



**GLOBUS
MEDICAL**

**L4/5 Spondylolisthesis and
Expandable Technology**

Mr Michael J H McCarthy
Consultant Spinal Surgeon
University Hospitals of Wales, UK

Fusion Portfolio Minimally Invasive Surgery Biomaterials Motion Preservation

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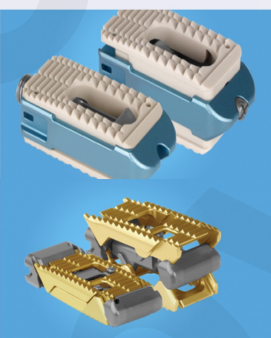


Armamentarium - TLIF

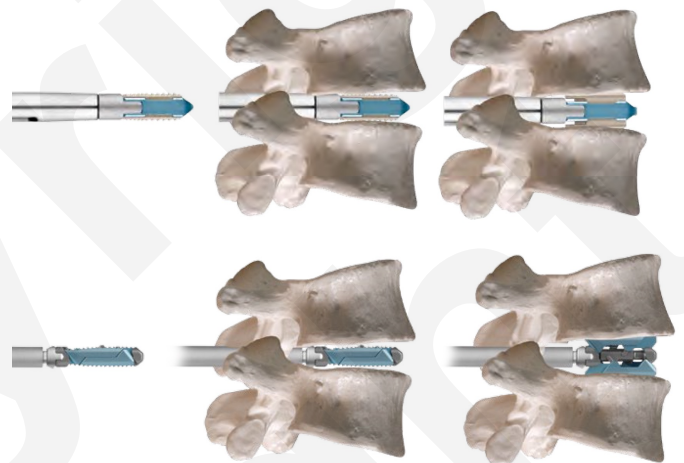
- Auto / Allograft / Biologics
- Threaded / Cylindrical cages
- Banana cages
- Oblique cages
- Articulated cages
- Expandable cages
- Titanium / PEEK / Plasma Coated

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Multiple Sagittal Profiles

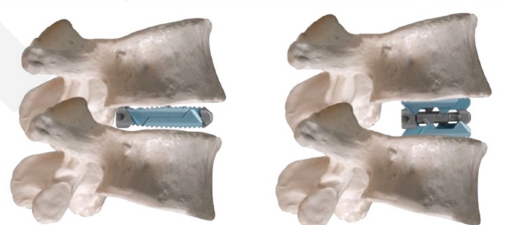
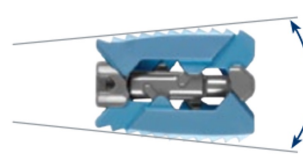
Lordotic Expansion

