNet. After training, the optimal model was selected according to 300 sets of validation set data, and the model effect was evaluated by 600 sets of test set data.After the semantic segmentation is completed, the model is established, and the visualization program is initially formed. The verification is divided into two steps to check the effectiveness of the model.
Firstly, the man-machine control verification of image segmentation recognition will be set up, and three groups will be set up: the first group is the senior doctors with extensive surgical experience, the second group is the junior doctors who have participated in the surgery, and the third group is the machine learning model. 100 images from the database were randomly selected and three groups were verified back-to-back, and the marked area of key structures was taken as the verification factor. Identify the effectiveness of senior physicians, junior physicians, and machine validation. Then, gold standard verification was carried out on gross specimens. A total of 2 specimens were used, and 20 sites and 5 subgroups could be compared for testing. Color-able markers were injected into the predicted sites, and gold standard certification was carried out on anatomical specimens to confirm the measured results of the model.
Results. The results showed good recognition performance, with a mean IoU of 0.673, a mean F1 score of 0.800, a mean precision of 80.59%, a mean recall of 79.45%, and a mean accuracy of 92.72%. In comparison with clinicians of different levels, the performance of our software was lower than that of chief physicians, but significantly higher than that of attending doctors. The AUC of all labeled structures (bone, 0.9625; ligament, 0.9515; disc 09779) implied that our algorithm model and software have excellent prediction performance.
Conclusions. Our algorithm model and software can automatically recognize important anatomical structures within spinal endoscopic surgery and can help attending physicians improve their ability to accurately identify tissues during spinal endoscopic surgery.

Keywords. Spinal Endoscopic Surgery, Artificial Intelligence, Deep Learning, Dynamic Recognition Model

Education and Professional Work

PROFESSIONAL EXPERIENCES
Chairman, Nov. 2017 – Department of Minimally Invasive Spine Surgery, Beijing Haidian Hospital
Associate Professor, December 2014 – Orthopedic Surgery Department, Beijing Haidian Hospital
ATTENDING DOCTOR Nov. 2009 – Nov. 2014 Orthopedic Surgery Department, Beijing Haidian Hospital
PROFESSIONAL MEMBERSHIPS
Professional Organizations
Faculty member-- ASEAN MISST committee member,2016-presant
Faculty member-- AO-endoscopic spine surgery Faculty,2019-presant
Faculty member-- SMISS AP faculty.2019-presant
Member – SICOT, 2015- present
First committee of Minimally invasive surgery society,2015-presant
Member - Chinese Orthopedic Association (COA), 2014 – present
Member – Chinese Medical Doctor Association 2009 - present
Member – Beijing Orthopedic Association (BOA), 2009 – present
Vice director of Minimally Invasive Surgery Group, 2014-Present
Journal Editorial Board Member
Chinese Journal of Spine and Spinal Cord
Chinese Journal of Clinicians
BMC Surgery
AWARDS AND HONORS
1.Hongkong Federal medical scholarship, Jilin universiry,2012
2.Honor of outstanding young physicians. Haidian hospital. 2009,2010
3.Advanced young expert of Haidian Distrcit. 2011
4.Star of the study in capital.2016

Title Under Review

Tunç Koç

Abstract Under Preparation

Education and Professional Work

The application of computed tomography perfusion and preoperative embolization for reducing intraoperative blood loss in the separation surgery of thoracolumbar metastases

Jian Zhou

Zhongshan Hospoital Fudan University

Objective. To investigate the accuracy of computed tomography perfusion for the evaluation of vascularity of thoracolumbar metastases, and to evaluate the effect of combination with the preoperative embolization for the reduction of intraoperative blood loss in the separation surgery.
Summary of Background Data. The operation for thoracolumbar metastases is complex and carry the risk of potential massive bleeding. The tumor vascularity should be assessed before surgery, and effort should be taken to reduce the intraoperative blood loss.
Methods. A total of 62 patients suffered from thoracolumbar metastases were prospectively enrolled. All these patients were treated with separation surgery through the posterior approach. Before surgery, the vascularity of metastases in all cases were evaluated by the CT perfusion. The patients were stratified into hypervascular and hypovascular group according to the results of CT perfusion. The preoperative angiography and embolization were performed in the hypervascular group. The clinical data such as the intraoperative blood loss, perioperative complications, VAS score and neurological status, the accuracy of vascularity evaluation by CT perfusion verified by the angiography were analyzed.
Results. The mean intraoperative blood loss was 485±167 ml and 455±127.6 ml in the two groups respectively. The accuracy of vascularity evaluation by CT perfusion was 100% verified by angiography. 80.6% of the hypervascular group and 81.5% of the hypovascular group got at least one level neurological status improved. None of the patients suffered from neurological deterioration. The VAS score showed significant reduction after operation in both groups.
Conclusion. The vascularity of thoracolumbar metastases could be evaluated accurately by the noninvasive CT perfusion. And combination with the preoperative embolization, the intraoperative blood loss in the separation surgery could be reduced effectively and safely.
Key words. Computed tomography perfusion; Preoperative embolization; Intraoperative blood loss; Separation surgery; Thoracolumbar metastases

Education and Professional Work

Education
Sep 2000 – Jul 2006 Bachelor of Clinical Medicine, China Medical University
Sep 2006 – Jul 2011 Ph.D. in Orthopedics, Zhongshan Hospital, Fudan University
Work Experience
Aug 2011 – Jul 2012 Resident Physician, Department of Surgery, Zhongshan Hospital, Fudan University
Aug 2012 – Oct 2013 Resident Physician, Department of Orthopedics, Zhongshan Hospital, Fudan University
Oct 2013 – Dec 2018 Attending Physician, Department of Orthopedics, Zhongshan Hospital, Fudan University
Dec 2018 – Present Associate Chief Physician, Department of Orthopedics, Zhongshan Hospital, Fudan University
Research Directions
Spinal Surgery, Minimally Invasive Spine Surgery, Basic and Clinical Research on Spinal Tumors, Bone Defect Repair.
Academic Appointments
1.Shanghai Rising-Star Scholar (Youth Science and Technology Talent Program)
2.AO Spine Young Faculty
3.Member, Spine Group, SICOT China Chapter
4.Youth Committee Member, Orthopaedic Branch, Shanghai Medical Association
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6.Committee Member, Orthopaedic Branch, Shanghai Association of Social Medical Institutions
7.Member, Minimally Invasive Group, Orthopaedic Branch, Shanghai Medical Doctor Association
8.Committee Member, Minimally Invasive Orthopedics Committee, Shanghai Association of Integrated Traditional and Western Medicine
9.Committee Member, Spinal Medicine Committee, Shanghai Association of Integrated Traditional and Western Medicine
10.Committee Member, Spine Surgery Committee, Chinese Research Hospital Association
11.Committee Member, Minimally Invasive Spine and Rehabilitation Group, Chinese Association of Rehabilitation Medicine
12.Standing Committee Member & Secretary, Orthopedics Committee, Shanghai Association of Integrated Traditional and Western Medicine
13.Member of Cervical Group, Minimally Invasive Group, and Tumor Group, Spinal Cord Committee, Shanghai Rehabilitation Medicine Association

Next generation techniques in endoscopic/percutaneous cervical (eACDF) and lumbar fusion (pTLIF) surgery

Christian Morgenstern

Morgenstern Institute of Spine

We present two novel techniques with a step-by-step surgical video for
- percutaneous/endoscopic transforaminal lumbar interbody fusion (pTLIF) with a large-footprint interbody cage
- endoscopic anterior cervical discectomy and fusion (eACDF) for treatment of cervical myelopathy

and we will also show some case examples for each technique to underline the versatility of indications of both techniques.

