

APPROCH TO THE THORASIC SPINE ANTERIOR VS POSTERIOR

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THORASIC DISK AT A SHORT GLANCE



The first reports of thoracic disc herniation in 1838 and by Middleton and Teacher



in 1911 and the first review of surgical cases was published in 1936 by Hawk.



The incidence of thoracic disc herniation with neurological deficit is 1/1,000,000 though incidental magnetic resonance findings are 10-20%



Surgical indications for this pathology are rare, corresponding to between 0.15 and 4% of disc herniation surgeries




THORASIC DISK AT A SHORT GLANCE

- Surgical indications for this pathology are rare, corresponding to between 0.15 and 4% of disc herniation surgeries
- The presence of intradiscal calcifications is characteristic, occurring in 60% of cases, and is a critical factor in determining the best surgical access approach.
- Approximately 75% of thoracic disc hernias are located below T8, primarily at T11-T12


MANIFESTATION OF TDH

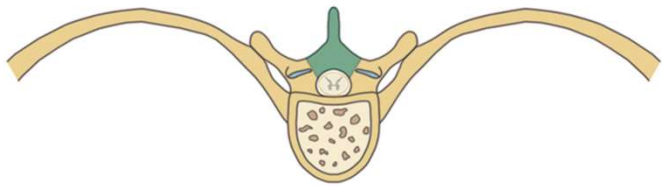
- The most common initial clinical manifestation is **back pain**, a nonspecific symptom, in most cases related to a delayed diagnosis.
 - **Radiculopathy** is another form of presentation and evolves with radiating pain and **hypoesthesia** of the intracostal dermatome, but the absence of myotomes in the region and the fact that thoracoabdominal pathologies may have similar symptoms can also lead to a late diagnosis.¹⁵
 - **Myelopathy** is the most common form of presentation in clinical practice, in the context of an investigation of crural paraparesis, changes in sensitivity at the thoracic level, and sphincter changes
- Unusual symptoms** like:
- abdominal pain ,
 - uni or bilateral dropfoot
 - Sexual dysfunction

- 
- Surgical approach to the spine might be simply classified into

anterior posterior combined approach .

still no “gold standard” for the treatment of this pathology

- Each has its role and the choice of the best approach depends on several factors, such as:
 - the level of the disease in the spine
 - the extent of the lesion > 3 level
 - Location of calcification
 - Presence of local kyphosis (> 20°)
 - the need of spinal reconstruction or stabilization
 - The experience of surgeon
- 



usual approaches: posterior

- **Laminectomy:**
- The posterior approach laminectomy was widely used in before, with catastrophic results and serious neurological worsening in 70% of cases
- **The main causes are :**
- Limited space
- Acceleration of local kyphosis and vascular insults

usual approaches : posterolateral

- **ADVANTAGES:**

FAMILIAR AND EASY REPAIR OF DURATOMY

LESS RISK OF VISCERAL DAMAGE

AVASCULAR PLANE

NO LIMIT IN THE EXTENT AND BILATERAL
PATHOLOGIES

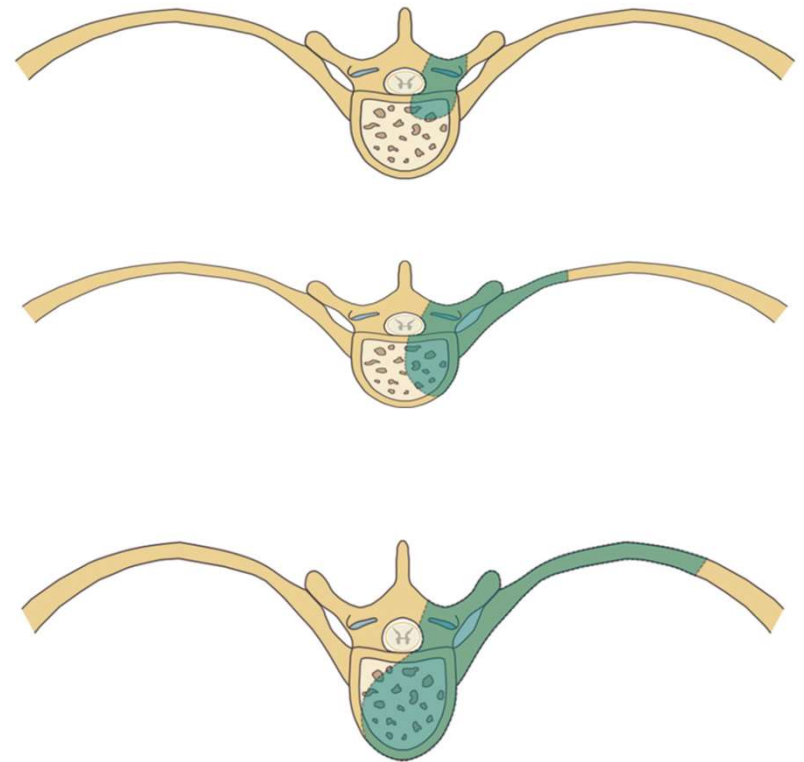
- **DISADVANTAGES**

VENTRAL ACCESS

IATROGENIC DAMAGE

ENHANCE KYPHOSIS DUE TO TENSION BAND
DAMAGE

EXTENSIVE DISSECTION AND BLEEDING

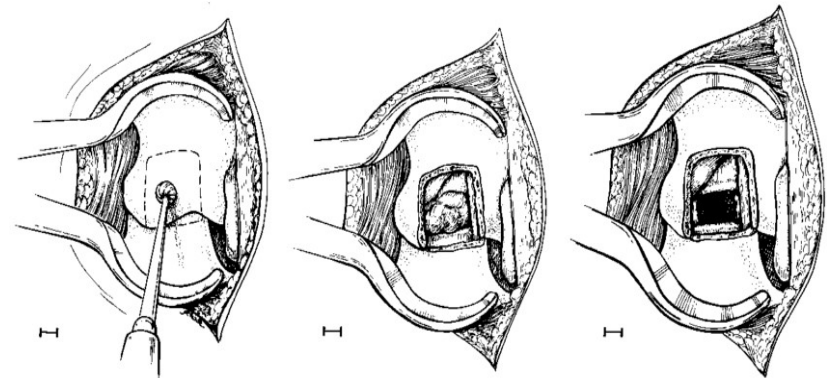


PEDICULAR SPARING TRANSFACET DISCECTOMY

- SHAVE MUSCLE TO THE T.P
- USE PROMPTLY THE **IONM**
- PUT THE UPPER SCREW AND IF YOU DECIDE TO PERFORM UNILATERALLY PUT THE COTRALATERL LOWER SCREW AND DISTRACT THE SPACE
- DRILL THE 1/3 SUPERIOR OF LOWER PEDICLE
- BE SURE YOU SEE THE LATERAL ASPECT OF DURA

