

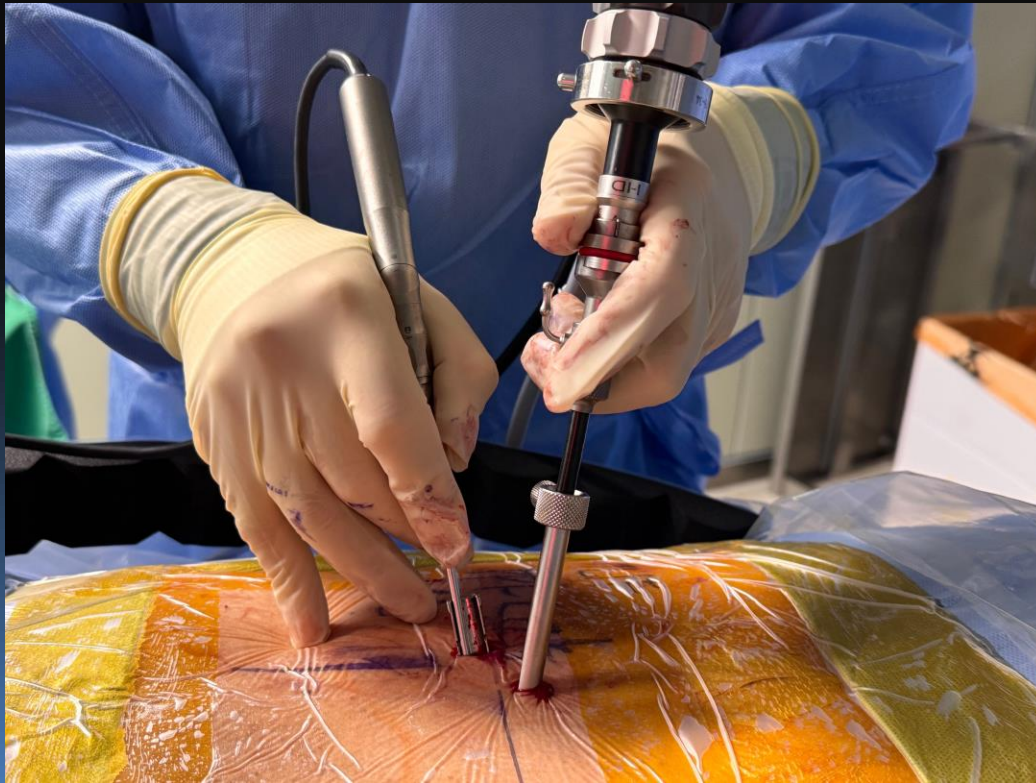
# **Biportal Endoscopic Transforaminal Lumbar Interbody Fusion**

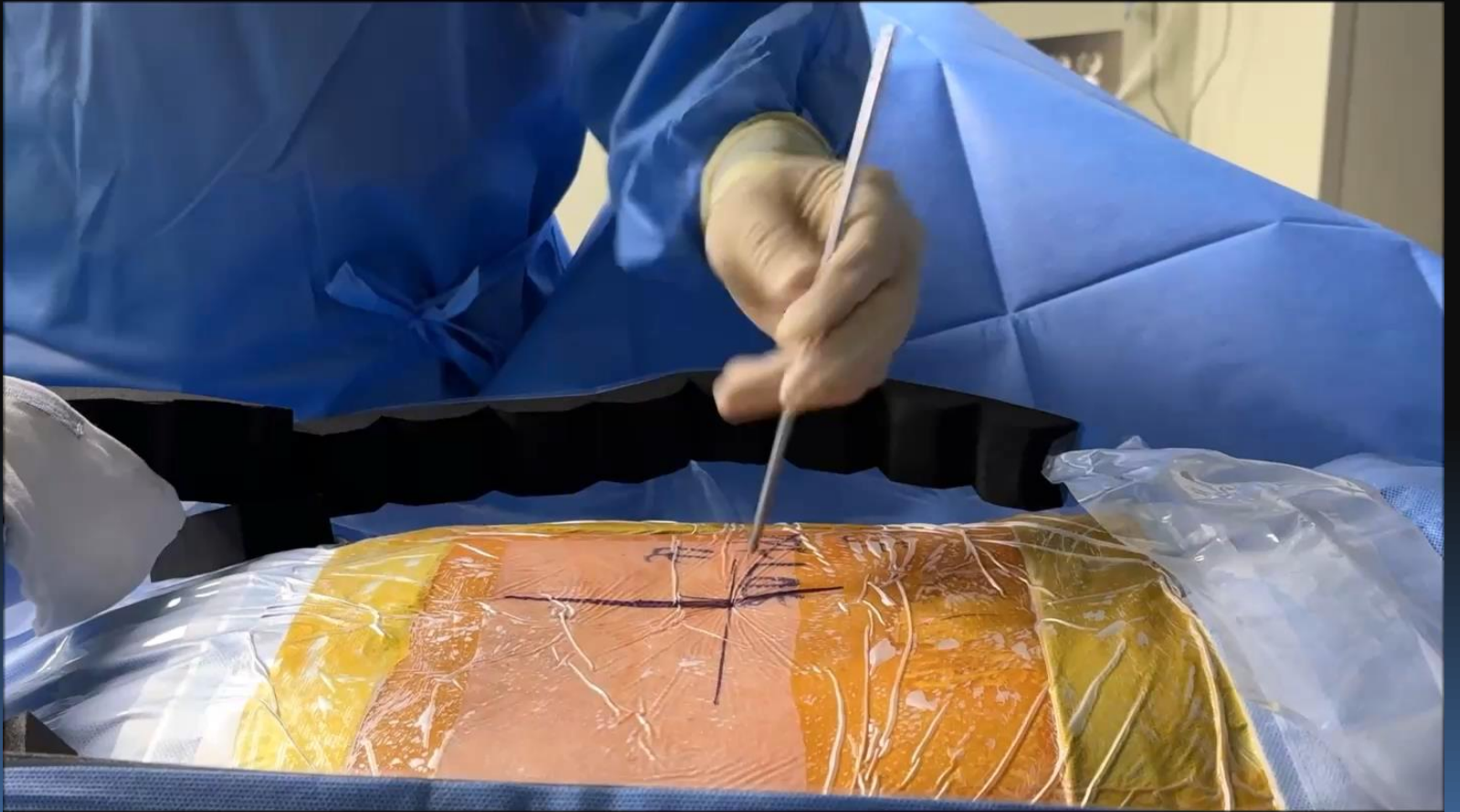
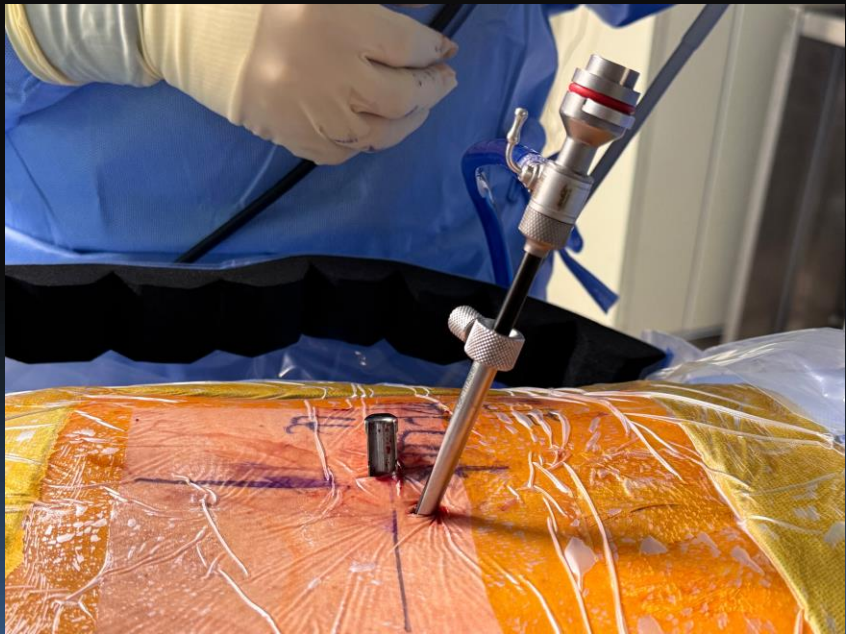
**Dong Hwa Heo, MD. PhD.**