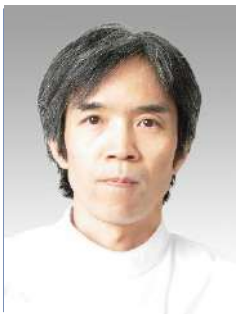
Education and Professional Work

Experience
- Faculty / teaching instructor at international courses for anterior and lateral approaches, and endoscopic spine surgery
- 2020 – 2024 Head of Spine surgery at Andorran public health service (SAAS), Andorra

Training
- Board certified Orthopedic Surgeon (German Board, Berlin)
- Residency at Charité Universitätsmedizin Berlin, Germany
- Fellowship trained MIS and endoscopic spine surgeon

Education
- Doctor medicinae (Dr. med.) - Universität Witten, Germany
- Medical school - University of Barcelona, Spain
- Ph.D. in Biomedical engineering - UPC-BarcelonaTECH, Spain
- Diplom-Ingenieur - Karlsruhe Institute of Technology, Germany
  - Thesis at the Massachusetts Institute of Technology (MIT), USA

Publications / Societies
- More than 100 published abstracts and papers in international peer-reviewed journals and international conferences (NASS, Eurospine, AO Spine GSC, ISASS, ISMISS, etc.)
- Reviewer for more than 12 international journals
- ISMISS national representative for Spain
- Member of NASS, Eurospine, AO Spine, ISASS, ISMISS, IEEE



Endoscopic cervical open-door laminoplasty - case report and literature review -

Shu Nakamura

Aichi Spine Hospital

Open-door laminoplasty has been applied for cervical spondylotic myelopathy, but it causes large concave scars and muscle atrophy. Minimally invasive endoscopic surgery is also performed, but mainly partial laminotomy is performed at a few intervertebrae. Regrettably, partial underpressurization is also observed in some cases. We report endoscopic cervical open-door laminoplasty (ECODL) for sufficient and even canal decompression across the affected area using an endoscope in a small space by only one surgeon. ECODL was able to minimize the skin incision and the muscle compression, and to maintain the opened vertebral arch and obtain bony fusion.

Education and Professional Work

Medical School:
Kyoto Prefectural University of Medicine (1988-1994)
Residency:
Kyoto Prefectural University of Medicine (1994-1995)
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Qualification (in part):
National Board of Medicine
Doctor of Philosophy (approved by Kyoto Prefectural University of Medicine)
Japanese Board of Orthopaedic Surgery
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Thoracic UBE

Man Kyu, Park

Hospital Director, Hu Hospital, Busan, South Korea

Unilateral biportal endoscopy (UBE) is a minimally invasive endoscopic spine surgery that is widely used for the treatment of degenerative spinal diseases involving the cervical, lumbar, and thoracic spine. In recent years, unilateral laminectomy for bilateral decompression (ULBD) using UBE has been explored as a viable technique for managing thoracic spinal stenosis and ossified ligamentum flavum (OLF). This technique allows for effective decompression while minimizing postoperative instability and back pain by preserving the contralateral facet joint, lamina, and musculoligamentous structures.
A key advantage of this approach is the ability to maintain a clear and magnified surgical view under continuous saline irrigation, which enhances surgical precision. Given the delicate nature of thoracic spine surgery, avoiding excessive spinal cord compression by surgical instruments is critical to preventing spinal cord injury. Securing adequate surgical space is therefore of utmost importance.
In this presentation, I will provide a comprehensive review of thoracic ULBD using UBE, including detailed surgical techniques and key anatomical landmarks essential for preventing complications. Additionally, we will present multiple surgical cases and intraoperative videos to offer an in-depth understanding of the procedure and its practical applications.

Education and Professional Work

Qualifications:
Graduated medical school at Kyungpook National University, Daegu, South Korea
Completed internship and residency at Kyungpook National University Hospital, Daegu, South Korea
Completed spine fellowship at Kyungpook National University Hospital, Daegu, South Korea
Working Experience:
(Present) Hospital Director, Hu Hospital, Busan, South Korea
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Director of research center, Parkweonwook Hospital, Busan, South Korea
UBE consultant spine surgeon, Parkweonwook hospital, Busan, South Korea
Clinical instruction, Kyungpook National University Hospital, Daegu, South Korea (2017-2018)
Awards:
Annual KOSESS conference Best paper award (2019)
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2019 KOMISS advanced spinal endoscopic course symposium Academic award (2019)

Title Under Review

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Abstract Under Preparation

Education and Professional Work

EDUCATION
2018-2019 Spine fellowship researcher(Minimally Invasive Endoscopic Spine Surgery),
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2018 Clinical fellowship, Minimally Invasive Endoscopic Spine Surgery, ParkWeonWook Spine Hospital, Busan, SOUTH KOREA
2009-2015 Research assistant, Orthopaedics and Traumatology Department, Ankara University Medicine Faculty, Ankara,TURKEY
2003-2009 Undergraduate education, Selcuk University Meram Medicine Faculty,Konya,TURKEY
WORK EXPERIENCE
2010-2015 Research assistant, Orthopaedics and Traumatology Department, Ankara University Medicine Faculty, Ankara,TURKEY
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2017-2021 Spine Surgeon, Spine Surgery Section, Orthopaedics and Traumatology Department, Ankara University Medicine Faculty, Ankara,TURKEY
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Bilateral contralateral laminoplasty using unilateral biportal endocopic spine surgery for upper lumbar levels

Takaki Yoshimizu

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Background:
Endoscopic lumbar laminoplasty is often performed unilateral laminotomy for bilateral decompression (ULBD). Although it has the advantage of preserving the spinous process, it is difficult to preserve the inferior articular process on the entry side in the upper lumbar levels, which has a sagittalized facet joint. At our hospital, we use bilateral contralateral laminoplasty using unilateral biportal endoscopy (BE-BCL) that can reliably preserve facet joints by entering from between the interlaminar and decompressing them on the contralateral side. We will report on the indication and the actual surgery.
Methods:
We investigated the facet joint preservation rate of ULBD using UBE to define the indication of BE-BCL. The subjects were facets (L1/2: 2 cases, L2/3: 7 cases, L3/4: 6 cases, 4/5: 6 cases). The volume of the laminar and inferior articular process divided into the ipsilateral side and the contralateral side of approach was measured from CT images, and the volume before and after surgery was compared to determine the preservation rate, and the relationship with the facet joint angle was examined.
Results:
The average preservation rate of ipsilateral side was 65% (37-83%) and the contralateral side was 88% (78-98). The correlation coefficient with the preservation rate was 0.67 at 22-54 degrees for the ipsilateral facet joint angle, and the contralateral facet joint angle was 17-56 degrees, and the correlation coefficient was 0.13 for the preservation rate. In one case, where the joint angle was 22 degrees and the preservation rate was 37%, a fracture of the inferior articular process on the postoperative approach side was observed.
In order to prevent inferior articular process fractures, BE-BCL was performed in patients with a facet joint angle of 20 degrees or less. The average preservation rate of BE-BCL was 81% (79-87%).
Conclusion:
In ULBD, the stronger the sagittalization of facet, the lower the facet joint preservation rate, and care must be taken when adapting to the upper lumbar spine. Since BE-BCL can prevent inferior articular process fractures on the approach side, it is considered to be a surgical method that can expand the indication of endoscopic lumbar decompression for the upper lumbar spine.

Education and Professional Work

Education
M.D. Gifu University, School of Medicine-Gifu, Japan 2012
Licenses
National Board of Medicine
Japanese Board of Orthopaedic Surgery
Board-certified Spine Surgeon (approved by the Board of the Japanese Society for Spine Surgery and Related Research)
MEMBERSHIPS
・Japanese Orthopaedic Association
・Japan Spine Research Society
・Japanese Society of Minimally Invasive Spine Surgery
・Asia Pacific Spine Society
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Skills
・Endoscopic spine surgery
・Hand microsurgery
Honors and Awards
Encouragement Award of Japanese Society of Minimally Invasive Spine Surgery,2022
Young Case Presentation Award of Society for Minimally Invasive Spinal Treatment,2023
Faculty of APSS 7th Annual Meeting 2024 – Hands-on Cadaveric Dissection & Instructional Course

Endoscopic techniques for multilevel spine Degeneration Do we need fusion ?