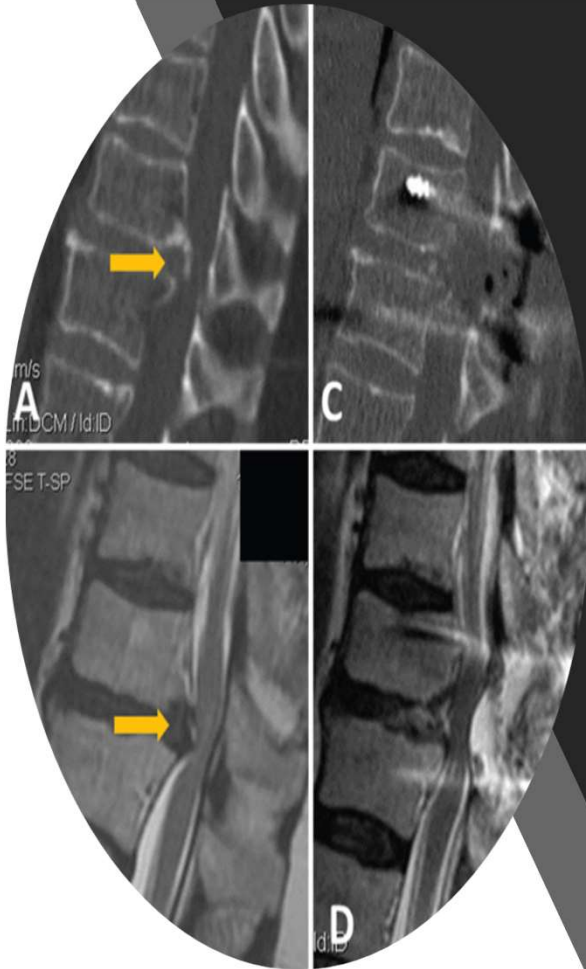


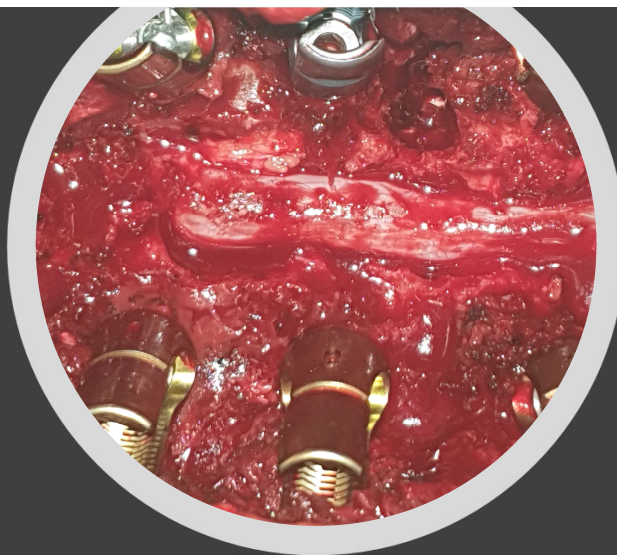
Fig. 1. (Thibon) Left: Anatomical landmarks for pedicle-sparing and laminar bone-sparing discectomy. (From)



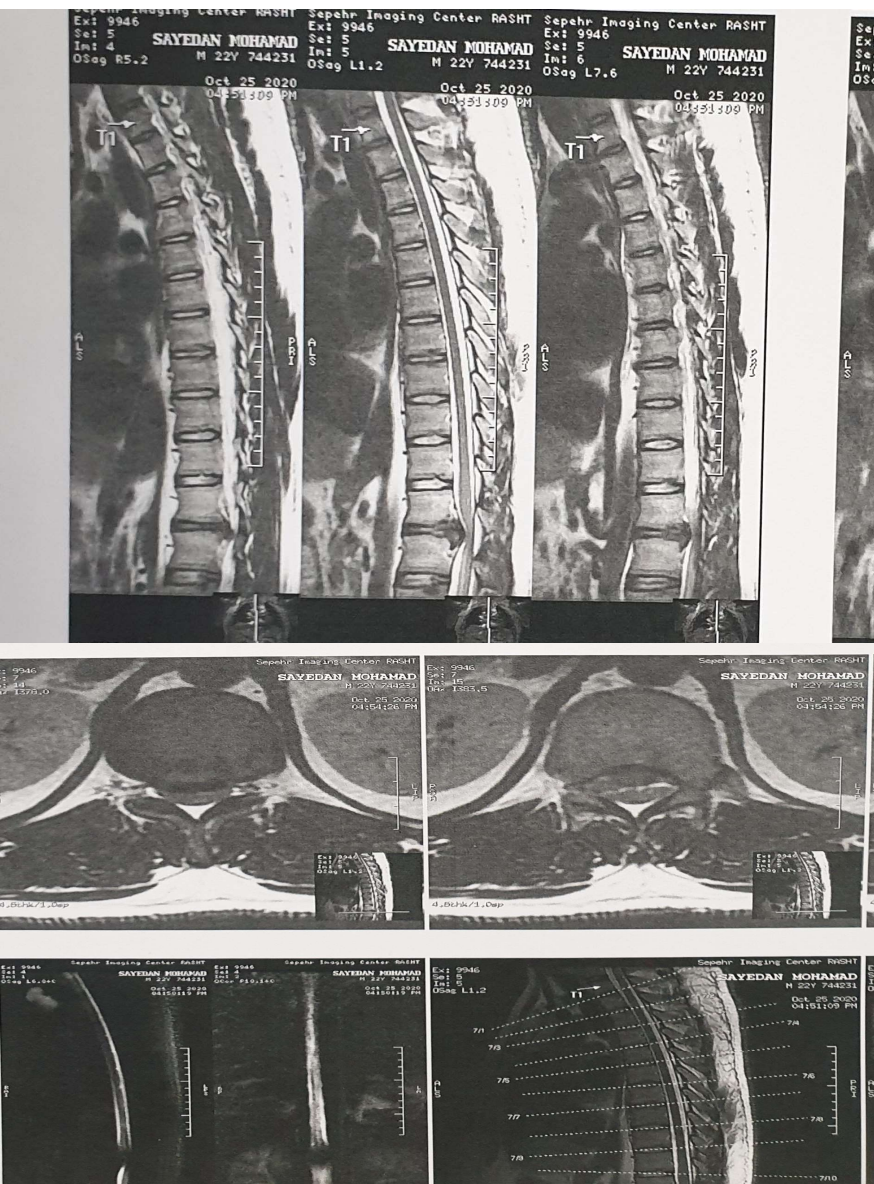
MY EXPERIENCE

- 56 CASES AND 68 LEVEL
- 5 CASES DURATOMY WITHOUT LEAKAGE
- 7 CASE INTRAOPERATIVE I.O.N.M DECREAMENT
- 4 CASE TRANSIENT NEUROLOGIC DEFICIT(3 BROWN SEQUARD,1 ANT CORD SYNDROM)
- 1 CASE UNILATERAL DROP FOOT(RECOVERD AFTER 6 MONTH)
- 1 CASE PARAPLEGIC
- 3 CASE HAD SECONDARY ANT APPROACH