7mm 0–10° 8mm 0–12°

Parallel Expansion

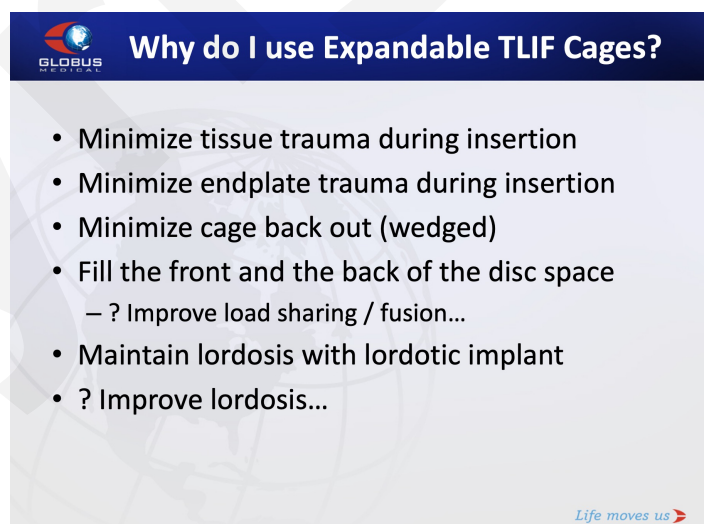
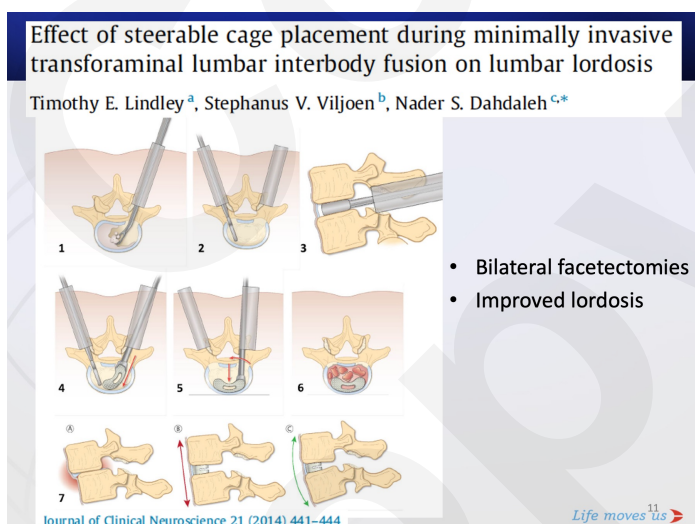
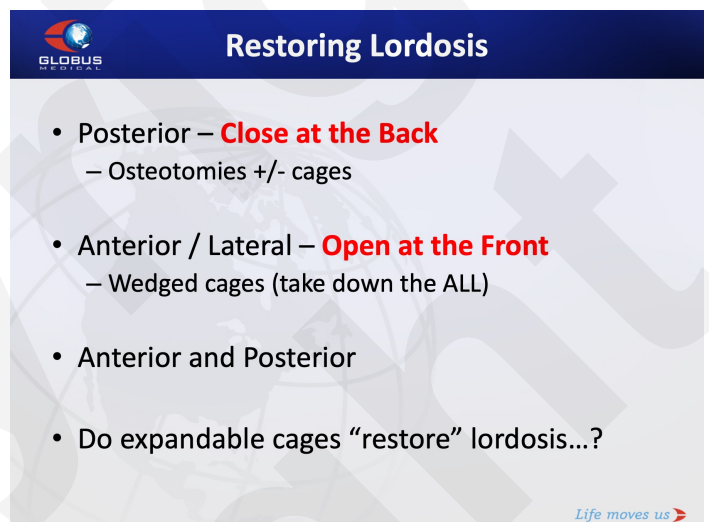
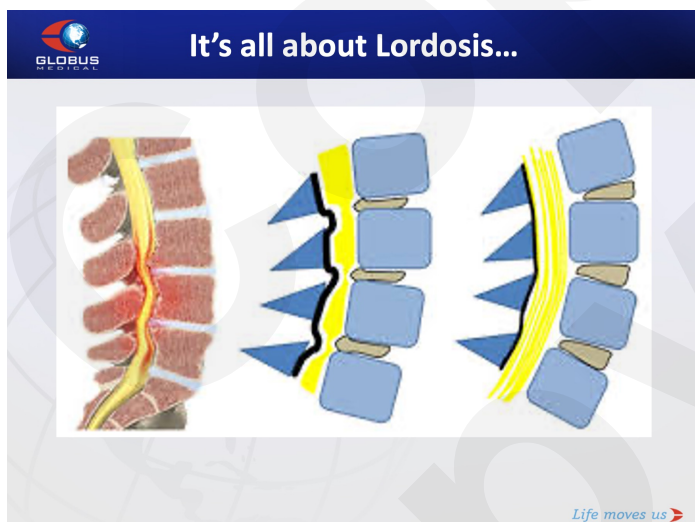
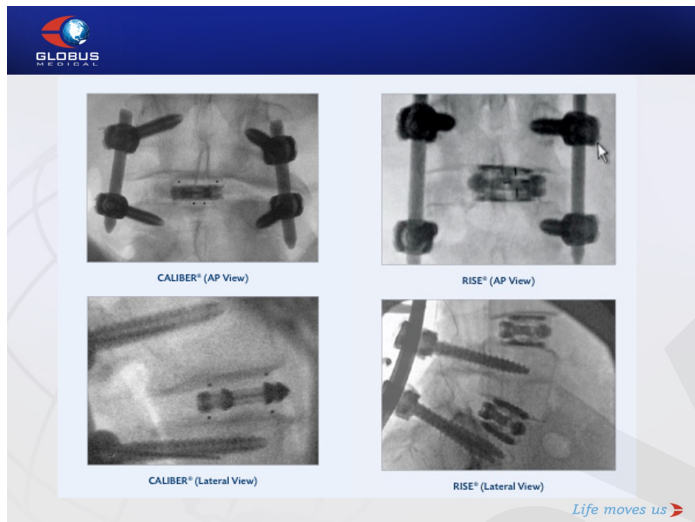
Starting at 7mm 4° Starting at 9mm 12° Starting at 11mm 15°

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4°, 10°, or 15°
lordotic options,
ideal for the L5-S1
disc space

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Expandable TLIF – RISE / Caliber

- My personal experience:
- No cage back outs >50 cases
- No post op subsidence
 - Yes to intraop endplate damage and intra op subs
 - Yes to cage insertion non parallel to endplates
- Yes to post op perineural inflammation
 - Stopped using DBM in cage

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Minimally invasive transforaminal lumbar interbody fusion with expandable versus static interbody devices: radiographic assessment of sagittal segmental and pelvic parameters

Conclusions

MIS-TLIF with an expandable interbody device led to a larger and longer-lasting increase in disc height, foraminal height, and index-level segmental lordosis than MIS-TLIF with a static interbody device, especially for patients with a collapsed disc space. MIS-TLIF did not affect radiographic pelvic parameters.