Aloysius Bambang Darwono

Head of Orthopaedic Section of Pluit Hospital , Jl. Raya Pluit Selatan , Jakarta Utara

Endoscopic spinal surgery began as percutaneous discectomy attempted by Hijikata et al. in 70s and Kambin in 80s. Schreiber, Suezawa and Leu were the first to have the idea to perform using endoscope (discoscopy). First generation of Spinal Endoscopic surgery was Transforaminal endoscopic lumbar discectomy introduced by Hal Mathews and Tony Yeung in the second half of 1990s, Schubert and Hoogland (2007). Since the introduction of endoscopic drills by Choi et al. (2008), the second generation was Interlaminar uniportal and biportal lumbar discectomy mainly in L5-S1 disc herniation. Evolution to third generation was Endoscopic decompression and Endoscopic foraminotomy due to rapid development in techniques and equipment to treat stenosis with/without instability. Decompression of central and lateral recess stenosis is now possible by interlaminar approach, and decompression of foraminal or extraforaminal stenosis through foraminotomy. The fourth generation due to recent developments in surgical equipment, supported endoscopic techniques, and now can be used for interbody fusion as a treatment for various lumbar spinal disorders. Newer innovation the endoscopic techniques and concept can be used for treatment the Cervical and Thoracic degeneration.
Where are we now, after endoscopic techniques show many advantages in preserving anatomic structures compare to open surgery in degenerative spine.
The nature of illness of Lumbar degeneration. The description of Lumbar degenerative cascade regarding anterior and middle column by theory of Kirkaldy Willis (1978) should be completed with Baastrup theory (1933) describing posterior column degeneration. Baastrup theory was supported by Bristol study (2010) and Auckland study (2012). Proposed New classification based on 3 columns theory of biomechanic construct degenerative changes (Darwono-Radchenko,2018), describe completely the pathologic changes/deformer of spine degeneration involving three columns and could be used to justified various evidenced based treatment. The nature of illness of degenerative spine deformity is combination of 2 factors:
-stabilizer: disc, facet joint, ligaments, muscles
-Pathologic changes/deformer: osteophyte, facet trophism, spinal canal stenosis, flavum infoldings and degeneration, enlargement of spinous process, Kissing spine and laminae (3 columns theory)
Gold standard is open decompression surgery, but this technique will sacrifice some of the stabilizer and need artificial stabilizer or fusion device to gain the stabilization again.
Reasonable concept of endoscopic techniques for degenerative spine diseases is decompression to remove the deformer only, while preserving the stabilizer through minimally invasive technique. This concept will support the nature of healing, reapplied the spine stabilizer again and the result is correction of the spine deformity without fusion.

Education and Professional Work

ACADEMIC/PROFESSIONAL QUALIFICATIONS :
・Medical Doctor (1975) Private University of UNISSULA Semarang
NB / CMS (1976) State University of Airlangga Surabaya
・General Surgeon (1986) State University of Diponegoro Semarang
・Orthopaedic Surgeon (1990) State University of Indonesia Jakarta
・Ph.D (2000) State University of Gajah Mada Yogyakarta

TEACHING ASSIGMENTS
1.Lektor Kepala Faculty of Medicine, The Veteran Pembangunan Nasional University 2000 - 2009
2.External Lecturer Faculty of Medicine, The Veteran Pembangunan Nasional University 1996 – 2000
3.External Lecturer Faculty of Medicine, The University of Hasanudin Makasar 2000 – 2006
4.Lektor Kepala Faculty of Medicine, The Tarumanagara University since 2009

SCHOLARLY and ACADEMIC AWARDS
1.The Best Paper of 4th Indonesian Orthopaedic Association National Congress, Jakarta, 1983. " Penanganan Patah Lengan Bawah Tertutup dengan Gips Teraan "
2.The Best Paper of 8th Indonesian Surgeon Association National Congress, Ujung Pandang, 1984. " Evaluasi Penanganan Patah Lengan Bawah Tertutup dengan Gips Teraan "
3.The Best Paper of 38th Anniversary The Army Central Hospital RSPAD Jakarta, 1988. " Penanganan Patah Tulang Terbuka dengan Eksternal Fiksasi Gips-Wire "
4.The Best Paper of 6th Indonesian Orthopaedic Association National Congress Bandung, 1990.
" Radiographic Anatomy of Adult Indonesian in Thoraco Lumbar Spine Anthropometry "

IS THERE A SOLUTION FOR POST-OPERATIVE INSUFFICIENCY in UBE? : YES

TARIK YAZAR

Department of Orthopaedics University of Ankara

In the literature
There is a 20% unsuccessful UBE rate .
The reason for 20% unhappiness is not UBE SURGERY.
It is insufficient preliminary examination!
ERROR-FREE EXAMINATION MUST BE CARRIED OUT DURING THE PREOPERATIVE PERIOD
•Fishbain et al (6) pointed out that it is difficult to distinguish neuropatic pain from soft tissue genereated pain.!!!!
•Study (7) Chan CW ,Peng P. Failed back surgery syndrome .PainMed.2011;12(4):-15 described variables contributing to the incidence of FBSS : (1) preoperative 2) perioperative and 3)postoperative
•Fishbain et al (6) .What is the evidence that neuropathic pain is present in chronic low back pain and soft tissue syndromes?An evidence based structured review.pain med.2014;15(1):4-15
•!Key points
•Muscle can be an independent source of pain in patients with degeneratif spinal disease.!!!
•Understanding the pathophysiological mechanisms of muscle pain will enhance the capacity of the surgeon to identify muscles as a pre-existing or complicating postsurgical source of pain.Physical therapy and healty exercise are key to treating muscle generated low back pain.
•even the least invasive MIS procedure may be compromised by MGP,especially if it was present before surgery.
•Education patients about MGP(muscle generated pain) can help in reassuring them concerning postoperative discomfort.
•An interdisciplinary approach ,consisting of pain management ,physiatry therapy, improves the ability to diagnose and treat MGP,ideally before considering surgery.
•Kraus-Weber,
•“Matthias postural competence “
•These tests determine the source of the patient's back pain problem.

Education and Professional Work

After completing my undergraduate education at Ankara University Faculty of Science in 1973. I completed my master's degree in electronics the same year. Later, I turned to medical education and graduated from Ege University Faculty of Medicine in 1980. I improved my language proficiency by taking English language courses during the summer term at Oxford University in the same year.
In 1985, I completed my specialist training at Ankara University Faculty of Medicine, Department of Orthopedics and Traumatology and became an associate professor in 1988 and a professor in 1995. I have been an expert in spine surgery for over 30 years. In addition, I had the opportunity to make presentations at national and international events. I developed myself in the fields of physics and medicine by participating in prestigious meetings in many countries such as Japan, South Korea, the Netherlands, Italy, Switzerland, France, and the USA. I conducted studies on spine surgery and electrostimulation. In addition to writing numerous academic publications and articles, I also served as a panelist and moderator in presentations in my field.