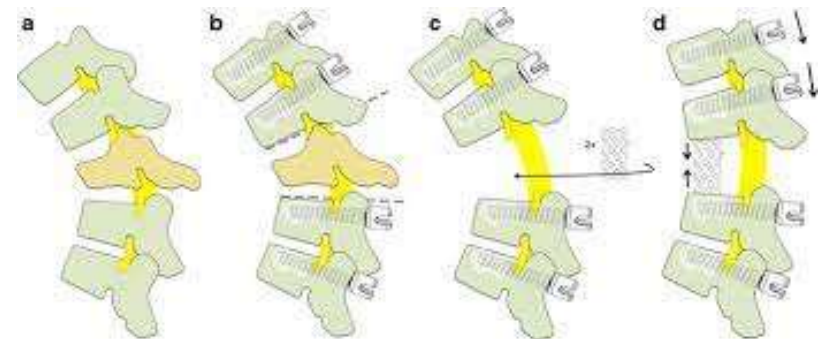


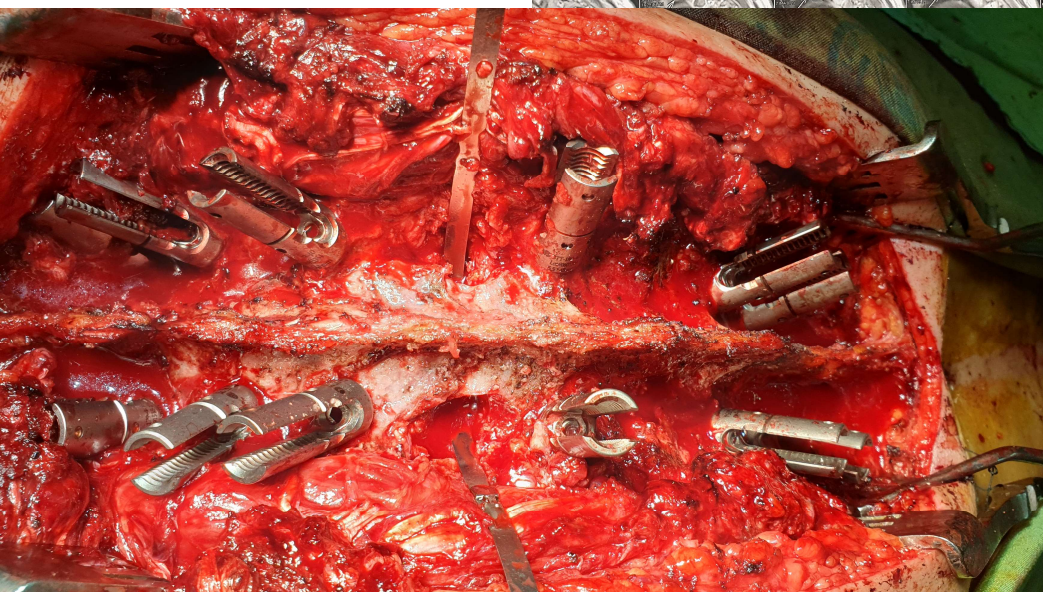
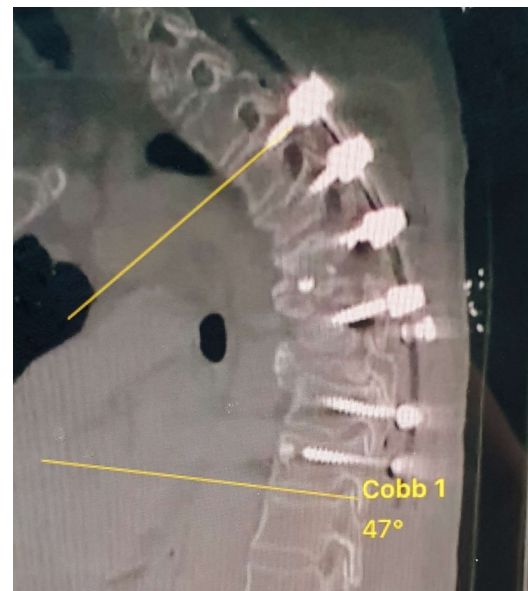
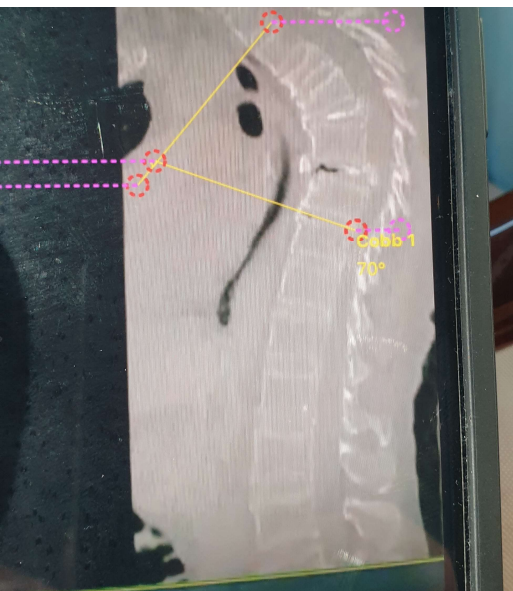
THORASIC DISC WITH OYL