**19 static in 16 pts
29 exp in 28 pts**



Assessment of radiographic and clinical outcomes of an articulating expandable interbody cage in minimally invasive transforaminal lumbar interbody fusion for spondylolisthesis

49 exp in 44 pts

CONCLUSIONS The use of this expandable, articulating, lordotic, or hyperlordotic interbody cage for MIS TLIF provides a significant restoration of segmental height and segmental lordosis, with associated improvements in sagittal balance parameters. Patients treated with this technique had acceptable levels of fusion and significant reductions in pain and disability.

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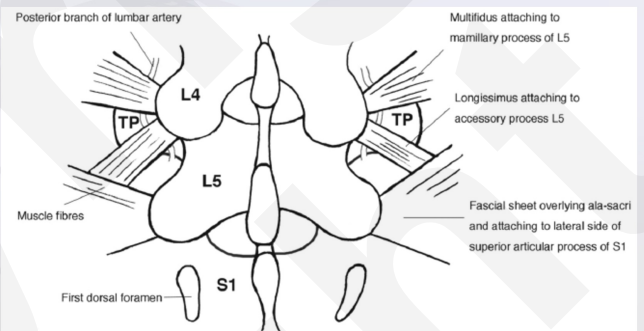
The expandable transforaminal lumbar interbody fusion – Two years follow-up

Study Name & Date	Type of cage	No of patients	Follow up	Fusion Rate	Maintained disc height & neuroforaminal height	Complication
Cloward et al. 1940	Tricortical graft	40 years experience	N/A	92%	N/A	N/A
Brantigan 1993	Carbon fibre synthetic cage	26	2 years	100%	N/A	N/A
McAfee et al 2005	Static TLIF	120	2 years	N/A	Disco height maintained in 68%	Dural tear (5.8%) Deep infection (1.6%) Cage migration (0.8%)
Rouben et al 2011	MIS Static TLIF	169	49 months	96%	N/A	Adjacent segment disease (1.7%) Pseudarthrosis (0.6%) Nil
Kim et al 2016	MIS expandable TLIF	50	2 years	97%	Improved & Maintained	Dural tear (1.9%)
Current study	Expandable TLIF (open & MIS)	54	2 years	100%	Improved & Maintained	Dural tear (1.9%)



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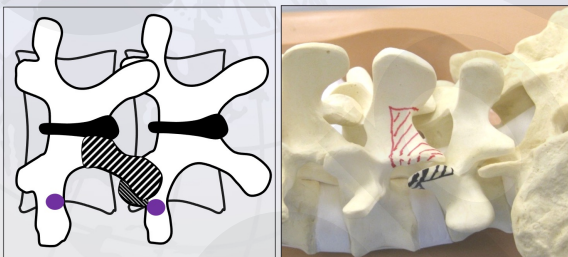
TLIF Anatomy



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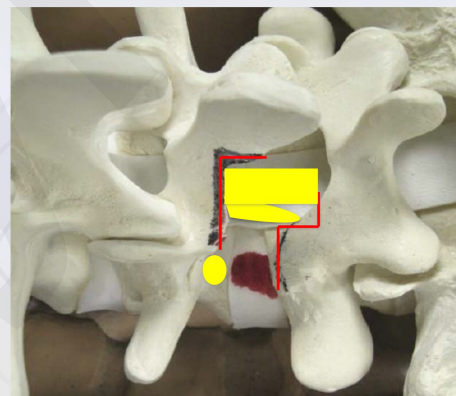
TLIF Anatomy

- Inferior articular process IAP (red)
- SAP (blue)
- Lamina to base of spinous process