Biomechanical effect predictions after the diverse endoscopic decompression; the summarized results from the recent publications

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Background
While it is known that with open surgical decompression of the lumbar spine theoretically iatrogenic destabilization depending on the extent of resection of important passive stabilizers is possible, biomechanical effects of endoscopic approaches have not been studied up to now despite the facts that numerous clinical studies have repeatedly highlighted the benefits of endoscopic decompression. Transforaminal endoscopic decompression, which originated from the concept of indirect neural decompression by removal of the nucleus pulposus, has expanded its scope over time to include the epidural space, resulting in an increasing number of indications. Depending on the approach, the inside-out technique is distinguished from the intracanal technique. The intracanal technique is based on serial foraminoplasty, which is used to enter the spinal canal. The inside-out technique enters directly into the disk, inevitably resulting in damage to the annulus fibrosus.
Methods
Biomechanical testing of the specimen was performed on a biaxial (linear & torsion) static testing machine (referenced by Farshad M et al. Spine (Phila) 47; 2022). The specimen was tested load-controlled in the native state first and then after the transforaminal endoscopic approach, either by intracanal or inside-out technique. The segment was loaded native and after the endoscopic approach in flexion-extension (FE), lateral shear (LS), lateral bending (LB), and anteroposterior shear (AS), and in a vertical orientation for axial rotation (AR) order.
Results
In FE, anterior shear, and AR, the midline decompression significantly increased vertebral segment ROM compared with endoscopic approaches. The threshold of 50% transforaminal full endoscopic lateral recess decompression (TE-LRD) was the decompression surgical technique with the least effect on spinal instability (referenced by K Sairyo et al. NASS J 5; 2021). Resection of the inner, upper part of the pedicle significantly reduces the axial resistance force of the pedicle until a fracture occurs (referenced by Calek AK et al. The Spine J 23; 2023).
Conclusions
The transforaminal endoscopic intracanal technique preserves the native ROM of lumbar vertebral segments and shows a trend toward relative biomechanical superiority over the inside-out technique and open decompression procedures. However, foraminoplasty using large-channel endoscopy could increase the stress on the facet joint and disc of the surgical segment, which suggested unnecessary and excessive resection should be avoided during the endoscopic decompression to minimize biomechanical disruption. The extent of pedicle reduction itself plays only a limited role: once the cortical bone in the pedicle region is compromised, significant loss of resistance to loading must be anticipated.

Education and Professional Work

EDUCATION
March 1990 – February 1996: B.A. Seoul National University College of Medicine, Seoul, Korea
March 2000 – February 2002: Master course, Seoul National University, College of Medicine Graduate School, Seoul, Korea
March 2005 – February 2007: Doctorial course, Seoul National University, College of Medicine Graduate School, Seoul, Korea
POSTGRADUATE TRAINING
March 1997 – February 1998: Internship, Seoul National University Hospital, Seoul, Korea
March 1998 – February 2002: Resident, Neurosurgery, Seoul National University Hospital, Seoul, Korea
May 2005 – April 2006: Clinical and Research Fellowship, Neurosurgery, Seoul National University Hospital, Seoul, Korea
HOSPITAL APPOINTMENT
April 2002 – March 2003: Chief of Medical Affairs, Recruit Training Center, 55th Infantry Division, Yong In, Gyeong-Gi Do, Korea
April 2003 - April 2005: Director of Department of Neurosurgery, Armed Forces Seoul Hospital, Seoul, Korea
May 2006- February 2016: Chief Neurosurgeon, Wooridul Spine Hospital
March 2016 – August 2021: Associate Professor, Dept of Neurosurgery, Kyung Hee University Medical Centre
September 2021 – currently: Professor, Dept of Neurosurgery, Kyung Hee University Medical Centre
ACADEMIC INTERESTS
Minimally invasive spine surgery
Endoscopic cervical spine surgery
Image-guided spine surgery
MEMBERSHIP
International member, Tier I, Member's Feedback Committee, North American Spine Society
Candidate Member, Cervical Spine Research Society (CSRS) USA
Member & International Faculty, AOSpine Davos course, Asia-Pacific & North America
Member & Executer, Walter E Dandy Neurosurgical Society
Member, Korean Neurosurgical Society
Member, Korean Spine Neurosurgical Society

Age-Related Impact of Uniportal versus Biportal Surgery on Postoperative Multifidus Muscle Atrophy and Fat Infiltration

GuangHua Li

Aichi Spine Hospital

Background: Unilateral biportal endoscopic laminotomy (UBE) and percutaneous endoscopic laminotomy (PEL) are minimally invasive spinal surgery (MISS) techniques used for unilateral and dual-channel endoscopic laminectomy. However, limited research has been conducted on lumbosacral multifidus muscle injuries in elderly individuals undergoing MISS for lumbar spinal canal stenosis. The objective of this study was to investigate the impact of single-channel and double-channel MISS on the multifidus muscle in elderly patients.
Materials and methods: A total of 107 patients who underwent MISS were stratified into two cohorts: group A (<65 years) and group B (≥65 years). Preoperative imaging data, including magnetic resonance imaging, were gathered to classify the degree of stenosis based on the nerve root compression. The extent of multifidus muscle atrophy and fat infiltration was assessed by calculating the fat-free cross-sectional area (FCSA)/cross-sectional area (CSA) ratio before and after surgery through measurements of CSA and FCSA. Total cross-sectional area/FCSA were calculated using MRI cross-sectional T2WI.
Results: The degree of atrophy and fat infiltration did not change between procedures in group A (P>.05), but changed significantly in group B (P<.05).
Conclusion: Unilateral single-channel and double-channel surgery had no significant effect on the degree of multifidus muscle atrophy and fat infiltration in patients younger than 65 years. However, in patients 65 years and older, the degree of multifidus muscle atrophy and fat infiltration significantly increased with the increasing incidence of lateral recess stenosis, which was positively correlated with the duration of surgery.

Education and Professional Work

Current Employment：
Department of Orthopedic Surgery, Aichi Spine Hospital.
Educational Background：
Graduated from Nagoya University Clinical Medicine Science of department of medicine in 2017.
Academic Society Position：
The member of Japanese Society for Spine Surgery and Related Research Reserved.
The member of Japanese Orthopaedic Association.

Anterior transvertebral key-hole herniotomy: Advantage and Technical Tips

Motohide Shibayama

Aichi Spine Hospital

Anterior transvertebral herniotomy (ATH) is a technique for resecting cervical disc herniation through a key-hole in the vertebral body. Theoretically this technique is ideal because it preserves motion segment and uses no implant. We experienced over 30 cases. Most cases showed good clinical recovery and preserved motion of the involved disc. We introduce surgical indication, advantage and surgical tips of ATH in the poster.

1) All intracanal disc herniations are good indication especially for young generation. Up and down migrated herniation can be treated.
2) The position of the surgeon is important: The procedure is performed in a narrow hple under microscope. Drilling up or down, standing right or left must be considered deliberately.
3) Approach in ATH can be smaller than that of ACDF: Because drilling starts in the center of the vertebral body.
4) Orientation is very important. We fill contrast medium in the keyhole and confirmed under C-arm fluoroscopy.
5) Special tool: A shallow-angled muscle retractor, A micro bone curet t e and a one with off-set shape were developed.
6) Insufficient removal and remnant: Drilling tends to proceed medially and occasionally removal of the herniation mass is not enough. But a remained mass will be resolved in a short time. I will explain the reason.

Education and Professional Work

Current position
Vice director
Aichi Spine Hospital
Education
1989 Graduated from Nagoya City University, School of Medicine
Research experience
1994-1997 Dept. of Neurobiology and Anatomy Medical college of Pennsylvania (Drexel University), Philadelphia, USA
Occupation
1989 Orthopedic surgery. Nagoya City University
1991 Orthopedic surgery. Ogaki Municipal hospital
1994 Neurobiology and Anatomy
Medical College of Pennsylvania (Drexel University), Philadelphia, USA 1997 Orthopedic surgery.
Nagoya City University
1999 Orthopedic surgery. Toyokawa City Hospital
2009 Aichi Spine Institute
Interest
Minimally invasive spinal surgery, Spinal Infection

How should MEL, UBE, and FESS be used for cervical and lumbar spinal canal stenosis, foraminal stenosis, and herniated disc?

Zenya Ito

President of Aichi Spine Hospital

In recent years, UBE has been widely used both in Japan and overseas as a technique that can be used for any spinal disease. At the previous meeting, we reported on the difference in use for lumbar spinal canal stenosis, and concluded that MEL or PSLD may be more effective depending on the number of stenotic intervertebra and the height. This time, we will report on the difference in use for other spinal diseases of the cervical and lumbar spine.

[Lumbar foraminal stenosis]
FESS can be performed under local anesthesia in almost all cases. However, UBE is useful for cases with severe bone degeneration at L5/S. In addition, for cases accompanied by spinal canal stenosis, UBE can be used to decompress the stenosis and then decompress the intervertebral foramen on the contralateral side.