EXTENDED POSTEROLATERAL APPROACHES

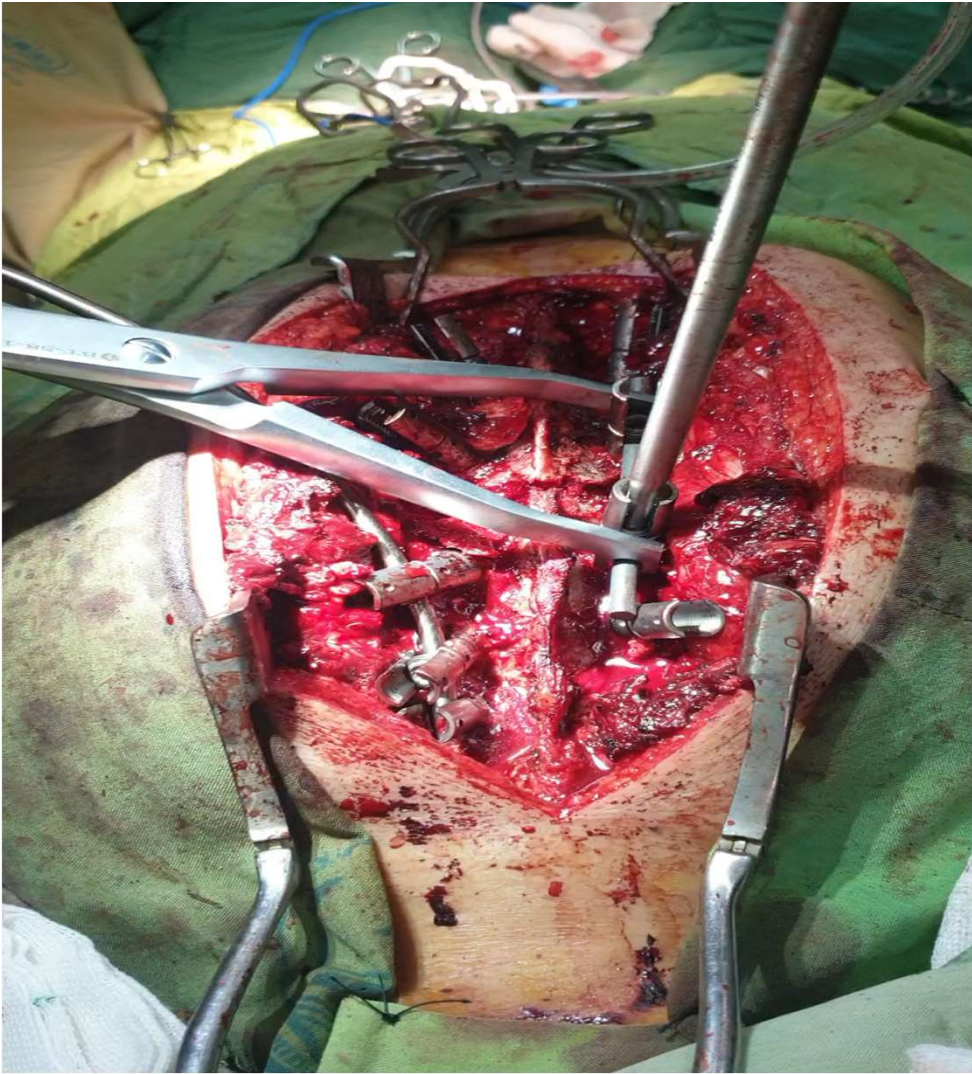
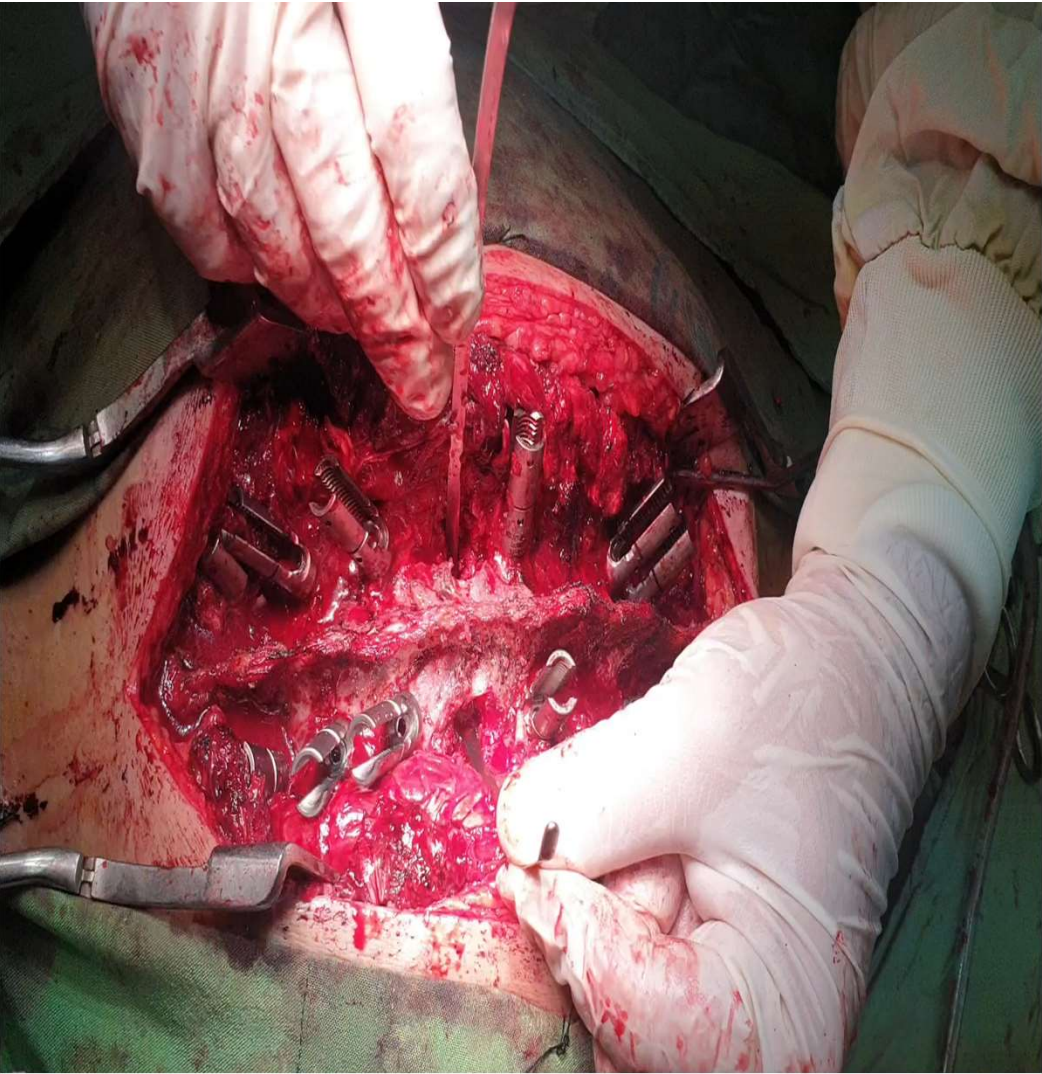
- FOR DECREASING KYPHOSIS
- FOR PARTIAL OR COMPLETE CORPECTOMY OR TUMOR RESECTION
- MUST BE DONE BILATERALLY
- SUPERIOR AND INFERIOR END PLATE AND DISK MUST BE REMOVED
- ONE OR TWO RIBS MUST BE RELEASED FROM BODY