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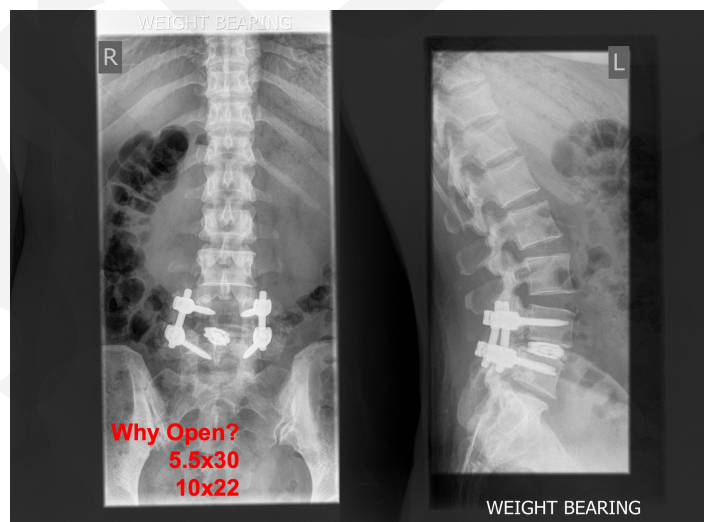
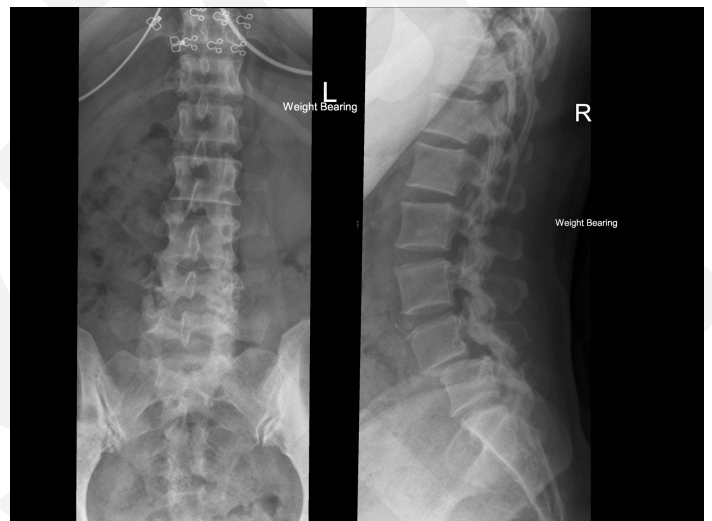
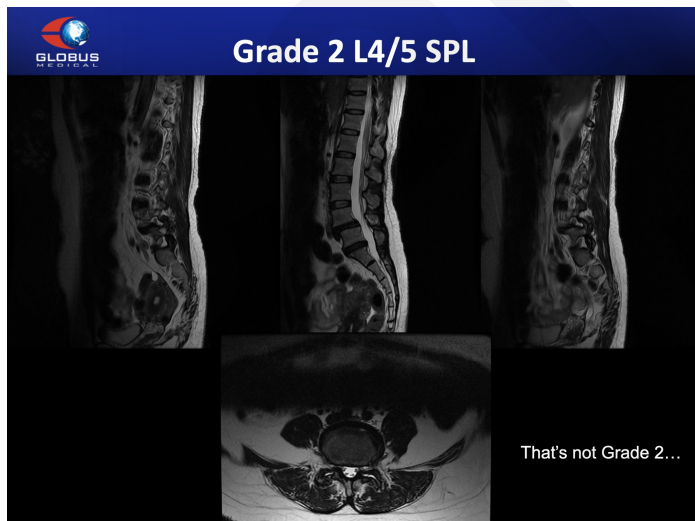
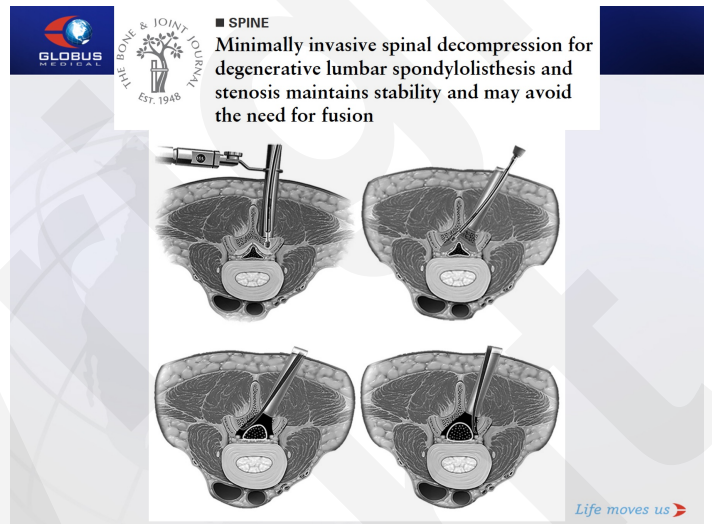
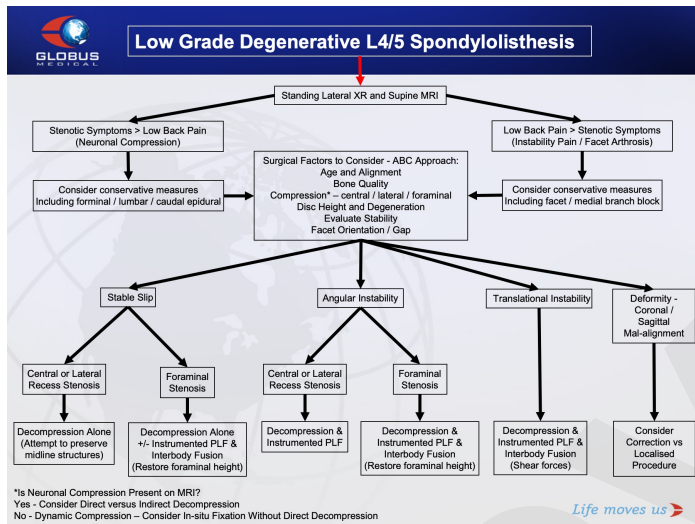
TLIF Anatomy