**Endoscopic Spine Surgery Center, Neurosurgery**  
Chungdam Harrison Spinartus Hospital, Seoul, South Korea

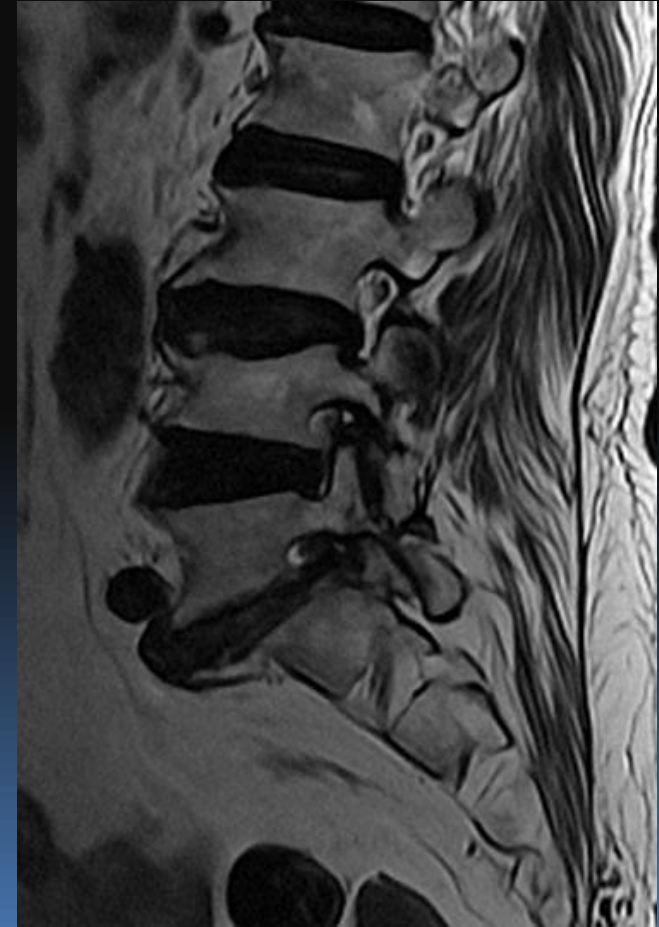
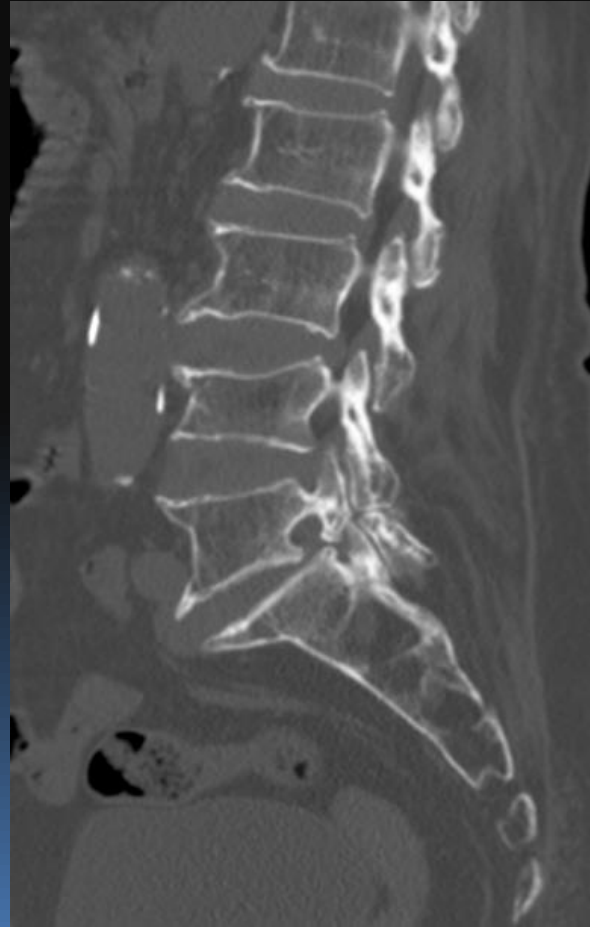
# **Biportal endoscopic lumbar interbody fusion**