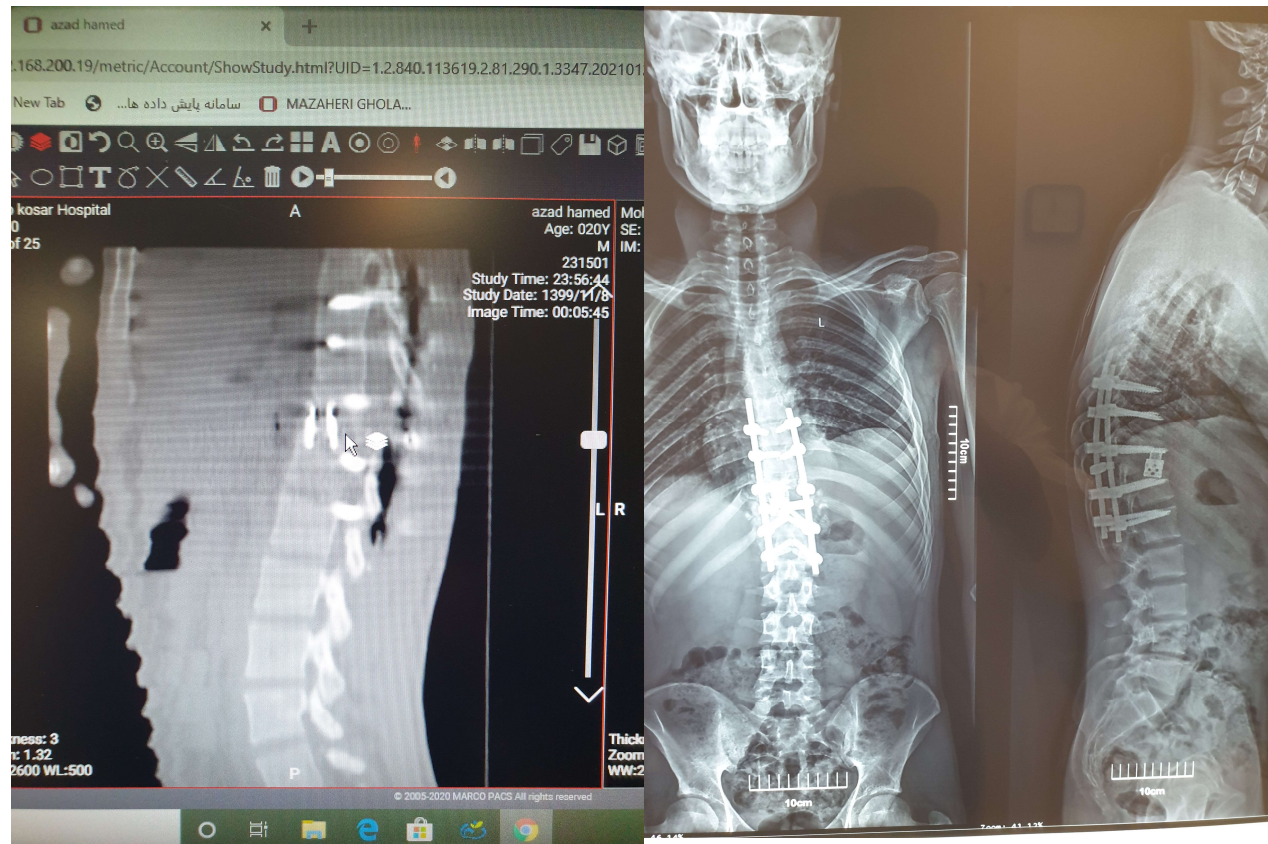
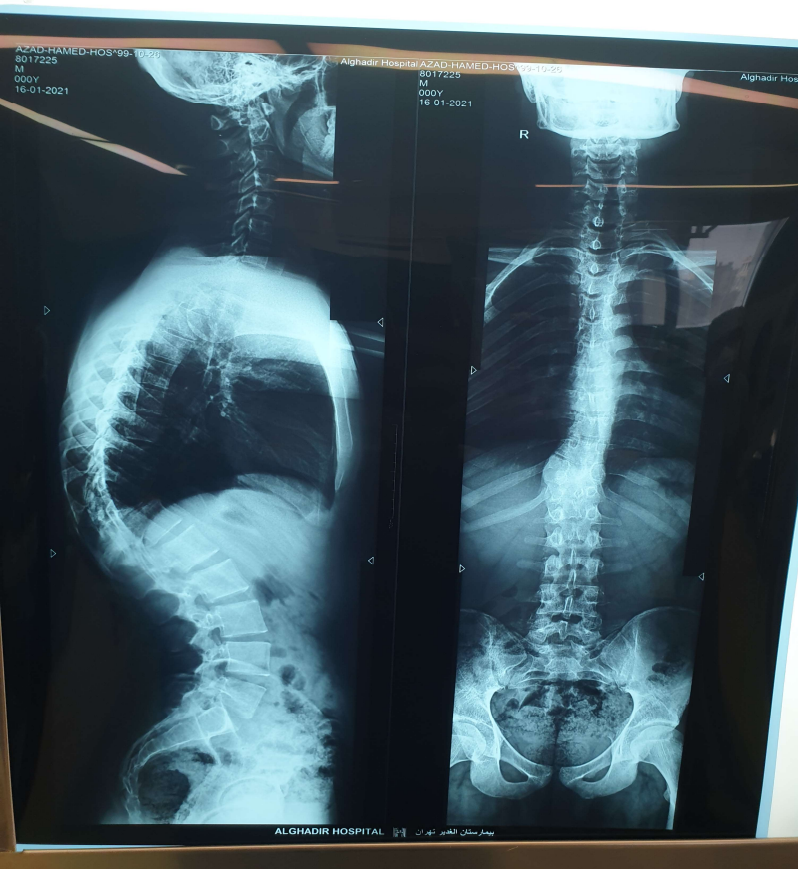
58 YEAR MALE