[Lumbar disc herniation]
FESS can be performed under local anesthesia in all cases.

[Cervical myelopathy]
UBE is considered to be useful. However, for cases with three or more level of stenosis, laminoplasty or MEL is performed, taking into consideration the effect of reflux pressure on the spinal cord.

[Cervical foraminal stenosis]
FESS can be performed in all cases.

[Cervical disc herniation]
For central herniation, oval type FESS can be performed from an anterior approach, and for lateral type, FESS can be performed from a posterior approach.

Education and Professional Work

HOSPITAL APPOINTMENTS:

1998/Apr-2003/Mar Nagoya 1st red cross Hospital
2003/Apr -2004/Sep National center for Geriatrics and Gerontology
2004/Sep -2005/Mar Atsumi Hospital
2005/Apr -2008/Mar Student in the Postgraduate Course of Nagoya University School of Medicine
2008/Apr -2009/Jul Medical staff in Nagoya University Hospital
2009/Aug-2010/Sep International clinical fellowship of Emory Spine Center
2010/Oct-2011/Mar Toyohashi municipal Hospital
2011/Apr-2016/Mar Assistant professor in Nagoya University Hospital
2016/Apr-2017/Mar Aichi Spine Institute vise president
2017/Apr -Present Aichi Spine Hospital Chair

HONORS & AWARDS:

・2006 Foundation of Orthopedic Department in Nagoya University
・2007 Grants-in-Aid from the Ministry of Education
・2008 Nagoya Spine Group Awards of publications
・2008 APOA spine travelling fellowship Awards
・2008 Instrumentation Conference Oral Presentation Awards
・2009 The Uehara Memorial Foundation Awards
・2009 Grants-in-Aid from the Orthopedics association Foundation Awards
・2009 Best Report Awards of Orthopedic department in Nagoya University
・2011 ISTA(International society for technology in Arthroplasty) best report award
・2011 Nagoya Spine Group Awards of publications
・2012 Grants-in-Aid from the Ministry of Education
・2012 JSSR spine travelling fellowship
・2015 Grants-in-Aid from the Ministry of Education
・2018 JSSR Best report award

Efficacy of Modified Full Endoscopic Spine Surgery (FESS) with Standard instruments

Jin Hwa Eum

Department of Neurosurgery Ain Al Khaleej Hospital ,Alain, Abu Dhabi ,UAE

Background: Modified full endoscopic spine surgery (FESS) is a safe and effective alternative to the existing uniportal endoscopic spine surgery for various cervical, thoracic and lumbar spinal decompression procedures. Full endoscopic spine surgery is a good minimally invasive method for diverse pathologic spine diseases. But we cannot use large or curved standard spine surgery instruments due to a limited working channel size. To solve this problem, we modified the working channel to allow for FESS with conventional instruments and angled nerve root retractors instead of long and not sturdy expensive tools. In this report, we describe the application of modified FESS for spine surgeries and discuss its advantages and pitfalls.
Methods: We used a modified full endoscopic spine surgery system with standard durable instruments. The following surgical procedures are conducted: lumbar unilateral laminotomy and bilateral decompression (n=2); lumbar foraminotomy (n=1); lumbar laminotomy and discectomy (n=3) transforaminal lumbar interbody fusion(n=1); and cervical laminotomy and discectomy (n=3).
Results: All surgical operations were successfully completed. None of the procedures had to be stopped due to technical issues. No surgical complications were noted that could be related with modified FESS. VAS scores were improved from 8.2 preoperatively to 2.6 at 3 months follow up visit. Additionally, no patient experienced neurologic deterioration after surgery. No patient required conversion to open procedure. None of these patients required postoperative early revision surgery.
Conclusion: There are several advantages with modified FESS such as the capability of using large or curved standard surgical instruments, freer instrument handling, a more acceptable learning curve, and a reasonable cost. Modified FESS seems to be an effective alternative compared to a conventional full endoscopic spine surgery. With further refinement of the system, the modified FESS might become the next generation of full endoscopic spine surgery.
Key words : Modified full endoscopic spine surgery, standard conventional instruments

Education and Professional Work

Professional Objective

To contribute my innovative spinal surgical approach in partnership with a doctor, medical team, or hospital in the world.

EDUCATION & CREDENTIALS

- Visiting professor , Sri Ramachandra University Hospital , Chennai , India March 2024
- Consultant, Neurosurgery, UAE
  2021-
- Exchange Visitor Doctor, Albert Einstein College of Medicine of Yeshiva University, New York 1994-1995
- Professional License, Korean National Board of Neurological Surgery 1991
- Internship and Residency, Maryknoll General Hospital, Busan, South Korea 1986-1991
- Medical Doctor, Kyeungbuk National Medical School, Daegu, South Korea 1982-1986

EXPERTISE

- Perform over 30-50 spinal surgery cases each month (2003-2021)
- Specialization in cases requiring Biportal Endoscopic Spine Surgery, in partnership with three fellow neurosurgeons
- Successfully performed over 5,000 cases between January 2003 and January 2022
- Concentration : HLD 55%, Lumbar Stenosis 30%, Lumbar Fusion (Endoscopic TLIF) 10%, Endoscopic cervical decompression 5%

LEADERSHIP

EExecutive

Director, KOMISS (Korea Minimal Invasive Spine Surgery) 2021

DDirector of

KOSESS (Korea Research Society of Endoscopic Spine Surgery) 2021
Chairman of KUBE (Korea Unilateral Biportal Endoscopy Society) 2020-2021
Course Speaker The 3rd Westlake Symposium on UBE 19-20 November 2022
Course director, “Unilateral Biportal Endoscopic Foraminotomy” May 30-31, 2015
Korea Minimally Invasive Spine Surgery Society Symposium and Cadaver Workshop
Course director, The 3rd Didactic Course of Endoscopic Spine Procedure Jan 15-17, 2015
Fresh Cadaver Workshop, Seoul, Korea

MEMBERSHIP

International Chapter, NASS (North American Spine Society) 2009 - present
KNS (Korean Neurosurgical Society) 1990 - present

Percutaneous Endoscopic Transforaminal Discectomy (PETD) via Parasternum Intercostal Approach for Cervicothoracic OPLL Resection

Smito Shimizu, Tomohito Mukaihata, Ruito Tsuchiya

Katori Omigawa Medical Center

This study presents a novel minimally invasive technique utilizing Percutaneous Endoscopic Transforaminal Discectomy (PETD) for the resection of ossification of the posterior longitudinal ligament (OPLL) in the cervicothoracic junction. By employing the parasternum intercostal approach, this method avoids conventional sternotomy, thereby reducing surgical trauma while enabling effective treatment of deep-seated lesions. PETD was successfully applied in two cases involving Th3/4 and Th2/3 OPLL, providing enhanced clarity and detail in local anatomical visualization, which facilitated precise pathological assessment. The operative times were 5 hours 50 minutes and 5 hours 4 minutes, respectively, underscoring the technique's safety and effectiveness. Key advantages include the use of slender instruments and forward-angled endoscopic optics, which deliver an unexpectedly broad field of view, thereby expanding the scope of minimally invasive surgical interventions. This innovative approach underscores the potential of percutaneous endoscopic techniques in addressing deep complex spinal conditions, offering a safe and efficient alternative to traditional methods while minimizing patient burden.