## **Dual portal endoscopic TLIF**





**78/F. Back pain, bilateral legs pain, Claudication.**

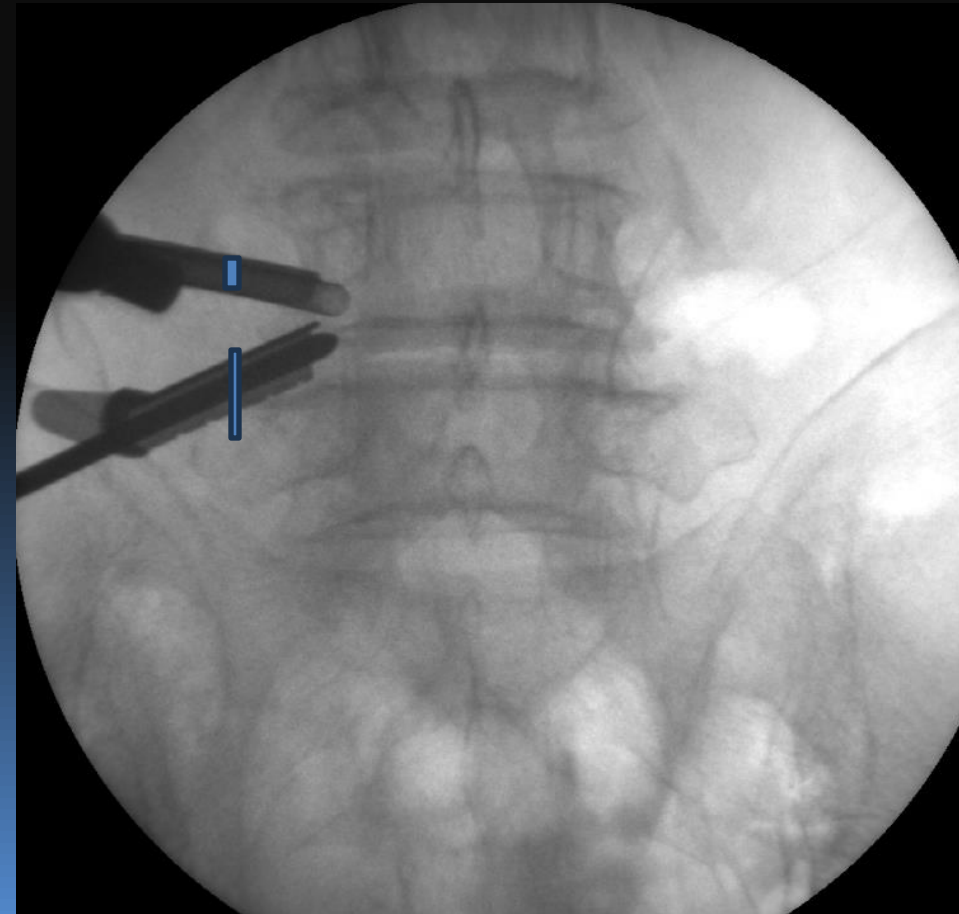
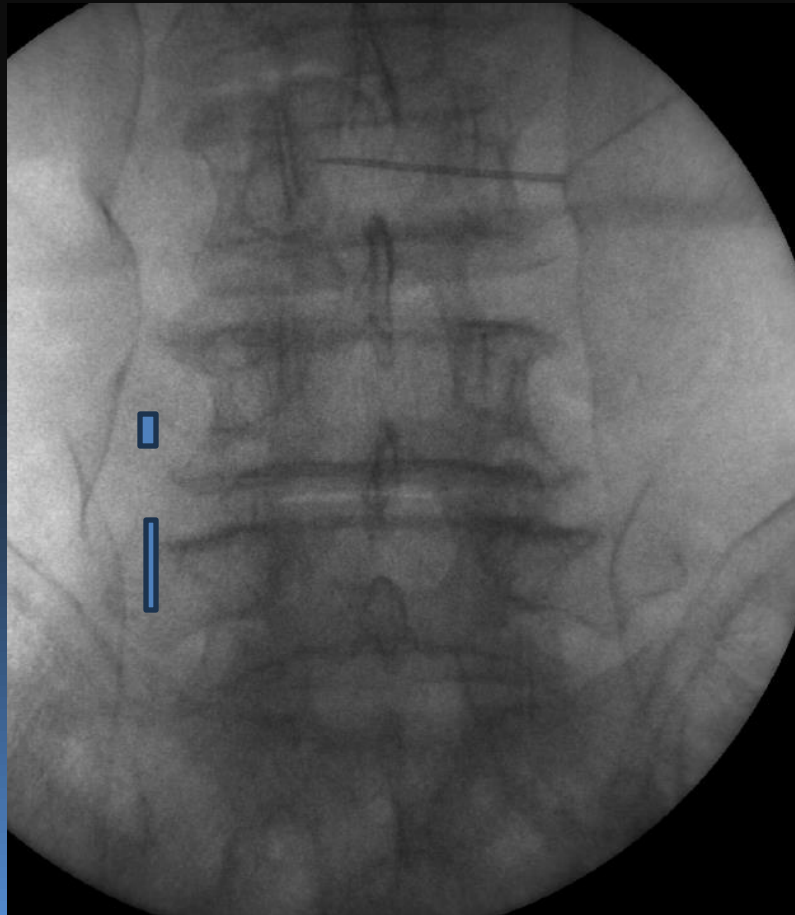




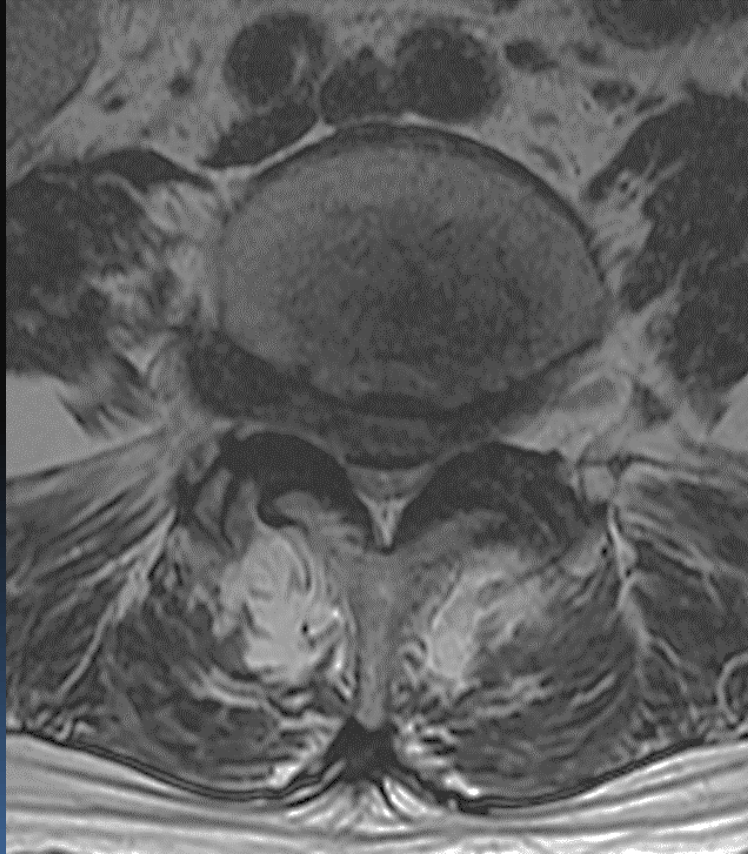


# Modified technique of UBE-TLIF

Trans-Kambin approach with SAP resection



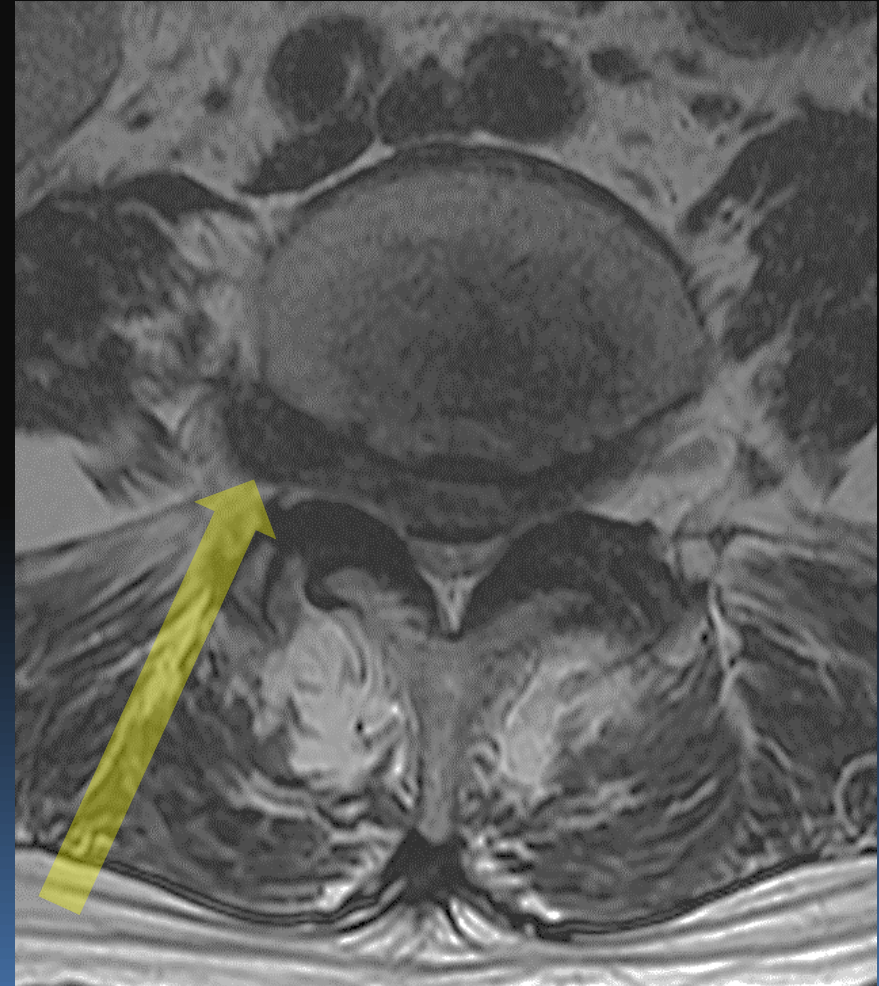
66/F. Right leg pain, **Kidney transplantation**