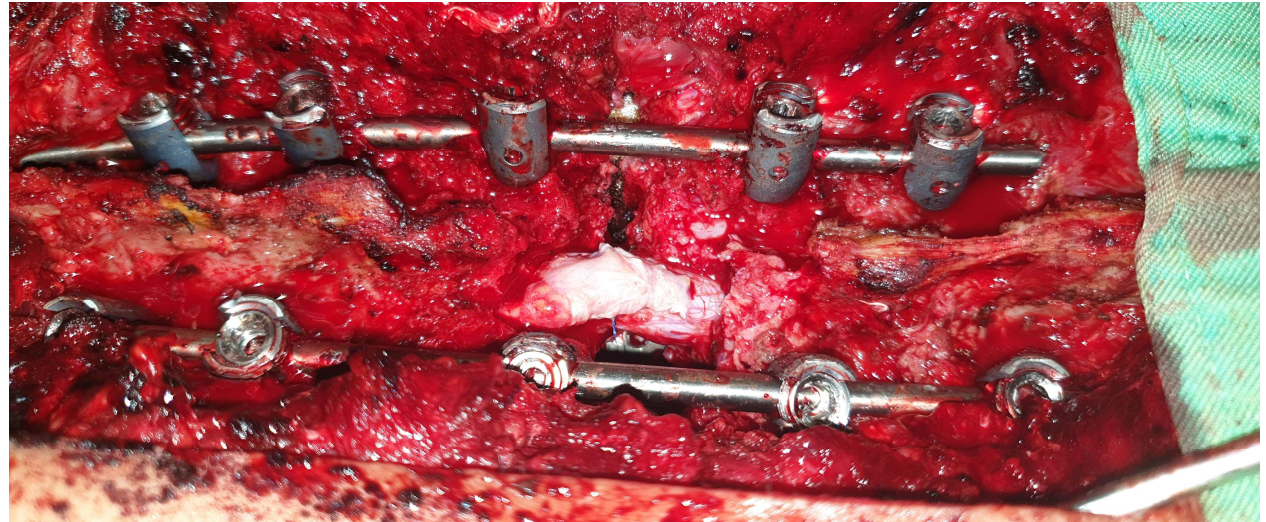
- SEVER PARAPARESIS



PVCR

16 YEAR MALE WITH CONGENITAL KYPHOSIS W/ FDGE VERTEBRAE

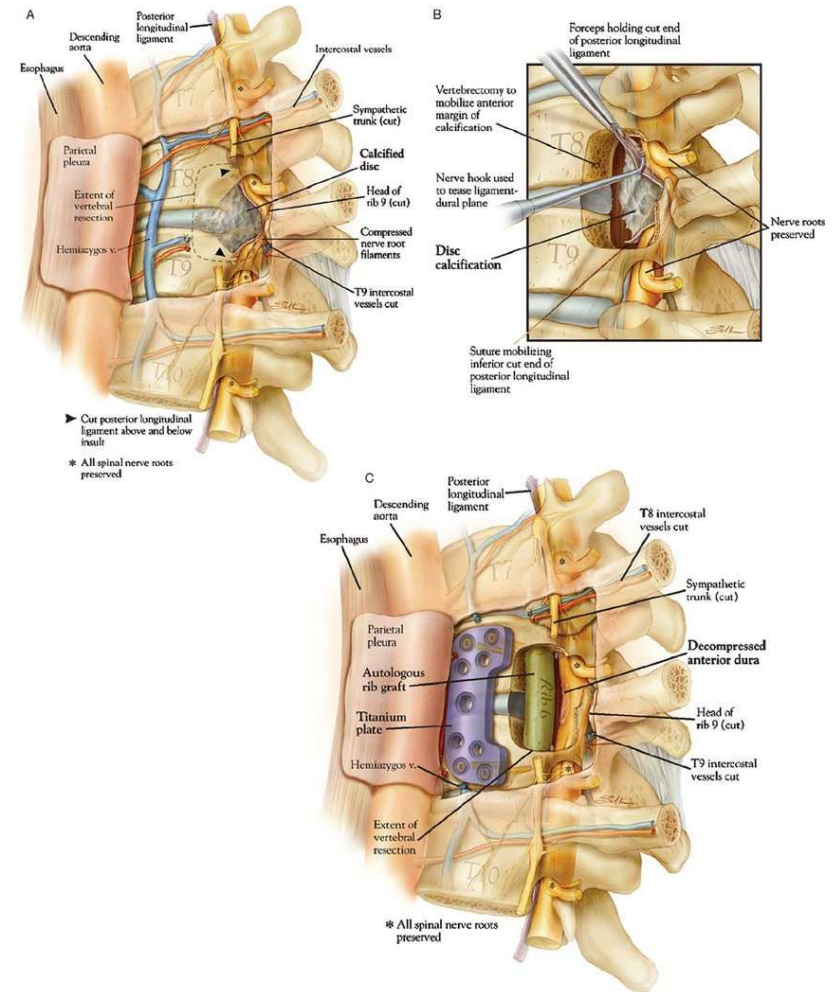




WEDGE VERTEBRE RESECTION AND RECONSTRUCTION (ONE STAGE)

ANTEROLATERAL APPROACH

- Various spinal cord compression pathologies: progressive myelopathy, lower extremity weakness, or recalcitrant unremitting radiculopathy
- • Thoracic disk herniations (TDH): soft or hard (calcified)
- • Ossification of posterior longitudinal ligament (OPLL)
- • Tumor : primary or metastatic
- • Fracture
- • Deformity progression
- • Osteomyelitis: pyogenic, tuberculous
- . Pseudoarthrosis