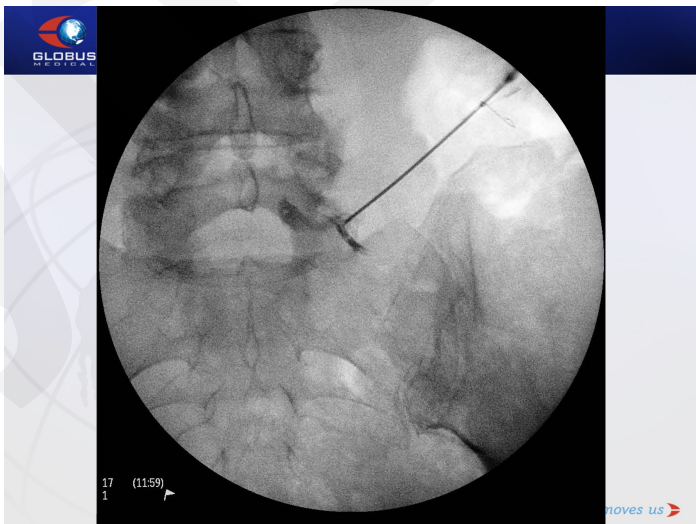
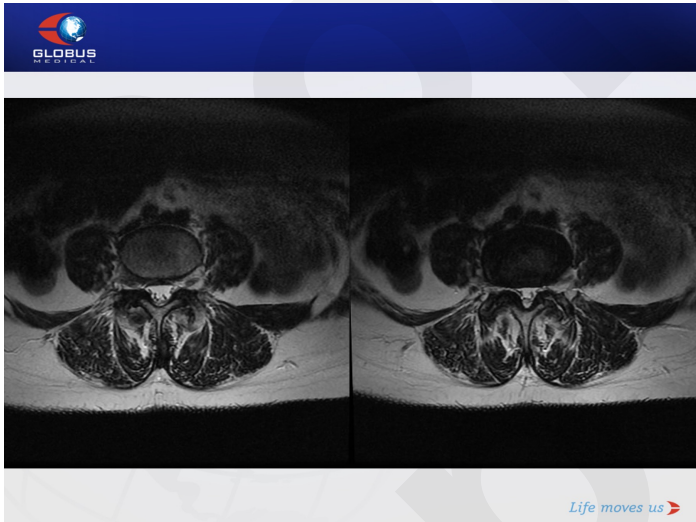
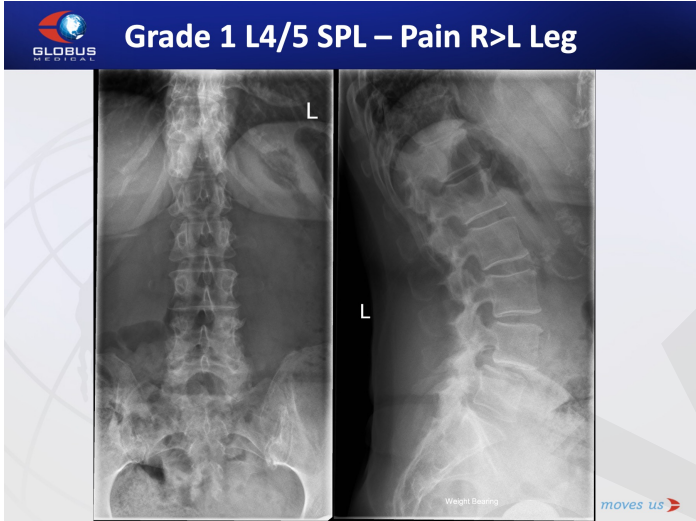