Right side approach, UBE fusion via Extraforaminal approach  
@ Epidural anesthesia



66/F. Right leg pain, **Kidney transplantation**

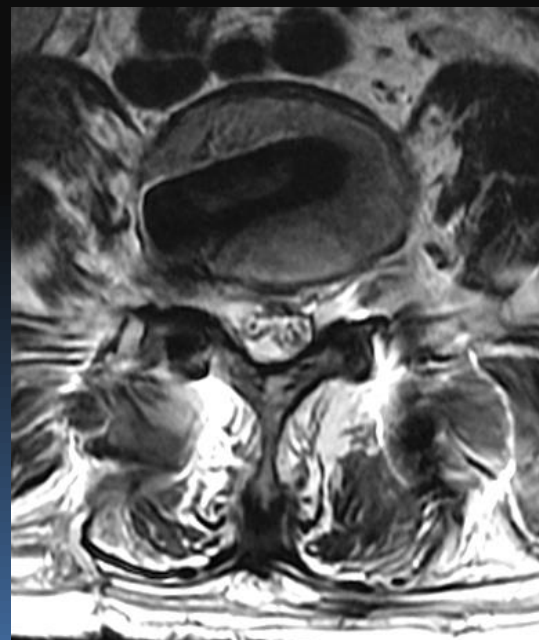


Right side approach, UBE fusion via Extraforaminal approach, Epidural anesthesia

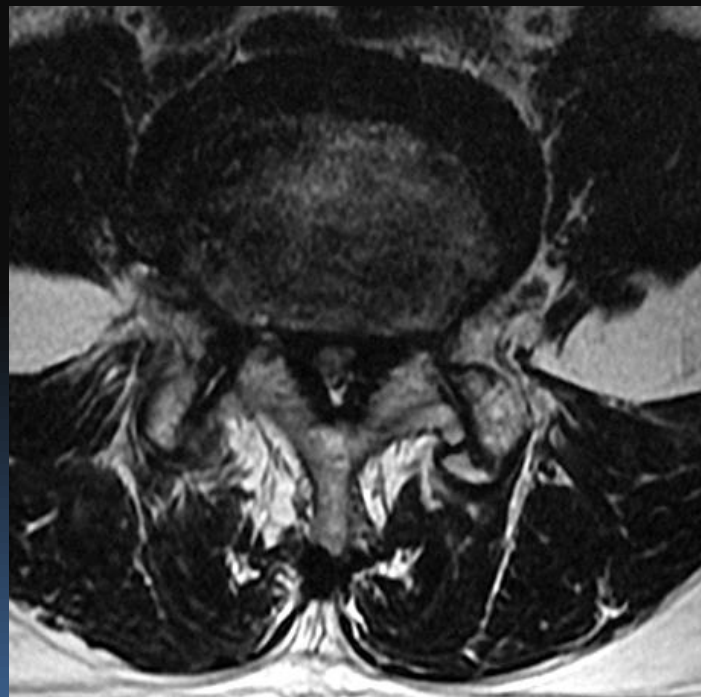
**66/F. UBE-TLIF, Trans-Kambin with SAP resection. Kidney transplantation**



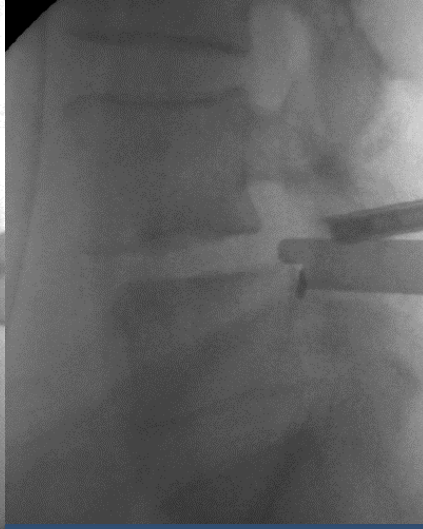
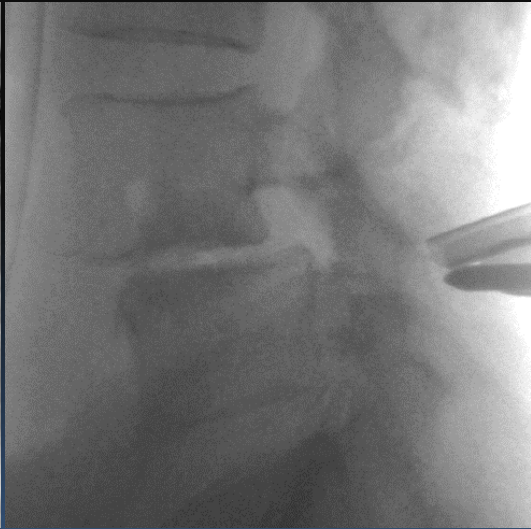
66/F. UBE-TLIF, Trans-Kambin with SAP resection. Kidney transplantation



# 61/F. Claudication with bilateral legs pain



# Gradual correction of spondylolisthesis during Modified UBE TLIF

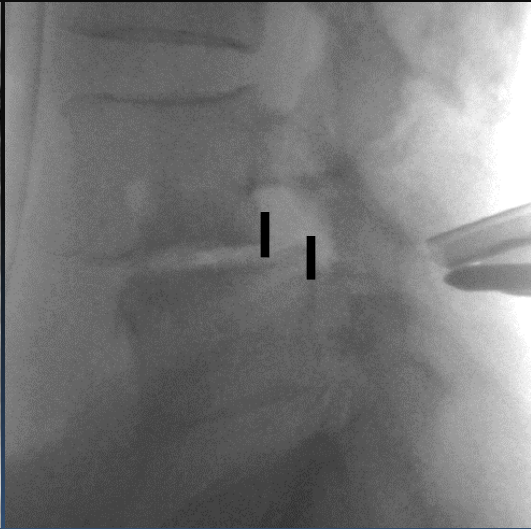


Ipsilateral  
facetectomy

Contralateral  
facetectomy

Total  
Discectomy

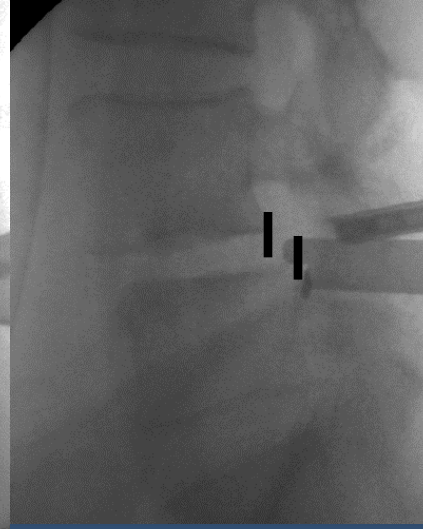
# Gradual correction of spondylolisthesis during Modified UBE TLIF