TECHNICAL NOTE

- **LEVEL DETERMINATION**

- MRI WITH S1 VISUALIZATION
- CT SCAN FOR CALCIFICATION
- WHOLE SPINE X-RAY
- PREOP METHYLACRYLATE INJECTION
- MAKER

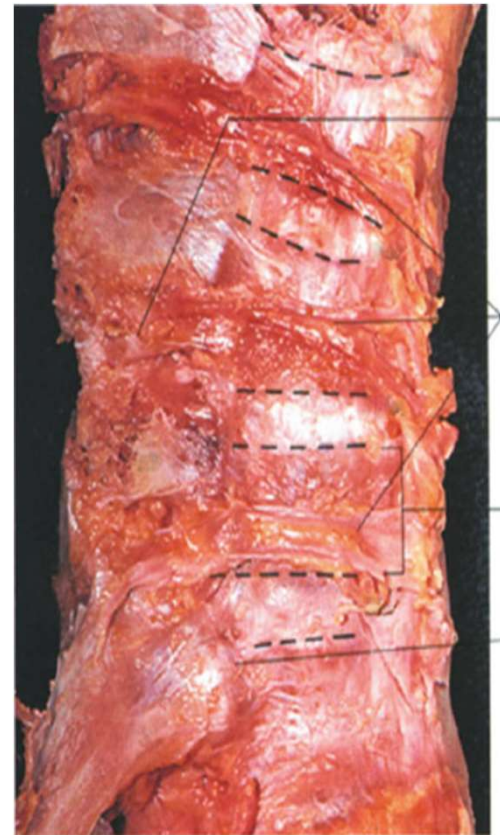
SIDE OF SURGERY

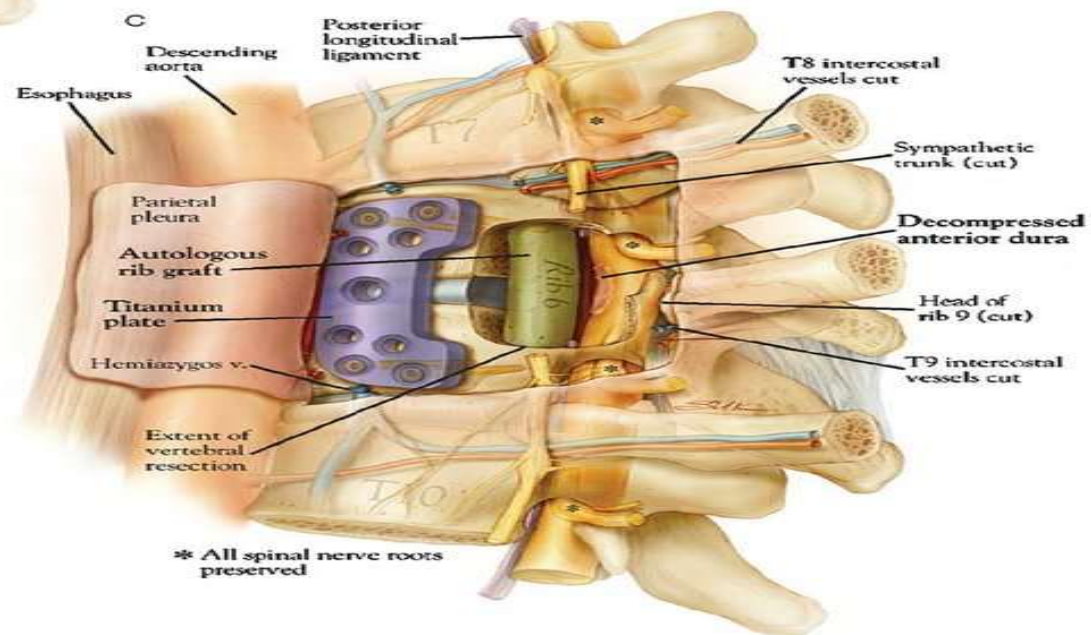
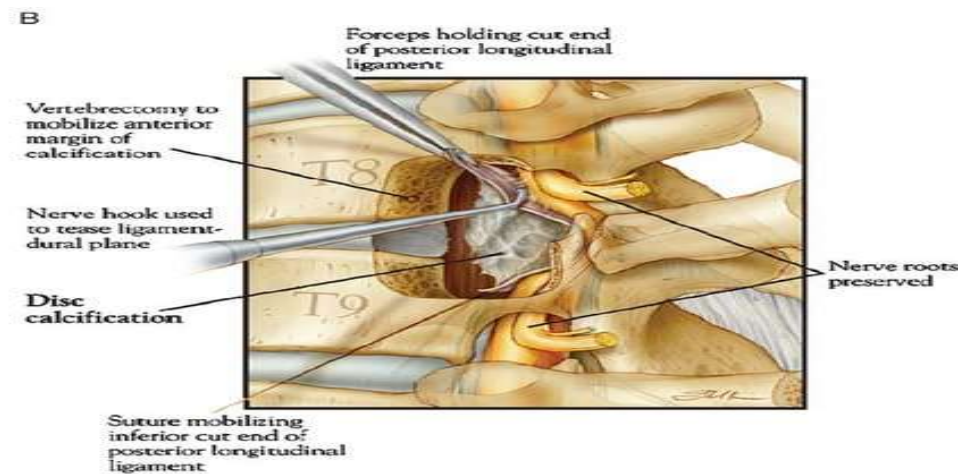
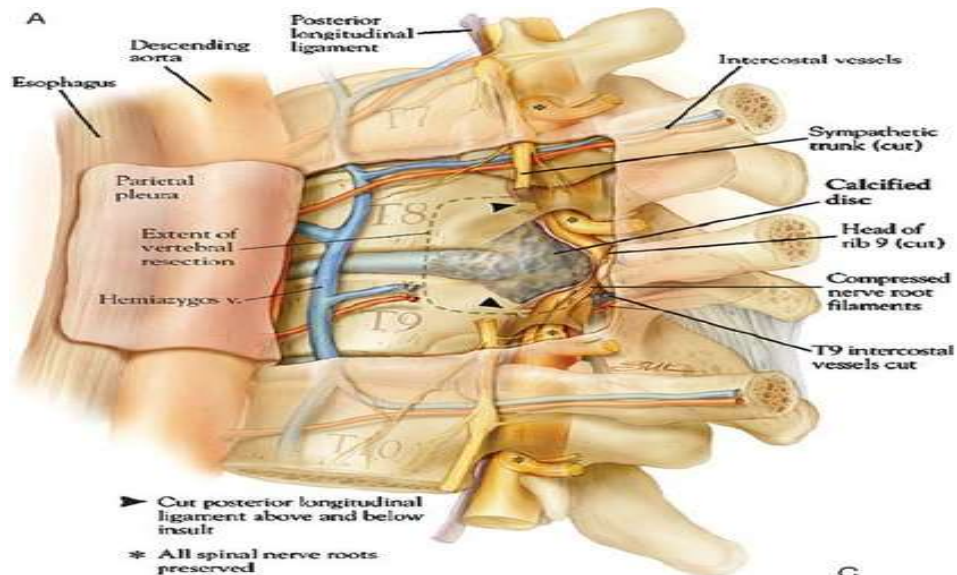
- The upper thoracic spine (T2 to T9) is best approached from **the right side** to avoid the heart and aortic arch. The thoracolumbar spine (T10 to L2) can be approached from the **left** to avoid liver retraction.
- The pathology side is more important
- INCISION T2-6 BELOW THE SCAPULA
 T6-9 ONE OR TWO RIB ABOVE
 T10 –L1 T10 RIB INCISION
 L1-L2 T11 RIB INCISION
 RETROPRITONEAL T12 RIB INCISION

TECHNICAL NOTE

DISK ACCESS

- LOWER PEDICLE MUST BE DRILLED FIRST
- UP TO T9 LOWER RIB IS OVER PEDICLE AND DISK SPACE
- FROM T10 COSTOVERTEBRAL JUNCTION IS BELOW DISK SPACE