Education and Professional Work

CURRENT STATUS:
Chief, Spine and Spinal cord center Omigawa general hospital

EDUCATION:
1992 School of Medicine,Toyama University(graduated)
1992 Enterd School of Medicine Chiba University

Professional Trainng and Employment
1992 Passed the Examination of National Board
1992 Resident in Orthopaedic Surgery, School of Medicine Chiba University
1993 Doctor in Orthopaedic Surgery, Funabashi Municipal Hospital
1994 Doctor in Orthopaedic Surgery, National Chiba Hospital
1995 Doctor in Orthopaedic Surgery, Kashima Rousai Hospital
1996 Doctor in Orthopaedic Surgery, Funabashi Municipal Hospital
1997 Doctor in Orthopaedic Surgery, Narita Red Cross Hospital
1998 -2001 Doctor in Orthopaedic Surgery, School of Medicine Chiba University
2001-present Chief in Spine and Spinal cord center Omigawa general hospital

Dural Pain: A Forgotten Concept and a New Therapeutic Target with TF-FESS

Masaki Yoshimura

Institute Name

Dural pain is an ancient, forgotten cause of pain. Unlike radicular pain, dural pain occurs slightly caudal to the compression lesion and resembles myofascial pain during exercise. It is caused by compression lesion from the ventral side such as disc hernia or spondylosis. The dense distribution of nerves in the ventral dura seems to be the cause. We believe that TF-FESS, which can directly approach the ventral side of the dura mater, will bring the gospel to this pathology. We present a case of L4/5 paramedian disc hernia in which pain from the buttocks to the thighs appears while sitting upright, but without L4 or L5 root symptoms.

Education and Professional Work

Please keep your CV within 400words.
If it exceeds,we may adjust it.

Optimal Perfusion Pressure in UBE/BESS

Kanji Sasaki

Seirei Hamamatsu general Hospital

Background
In UBE(Unilateral Biportal Endscopy), surgery is performed using two portals. Water is irrigated by flowing through the camera portal and draining through the working portal. The perfusion obtained washes away bleeding and provides a clear field of view. However, there is a risk of central nervous system damage if strong pressure is applied to the epidural space. In spinal endoscopic surgery with perfusion, the perfusion pressure that allows safe surgery is considered to be less than 30-50 mmHg, but the problem is that the pressure in the operative field cannot be visualized when surgery is performed with spontaneous drop pressure. In this study, perfusion pressure in the surgical field was measured to clarify the height of the perfusion bag at which safe surgery can be performed.
Methods.
Eight patients who underwent herniectomy by intervertebral approach with UBE in our hospital were included. The endoscope was a Smith & Nephew scope (cannula 3.8 mm, scope 2.7 mm), a 2000 ml saline bag was used, and perfusion was by natural fall. A 16G Surflow catheter connected to a pressure transducer was inserted into the operative field, and the pressure was displayed on a biometric monitor. The height of the perfusion bag was set every 10 cm from a height of 20 cm to 80 cm from the operative field. Water pressure was measured under conditions of adequate perfusion and under conditions of portal occlusion and no perfusion, respectively. When the water pressure exceeded 50 mmHg, it was judged to have reached the danger zone, and the measurement was terminated.
Results.
The mean water pressures measured at 20, 30, 40, 50, 60, 70, and 80 cm above the surgical field of the perfusion bag were 18, 20, 23, 25, 27, 29, and 35 mmHg with perfusion and 24, 30, 35, 38, 44, 47, and 50 mmHg without perfusion. With perfusion, water pressure did not exceed 50 mmHg in any case, but without perfusion, it exceeded 50 mmHg in one case at 60 cm, three cases at 70 cm, and two cases at 80 cm.
Discussion.
With perfusion, there were no cases of water pressure exceeding 50 mmHg. Therefore, adequate drainage from the working portal is necessary to avoid excessive water pressure in the operative field. When perfusion is lost, the height of the perfusion back is considered to be safe up to 50 cm from the operative field, since there have been cases in which the height of the back exceeds the safe range by more than 60 cm.

Education and Professional Work

Education:
Literature Kyoto Univ. dept. of literature Apr. 1993- Mar 1996
Medical School Kagawa Medical University School of Medicine Apr. 1996 - Mar. 2002. M.D. qualified on March, 2002.

Residency:
Dept. of Orthopedic Surgery, Kagawa Univ. School of Med. and Affiliated Hospitals May. 2002 ~ Mar. 2004
Kobe Rosai Hosp. Sep 2005- Mar 2007
Niigata Spine Surgery center Sep 2009- Aug. 2012

Postgraduate:
Graduate School, Kagawa Univ. Apr. 2007 ~ Mar. 2011
Ph.D. (No.525), qualified on Mar.24, 2011
Research fellow
Washington Univ. of St. Louis Fellow Sep. 2013- Nov.2013

Special subjects:
1) Clinical: All spine diseases covering spinal neural elements and bone and joints, from pediatric through adult, from cervical though sacrum, including spinal cord tumors (extra- or intra-medullary tumors), spine tumor (primary or metastatic), all degenerative diseases, osteoporotic spine, idiopathic, congenital or paralytic scoliosis, etc.
2) Basic: Cell and molecular biomechanics and cell signaling of cancer and tumors especially with biomarkers of cancer and tumors on orthopedic pathology

Academic activities:
① Japanese Orthopaedic Association, member
② Japanese Spine Research Society, member
③ Japanese Association of Spine Instrumentation, member
④ Japanese Society for UBE and BESS, representative director

Short-term results of UBEL (Unilateral Biportal Endoscopic Laminectomy) for lumbar spinal canal stenosis

Kazuhiko Fujita

Aichi Spine Institute

UBE/BESS is a minimally invasive spine surgery that has been rapidly spreading worldwide in recent years. This report presents the postoperative outcomes of UBEL (Unilateral Biportal Endoscopic Laminectomy) performed by a single surgeon, who switched the procedure from MEL (Microendoscopic laminectomy), for lumbar spinal canal stenosis.
The subjects included 83 cases and 115 intervertebral spaces from January to December 2024. The study examined operative time, pre- and postoperative VAS and JOA scores, and perioperative complications.
The patient demographics included 30 females and 50 males with an average age of 71 years. The average operative time per intervertebral space was 73.5 minutes. There was a significant decrease in VAS scores and a significant improvement in JOA scores postoperatively.
Complications included one case of postoperative infection and two cases of temporary lower limb muscle weakness. There were no cases of dural tear or postoperative epidural hematoma.
UBE is a minimally invasive procedure with good operability and high versatility for various pathologies. However, since it is endoscopic surgery performed under irrigation, there is a risk of dural injury. Furthermore, the possibility of postoperative epidural hematoma is also higher due to the suppression of intraoperative bleeding by water pressure.
In this report, we also describe the modifications made to the procedure to avoid dural injury and postoperative epidural hematoma.

Education and Professional Work

Education
- Nagoya City University Graduate School of Medical Sciences: Nagoya, Japan (2015 - 2018)
  Ph.D. Degree: Doctor of Philosophy (2018)
- Nagoya City University School of Medicine: Nagoya, Japan (2000 - 2006)
  M.D. Degree: Medical Doctor (2006)

Professional Training And Employment

Residency: Kasugai City Hospital: Aichi, Japan (2006 -2008)

Hospital Activities:
- Kasugai City Hospital: Aichi, Japan
  Medical Staff of Orthopaedic Surgery (2008 - 2010)
- NTT West Japan Tokai Hospital: Nagoya, Japan
  Medical Staff of Orthopaedic Surgery (2010 - 2012)
- Toyohashi Medical Center: Aichi, Japan
  Medical Staff of Orthopaedic Surgery (2012 - 2015)
- Nagoya City University Hospital: Nagoya, Japan
  Medical Staff of Orthopaedic Surgery (2015 - 2018)
- Toyohashi Medical Center: Aichi, Japan
  Chief of Spine Surgery (2018 - 2023)
- Aichi Spine Hospital
  Medical Staff of Spine Surgery (2023 – present)

Social Activities

The Japanese Orthopaedic Association – Member, Specialist
The Japanese Society For Spine Surgery And Related Reserch – Member, Instructing Doctor

Seeing perspective on the future of Endoscopic Spine Surgery

Han Ga Wi Nam

Department of Neurosurgery, Teun Teun Hospital, Hwaseong-si, Korea

Endoscopic spine surgery (ESS) is one of the recently developed MISS techniques. ESS started as a branch of minimally invasive spine surgery, but through the efforts of many, it currently occupies a major large fraction of the minimally invasive spine surgery arena and is emerging as “the next new thing” in the field of spinal surgery. During the last decade, it has proven its efficacy and safety in treating various spinal pathologies, such as disc herniation, spinal degeneration, and spinal canal stenosis.