Ipsilateral  
facetectomy

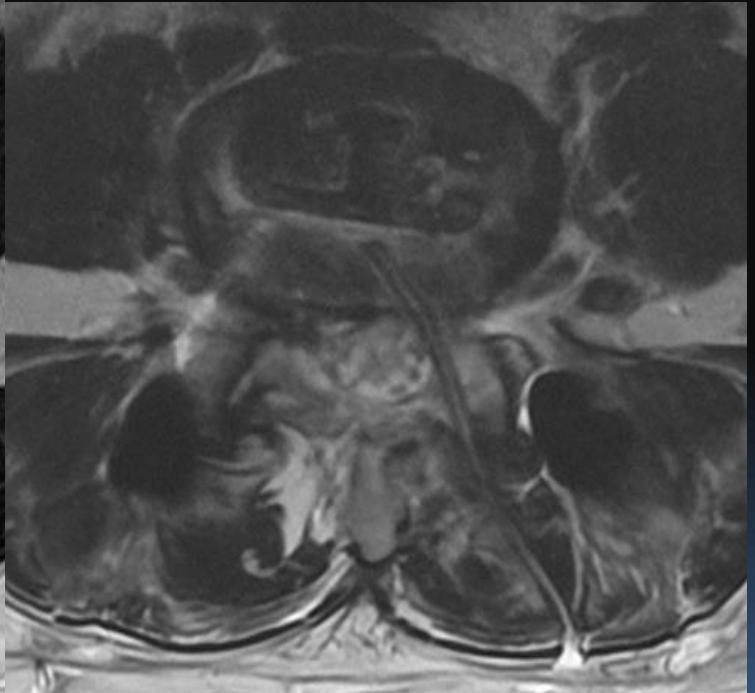
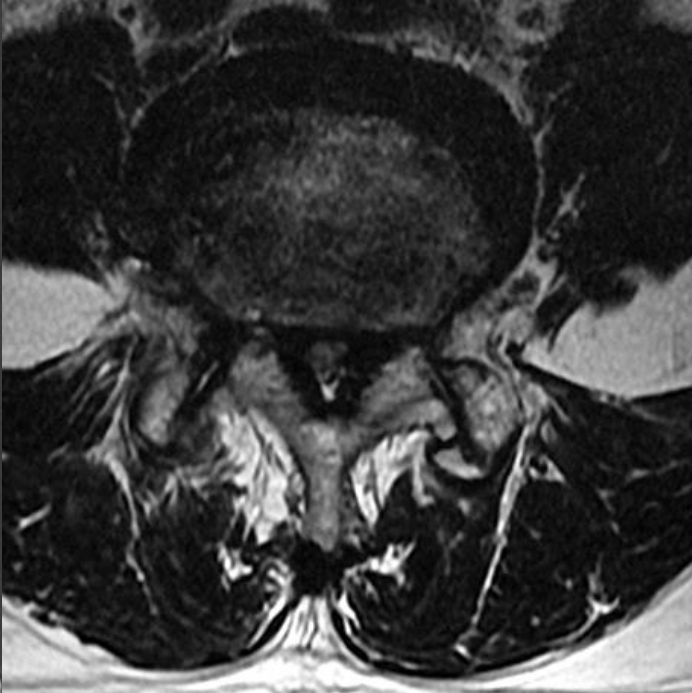