**Proficiency Point
MIS TLIF =
25 cases**

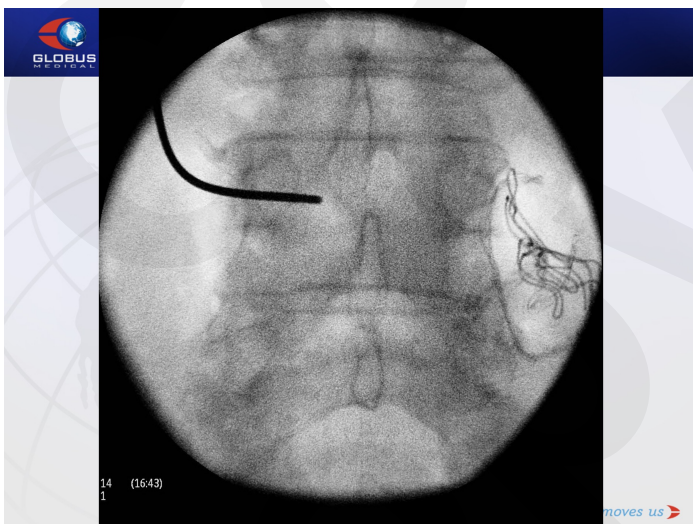
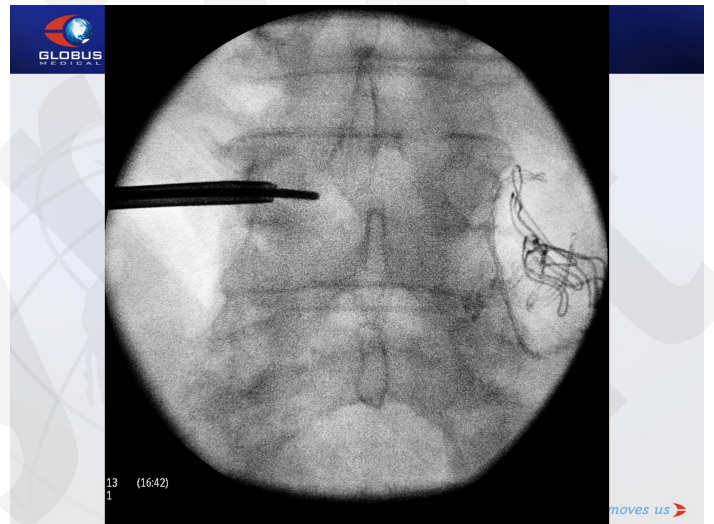
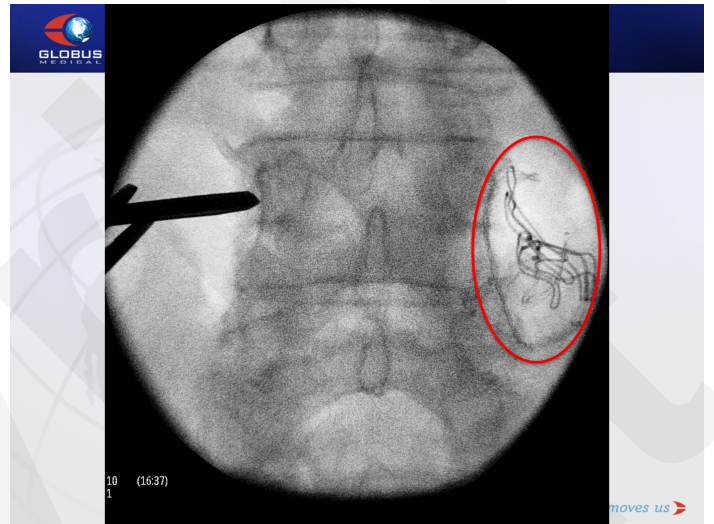
**Learn open
before MIS...
...bail out is
open!**