Initially designed for the removal of soft lumbar disc herniations, advancements in endoscopic instrumentation, along with the technical evolution of surgeons, have allowed the expansion of endoscopic surgery indications to include a wide range of stable degenerative pathologies of the lumbar, thoracic and cervical spine. Currently, the area of ESS is expanding to include spinal fusion and spinal deformity surgery. This same progression has led to the application of the technique in oncological pathology, primarily for separation surgeries and biopsies of extradural lesions. But above all, we must not forget the original purpose of ESS.

ESS has an ultra-small incision, reduces blood loss as well as trauma to the soft tissue, muscle, and bone injuries, and requires only a one-night hospital stay while offering effective and visible results in treating chronic back pain significantly. We would like to find a way forward by combining the original purpose of ESS with the existing techniques of conventional surgery. Through this announcement, we would like to find out what the next step is for ESS to take in the future.

Education and Professional Work

Feb. 2008	M.D. College of Medicine, Kangwon National University, Korea
Mar. 2009 - Feb. 2010	Internship, Hangang Sacred Heart Hospital, Seoul, Korea
Mar. 2010 - Dec. 2012	Residency in Department of Neurosurgery, Hangang Sacred Heart Hospital, Seoul, Korea
Jan. 2013 - Feb. 2014	Residency in Department of Neurosurgery, Dongtan Sacred Heart Hospital, Hwaseong, Gyeonggi,, Korea
Apr. 2014 - Mar. 2015	Army Surgeon, 1st Armored Brigade
Apr. 2015 - Apr. 2017	Army Surgeon , Korea Military Academy Hopsital
May. 2017 - Feb. 2018	Fellow in Department of Neurological Surgery, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea
Mar. 2018 - Mar. 2020	Section Chief, Department of Neurosurgery, Good Doctor Teunteun Hospital, Anyang, Korea
Mar. 2020 - Jan. 2021	Section Chief, Department of Neurosurgery, The Leon Wiltse Memorial Hospital, Anyang, Korea
Jan. 2021 - Sep. 2023	Section Chief, Department of Neurosurgery, Sooncheon Chuck Hospital, Sooncheon, Korea
Oct. 2023 – present	Section Chief, Department of Neurosurgery, Teun Teun Hospital, Hwaseong-si, Korea

Decompression of Foraminal stenosis using UBE/BESS

Hidetomi Terai

professor, Dept. of Orthopaedic Surgery, Osaka Metropolitan University Graduate School of Medicine

We have been actively introducing BESS/UBE in recent years after its first introduction in 2015 in Osaka Metropolitan University. The features of this procedure are its minimal invasiveness, clear visibility, and easy handling by bi-portal nature, making it possible to perform surgeries that were used to be difficult with previous procedures. One of its good applications is decompression of foraminal stenosis.
Our history of performing foraminotomy started using a microscope and then converted to MEL and then FESS. Each procedure has its own characteristics. Microscope requires significant invasion to expose and ensure the surgical field. Direction of the visuality and handling of instruments are highly limited. Using microendoscope is easier to reach the surgical field than microscope, however, to keep it clearly is difficult because dilator is not fit and interferes with bony structures. FESS has many advantages for foraminal stenosis, such as being performed with local anesthesia but it is difficult to grasp the whole picture due to the narrow visual field, and because of its uni-portal nature, it is difficult to ensure the visual field and perform decompression at the same time, which may sometimes cause compression of the exiting nerve by the sheath. On the other hand, with UBE/BESS, it is possible to reach the surgical field easily, also it is easy to visually grasp the anatomical position, and decompression can be confirmed with certainty.
I will be showing a video on foraminal decompression using UBE/BESS and show some technical tips for foraminal decompression in today's lecture.

Education and Professional Work

EDUCATION/ POST GRADUATE TRAINING
College/ University:
1989-1995 MD, Tohoku University School of medicine
1998-2002 PhD in Orthopedic Surgery, Osaka City University Graduate School of medicine
Residency:
1995-1997 Resident of Anesthesiology in Kinki University Medical School
Fellowship:
1997-1999 Fellow in Orthopedic Surgery, Osaka City University Graduate School of medicine, Japan
PRESENT POSITION OR ACADEMIC RANK
2024- Present Professor and Chairman of Orthopaedic Surgery,
Osaka Metropolitan University Graduate School of medicine
PREVIOUS PROFESSIONAL POSITIONS AND APPOINTMENTS
Clinical:
2002-2005 Instructor of Orthopaedic Surgery, Osaka City University Graduate School of medicine
2005- 2015 Lecturer of Orthopaedic Surgery, Osaka City University Graduate School of medicine
2015- 2024 Associate Professor of Orthopaedic Surgery, Osaka Metropolitan University Graduate School of medicine (The name of university has changed recently.)
Academic Research:
1999-2001 Research fellow in Surgery (Tissue engineering Lab.),
Massachusetts General Hospital, Harvard medical School, USA
2012 (Jan-Mar) Teaching and clinical staff in Wazir Akbar Khan Hospital, Kabul Medical University (International Medical Corps)
HONORS AND AWARDS
1999 Research award from Nakatomi Health and Wellness Organization
2007 Research award from Chiyoda Health and Wellness Organization
2009 Research award from Japan Foundation for aging and health
2019 Best presentation award in 26th meeting of JPSTSS (Japan Society for the Surgical Technique for Spine and Spinal Nerves)
MEMBERSHIP IN PROFESSIONAL SOCIETIES
JOA, JSSR, JSIS, PASMISS, AO Spine, ISSLS, NASS, Japanese Mucopolysaccaraidosis research, MISS Summit Forum

Biportal paraspinal approaches to the lumbar intervertebral foramen; from basic to advanced

Dookyong Son

Believe Sewoong Hospital, Busan, S. Korea

Introduction
The remarkable development of endoscopic spine surgery in recent years has enabled a variety of new attempts to overcome the limitations of conventional spine surgery that had been performed so far, and has made it possible to attempt minimally invasive non-fusion surgery for the lumbar intervertebral foraminal lesions that were mainly treated with fusion surgery.
Aims
As minimally invasive surgery technique developed, we can expect to reduce recovery time and hospitalization period, and less complication rates than fusion surgery. However, biportal endoscopic spine surgery is not widely accessible than conventional surgery, so the academic basis and clinical experience of biportal endoscopic spine surgery is necessary. Especially, the paraspinal approach to the foraminal lesion is less implemented compared to the interlaminar approach.
Methods
We performed the biportal paraspinal surgery more than 100 case of patients since 2020. After routine preparation, upper and lower portal were positioned about 1~2 centimeter lateral from lateral pedicle line except transforaminal approach to the ventral area of spinal canal. The paraspinal muscles were gently split, and semicircular working sleeves were always used to maintain in- and out-flow of water dynamics. To keep the solidity of facet joint, facetectomy or foraminoplasty was implemented as small as possible.
Results
In this presentation, we will check the anatomical characteristics in case of surgical consideration of the lumbar intervertebral foramen. And we also introduce the basics and advanced application of the biportal paraspinal approach to the lumbar intervertebral foramen with the case reports. Fortunately, most of patients showed favorable results after surgery.
Conclusion
We share the tips and tracks of biportal paraspinal approaches to the lumbar intervertebral foramen. This surgery may overcome the pitfalls of both conventional paraspinal surgery and interbody fusion surgery.