Contralateral  
facetectomy

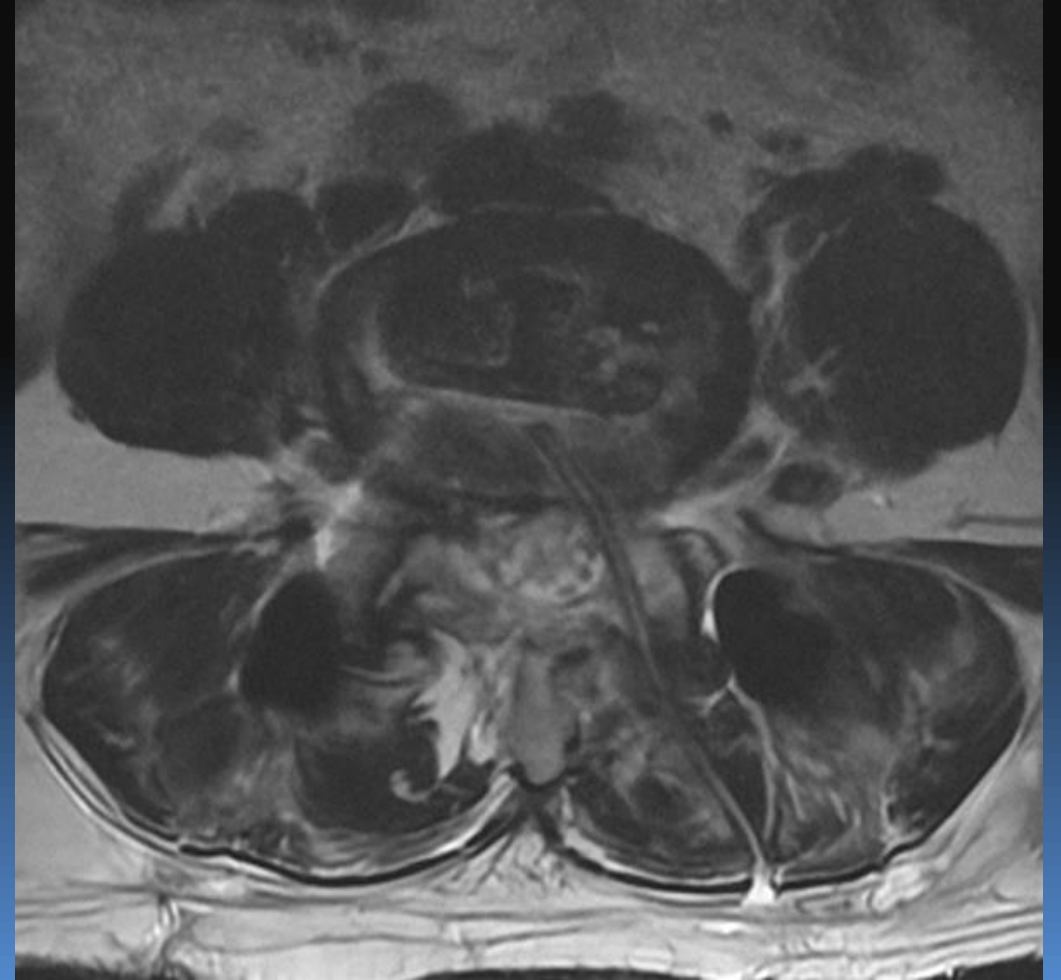


Total  
Discectomy

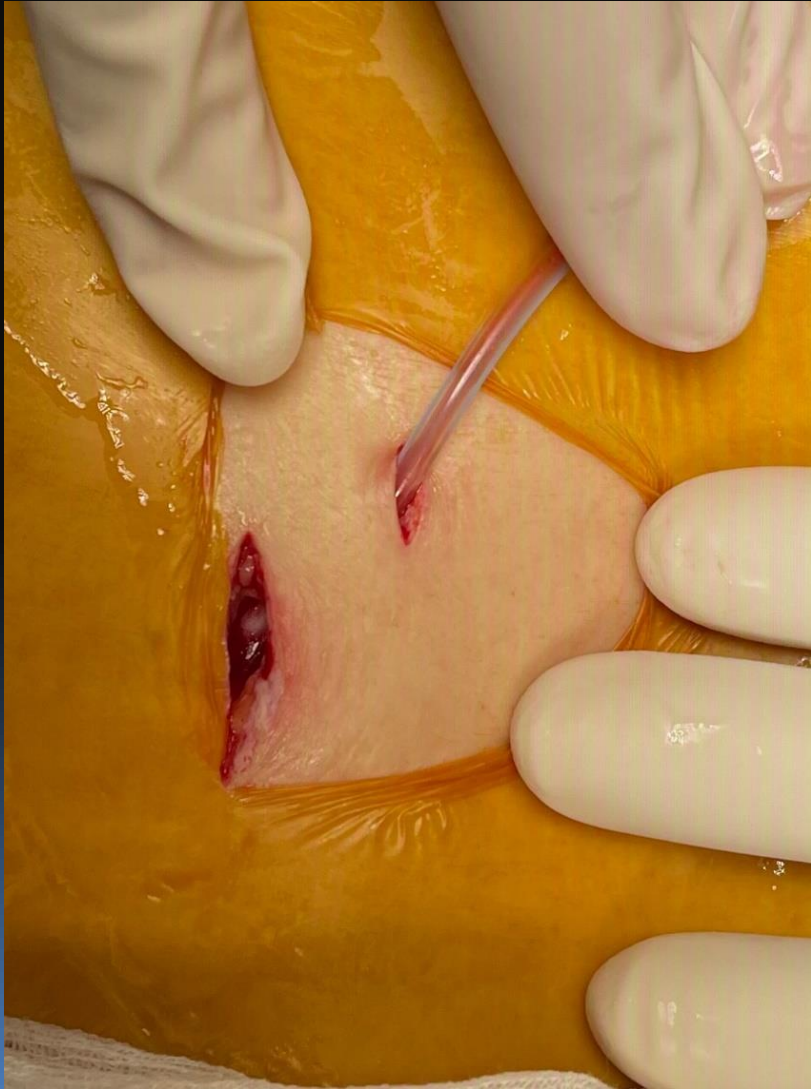




# Modified technique. **Bilateral facetectomy**



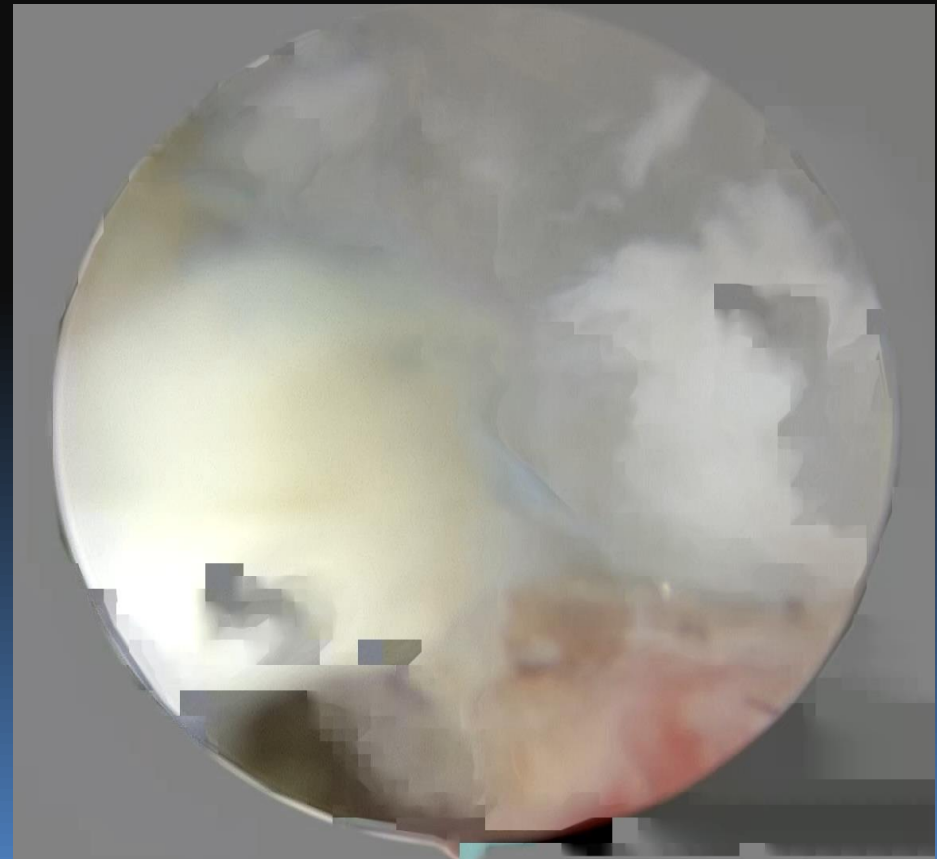




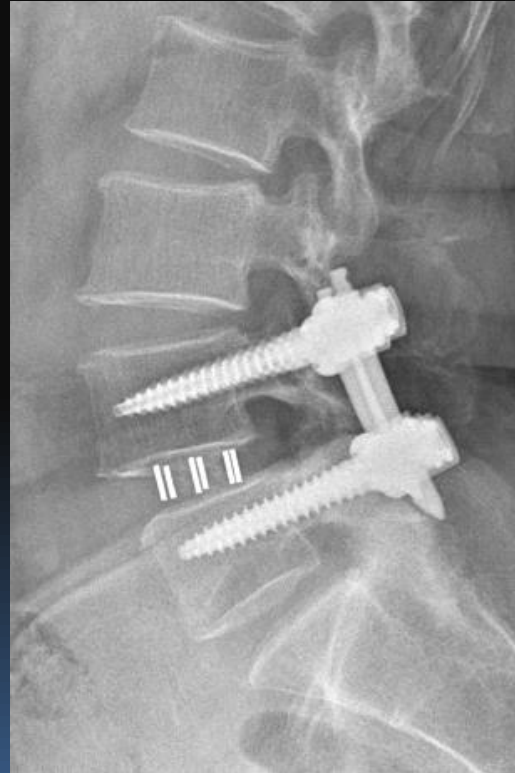
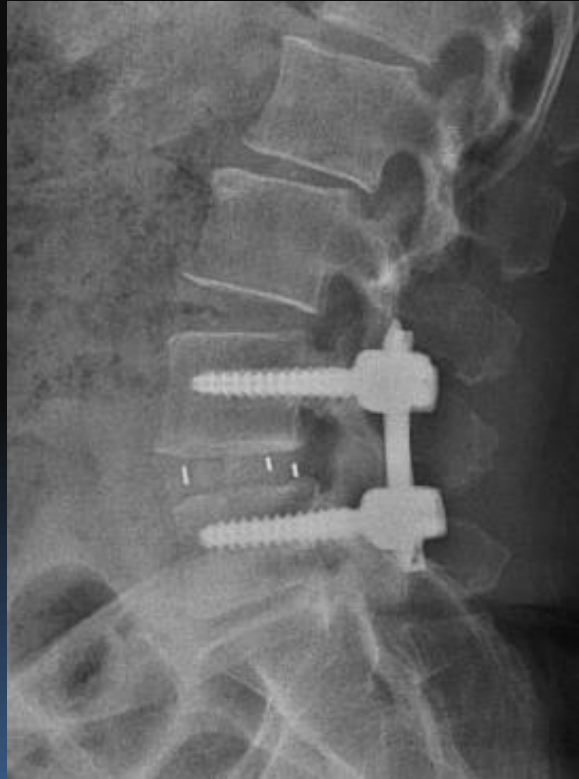
# Removal of Only Cartilaginous endplate from osseous endplate