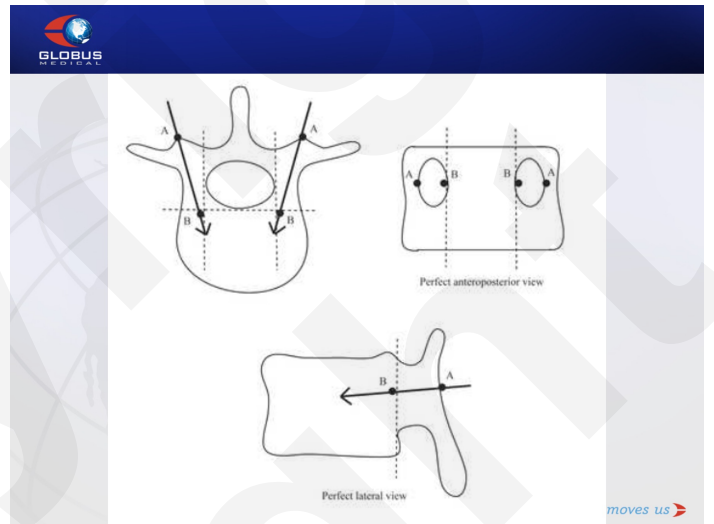
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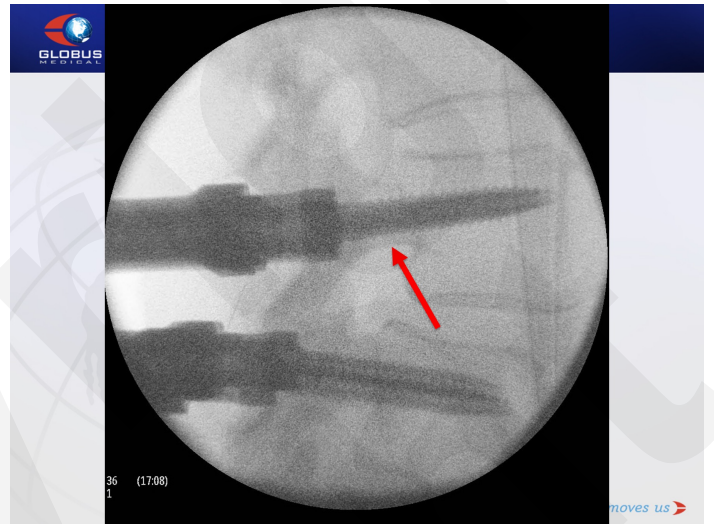








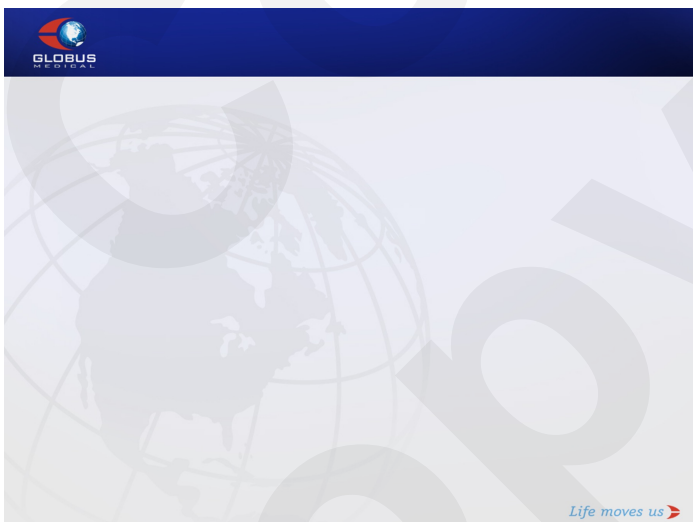
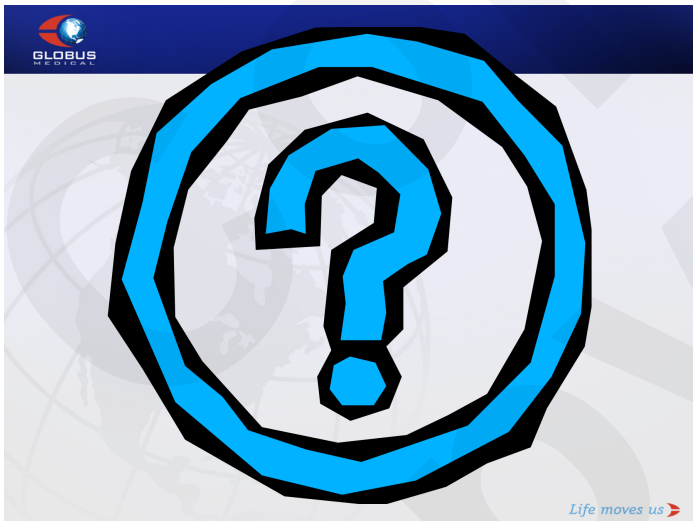