Education and Professional Work

* Education & Neurosurgical training
Bachelor's degree, School of Medicine, Pusan National University
Master's degree, School of Medicine, Pusan National University

Residency, Pusan National University Yangsan Hospital
Clinical Fellow, Pusan National University Yangsan Hospital
Assistant professor, Pusan National University Yangsan Hospital

* Awards
Nanoori Academic award, 33th ASIA spine (2019)
Best paper award, Busan Brain and Spine Society (2019)
English presentation silver prize, 53th JSSR (2024)

* Fields of Interest
Unilateral Biportal Endoscopy
MIS surgery; Oblique Lumbar Interbody Fusion

Supporting Company

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星光ビル管理　株式会社
TUNZ Pharma 株式会社(日本臓器)
株式会社　トーカイ　病院関連事業本部　中部ネクサージ課
一般社団法人　日本カレラクラブ
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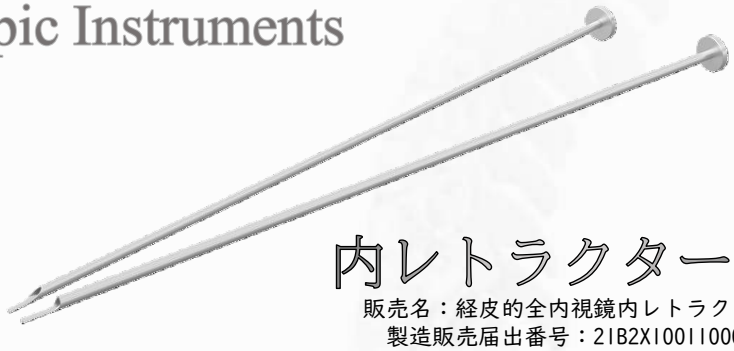

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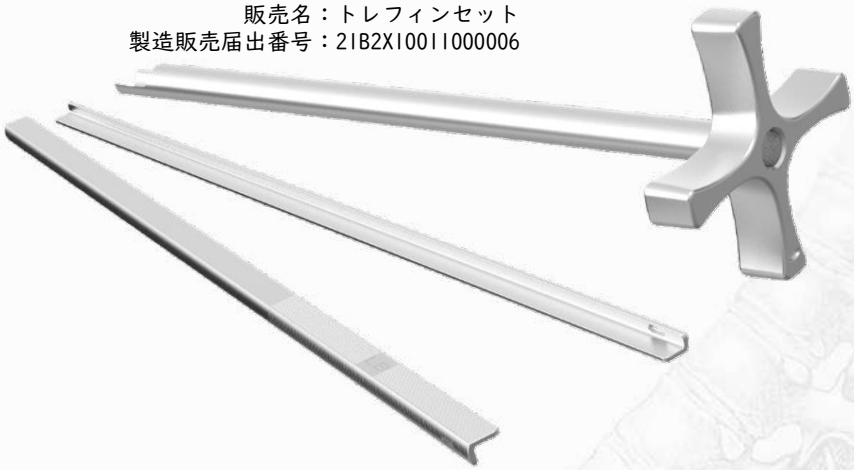

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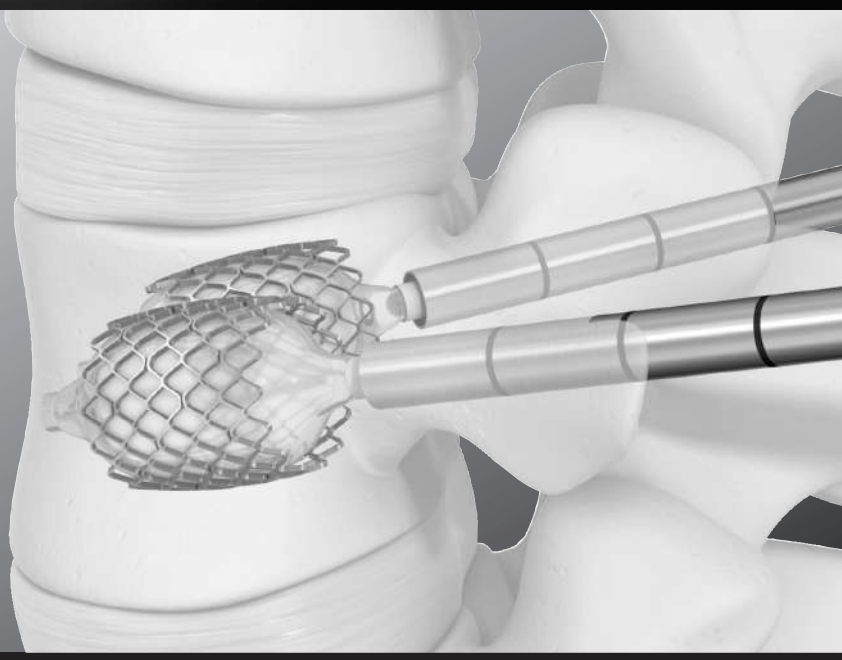

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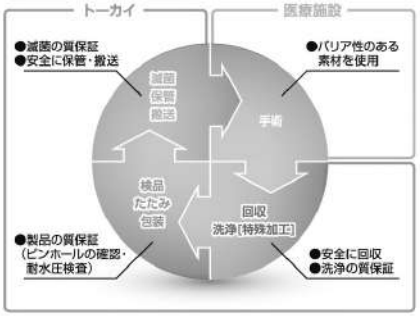

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日本国内で（北海道・愛知・京都）で一棟貸しの宿泊施設『宿場おきばる』を提供します。とくに北海道の『十勝おきばる』は、各部屋から太平洋が一望でき、北海道スペースポートからのロケット打ち上げの瞬間に立ち会うことができる唯一無二の宿泊施設です。その他、ハンディング体験や缶詰製造体験といった各種アクティビティに加え、客員シェフらによるジビエ料理を堪能していただけます。

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We offer "*Residence Okyval*" a private rental accommodation available in Hokkaido, Aichi, and Kyoto, Japan.
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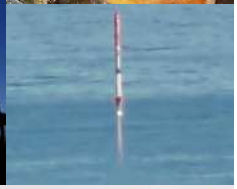
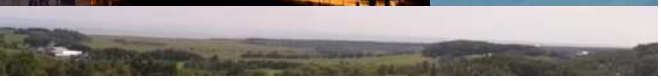


航空サービス

北海道スペースポート内で飛行クラブを運営しており、遊覧飛行を楽しんでいただく他、USAでパイロットライセンスの取得及び免許取得後の国内ライセンスへの切替えも支援しています。

Aviation Services

We operate a flying club within the Hokkaido Spaceport, offering scenic flights. We also provide support for obtaining a pilot license in the USA, as well as assistance with converting it to a domestic license after the license is obtained.

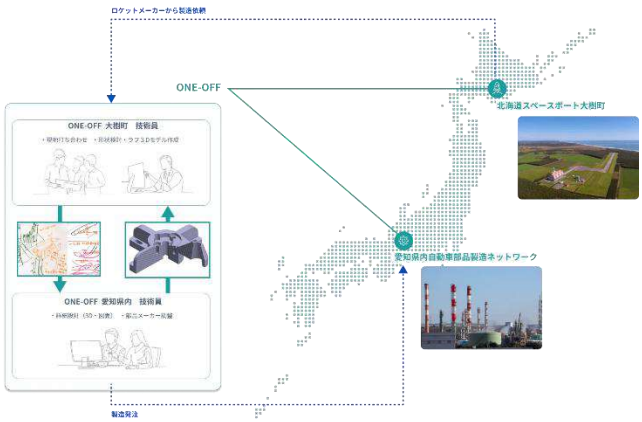


ものづくり支援サービス

北海道スペースポートを利用する海外企業向けにロケット打ち上げに必要な部品を国内自動車部品製造ネットワークで製造し、素早く現地調達するプラットフォームサービスです。

Manufacturing support service

We offer a manufacturing support service for overseas companies using Hokkaido Spaceport. This platform service manufactures the components needed for rocket launches through the domestic automotive parts manufacturing network and quickly supplies them to the local site.



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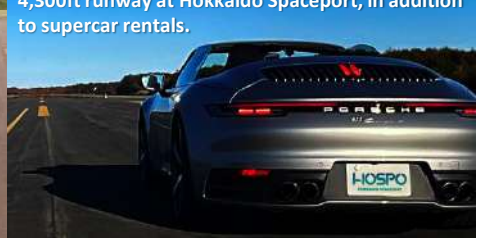

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