→ complete endplate preparation

→ prevention of subsidence → Fusion



# Versatility and flexibility of biportal endoscopic TLIF



# Many articles including Meta-analysis

## Case-control study

1 [Evaluation of the Outcomes of \*\*Biportal Endoscopic\*\* Lumbar Interbody \*\*Fusion\*\* Compared with Conventional \*\*Fusion\*\* Operations: A Systematic Review and Meta-Analysis.](#)  
Cite Lin GX, Yao ZK, Zhang X, Chen CM, Rui G, Hu BS.  
Share World Neurosurg. 2022 Apr;160:55-66. doi: 10.1016/j.wneu.2022.01.071. Epub 2022 Jan 25. PMID: 35085805 [Review](#).  
OBJECTIVE: In recent years, **biportal endoscopic** lumbar interbody **fusion** (BE-LIF) has been increasingly used in the treatment of lumbar degenerative diseases. BE-LIF combines the benefits of minimally invasive **fusion** with **endoscopic** spine surgery ...

2 [Clinical Results and Complications of \*\*Endoscopic\*\* Lumbar Interbody \*\*Fusion\*\* for Lumbar Degenerative Disease: A Meta-Analysis.](#)  
Cite Heo DH, Lee DC, Kim HS, Park CK, Chung H.  
Share World Neurosurg. 2021 Jan;145:396-404. doi: 10.1016/j.wneu.2020.10.033. Epub 2020 Oct 13. PMID: 33065349 [Review](#).  
BACKGROUND: Although **endoscopic** transforaminal lumbar interbody **fusion** (TLIF) may combine the advantages of minimally invasive **fusion** and **endoscopic** spine surgery, little evidence exists on **endoscopic** TLIF. This meta-analysis investigated the cl ...

3 [Comparing the efficacy and complications of unilateral \*\*biportal endoscopic fusion\*\* versus minimally invasive \*\*fusion\*\* for lumbar degenerative diseases: a systematic review and meta-analysis.](#)  
Cite Wang Q, Chang S, Dong JF, Fang X, Chen Y, Zhuo C.  
Share Eur Spine J. 2023 Apr;32(4):1345-1357. doi: 10.1007/s00586-023-07588-6. Epub 2023 Mar 3. PMID: 36867251  
BACKGROUND: Unilateral **biportal endoscopic** (UBE) has been gradually applied in clinical practice. ...The efficacy of **biportal endoscopic** transforaminal lumbar interbody **fusion** (BE-TLIF) is still controversial. ...

4 [Comparing the efficacy of unilateral \*\*biportal endoscopic\*\* transforaminal lumbar interbody \*\*fusion\*\* and minimally invasive transforaminal lumbar interbody \*\*fusion\*\* in lumbar degenerative diseases: a systematic review and meta-analysis.](#)  
Cite Luan H, Peng C, Liu K, Song X.  
Share J Orthop Surg Res. 2023 Nov 22;18(1):888. doi: 10.1186/s13018-023-04393-1. PMID: 37993948 [Free PMC article](#).  
OBJECTIVE: To compare the efficacy and safety of unilateral **biportal endoscopic** transforaminal lumbar interbody **fusion** (BE-TLIF) and minimally invasive transforaminal lumbar interbody **fusion** (MIS-TLIF) in lumbar degenerative diseases. ...Two researcher ...

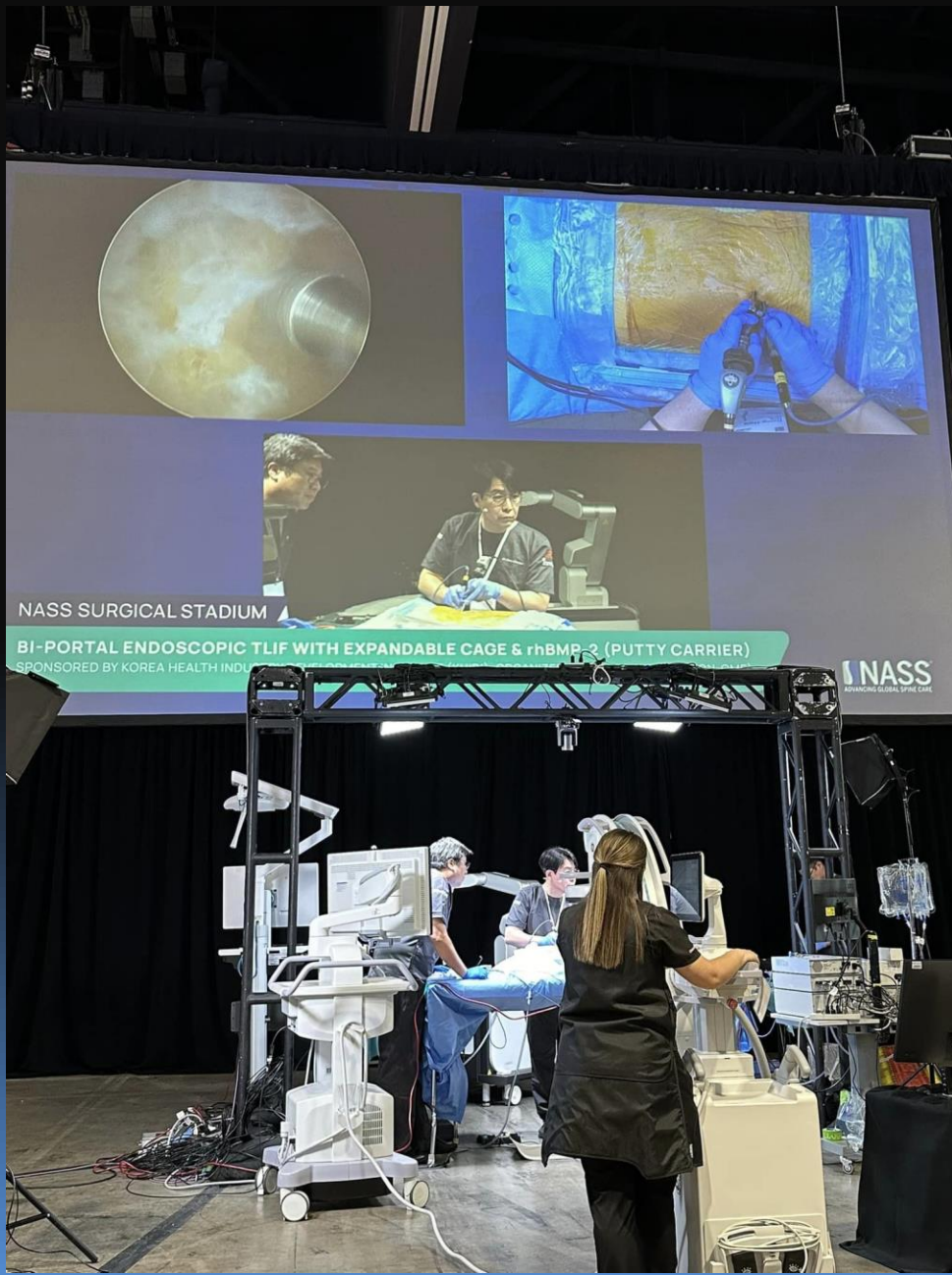
5 [Unilateral \*\*biportal endoscopic\*\* transforaminal lumbar interbody \*\*fusion\*\* versus conventional interbody \*\*fusion\*\* for the treatment of degenerative lumbar spine disease: a systematic review and meta-analysis.](#)  
Cite Yu Q, Lu HG, Pan XK, Shen ZH, Ren P, Hu XQ.  
Share BMC Musculoskelet Disord. 2023 Oct 24;24(1):838. doi: 10.1186/s12891-023-06949-y. PMID: 37875873 [Free PMC article](#).  
BACKGROUND: This meta-analysis compares the efficacy of unilateral **biportal endoscopic** transforaminal lumbar interbody **fusion** (UBE-TLIF) to conventional interbody **fusion** in lumbar degenerative diseases (LDD). ...The clinical outcomes assessment showed ...  
[PDF 보기](#)