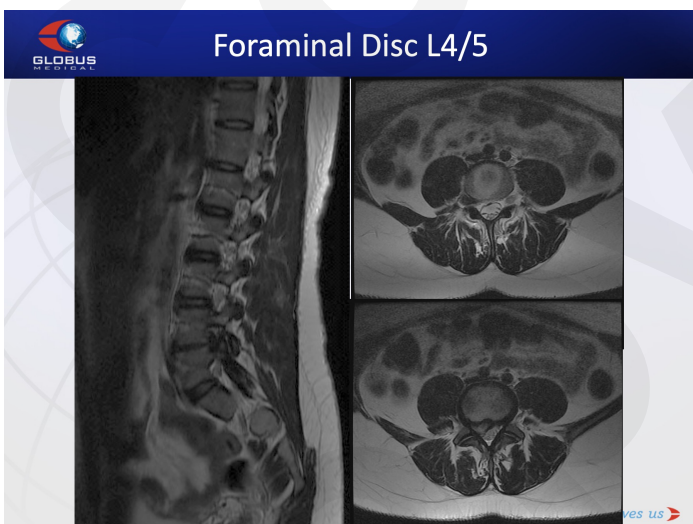
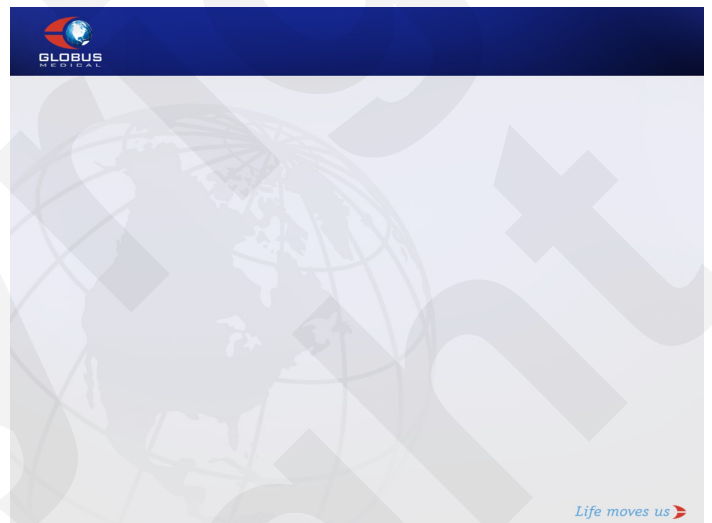
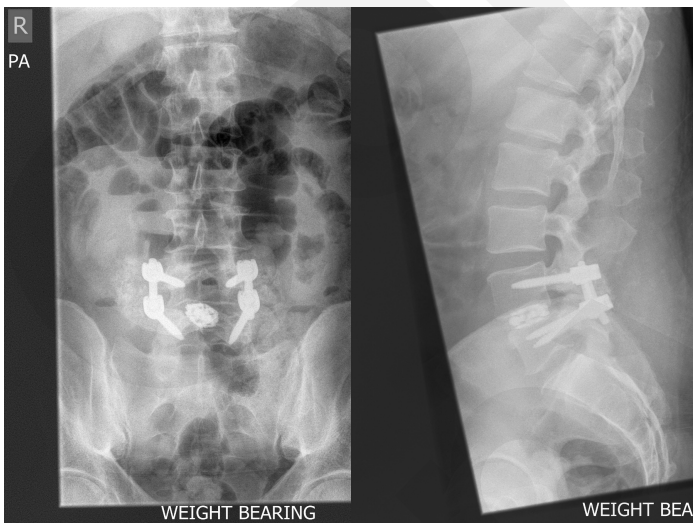


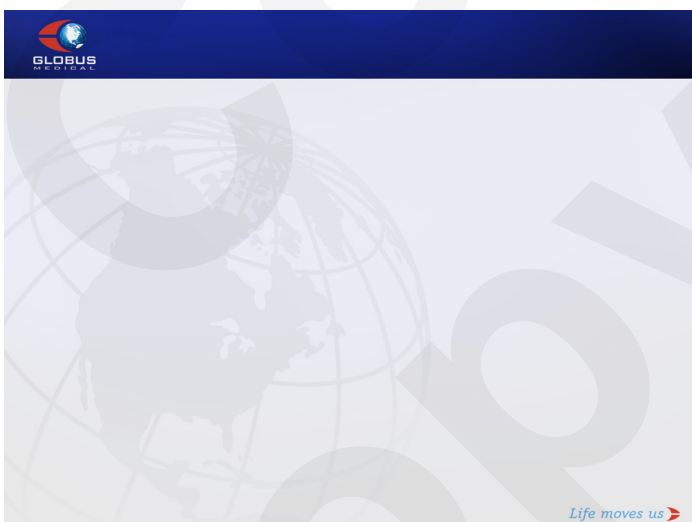




• Preop:		• Postop:	
• VAS Back	6	• VAS Back	1
• VAS Leg	9	• VAS Leg	1
• ODI	52	• ODI	26
• EQ5D	41442	• EQ5D	22221
• PHQ9	21	• PHQ9	0
• GAD7	8	• GAD7	0







Indications for Surgery - DRS

- **Decompression**
 - Spinal cord / nerve roots
- **Realignment**
 - Correct deformity
- **Stabilisation**
 - Prevent / Treat
 - Neurological deficit / deformity / pain
 - (Non fusion technology form of “stabilisation”)

All may require fusion

Require Instrumentation

Instrumentation increases fusion

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