6 [Comparison of efficacy between unilateral \*\*biportal endoscopic\*\* lumbar \*\*fusion\*\* versus minimally invasive transforaminal lumbar \*\*fusion\*\* in the treatment of lumbar degenerative diseases: A systematic review and meta-analysis.](#)  
Cite Li Y, Gao SJ, Hu X, Lin SS.  
Share Medicine (Baltimore). 2023 Aug 25;102(34):e34705. doi: 10.1097/MD.00000000000034705. PMID: 37653732 [Free PMC article](#).  
BACKGROUND: To evaluate the clinical efficacy and prognosis of unilateral **biportal endoscopic** lumbar **fusion** (ULIF) and minimally invasive transforaminal lumbar **fusion** (MIS-TLIF) for lumbar degenerative diseases. METHODS: Chinese and English databases w ...

7 [Short-term clinical efficacy and safety of unilateral \*\*biportal endoscopic\*\* transforaminal lumbar interbody \*\*fusion\*\* versus minimally invasive transforaminal lumbar interbody \*\*fusion\*\* in the treatment of lumbar degenerative diseases: a systematic review and meta-analysis.](#)  
Cite Han H, Song Y, Li Y, Zhou H, Fu Y, Li J.  
Share J Orthop Surg Res. 2023 Sep 4;18(1):656. doi: 10.1186/s13018-023-04138-0. PMID: 37667363 [Free PMC article](#).  
BACKGROUND: The aim of this study was to comprehensively evaluate the short-term clinical efficacy and safety of unilateral **biportal endoscopic** transforaminal lumbar interbody **fusion** (UBE-TLIF) versus minimally invasive transforaminal lumbar interbody **fusi** ...  
[PDF 보기](#)

8 [Clinical outcomes and complications after \*\*biportal endoscopic\*\* spine surgery: a comprehensive systematic review and meta-analysis of 3673 cases.](#)  
Cite Park DY, Upfill-Brown A, Curtin N, Hamad CD, Shah A, Kwon B, Kim YH, Heo DH, Park CW, Sheppard WL.  
Share Eur Spine J. 2023 Aug;32(8):2637-2646. doi: 10.1007/s00586-023-07701-9. Epub 2023 Apr 20. PMID: 37079079 [Review](#).  
PURPOSE: Current literature suggests that **biportal** spinal **endoscopy** is safe and effective in treating lumbar spine pathology such as lumbar disc herniation, lumbar stenosis, and degenerative spondylolisthesis. ...Significant improvement in VAS-Back, VAS-Leg, ODI, an ...  
[PDF 보기](#)

# NASS 2024 Surgical Stadium



## **Take home message**

**@ Biportal endoscopic technique: vigorously developing**

**@ Biportal fusion technique: Routine TLIF  
Modified technique**

**@ Cages for UBE: Two cages  
TLIF cage  
Large cage (like OLIF)  
Expandable cage**

**UBE approaches including fusion: Versatility and expandability**

# International Meeting of World UBE Society.

25-26 April. 2025  
in Seoul, South Korea.



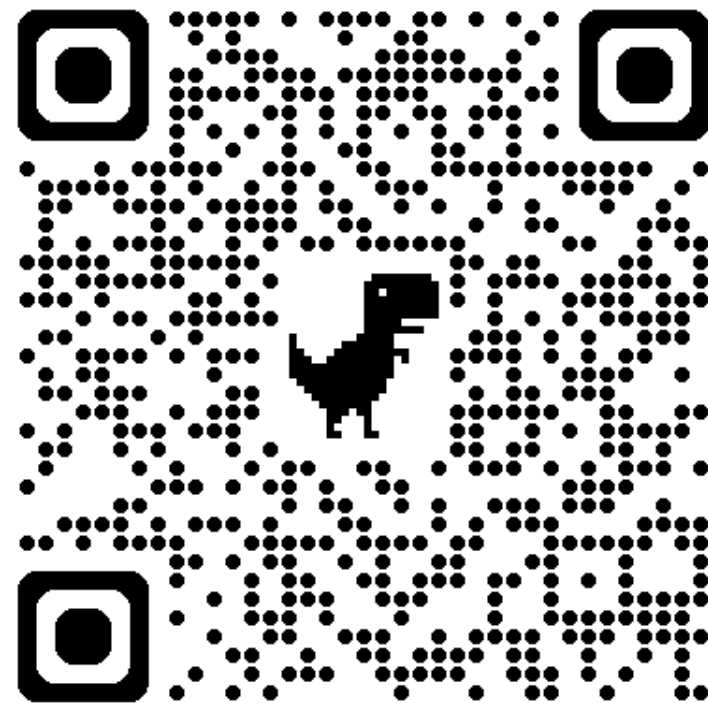
# 2025 WUBE

2025 International Meeting of  
the World Unilateral Biportal Endoscopy Society

*The Present and Future of UBE: Innovation, Precision and Collaboration*

April 25<sup>Fri</sup> - 26<sup>Sat</sup>, 2025

The Catholic Univ. of Korea, Seoul St. Mary's Hospital, Grand Auditorium (B1F), Korea





# Thank you!