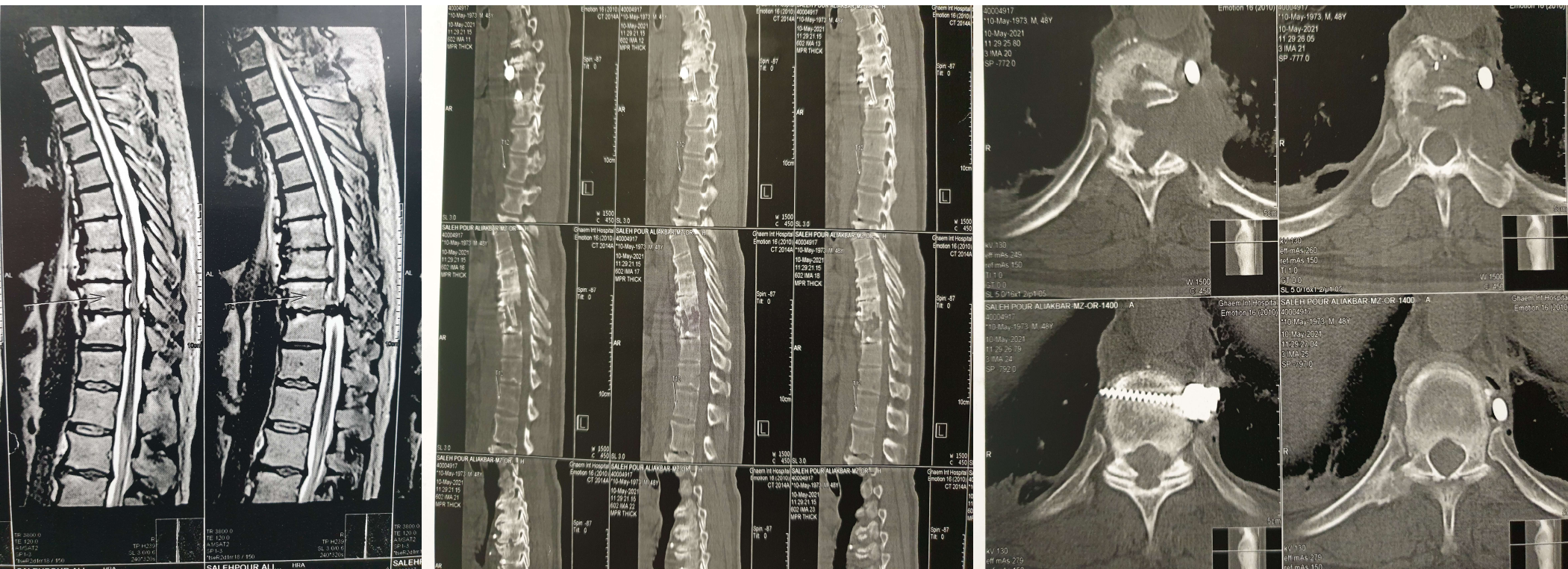


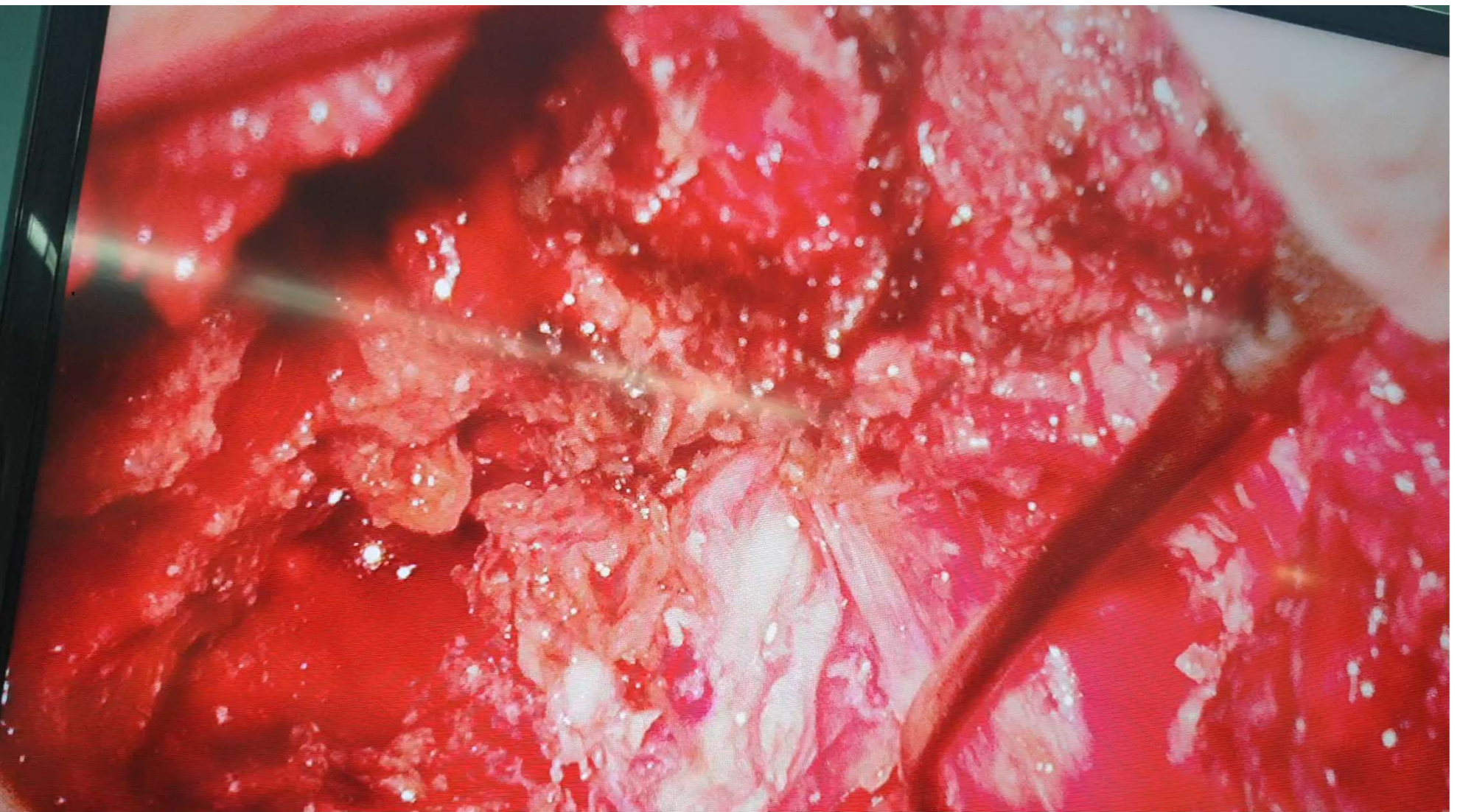


OUR EXPERIENCE

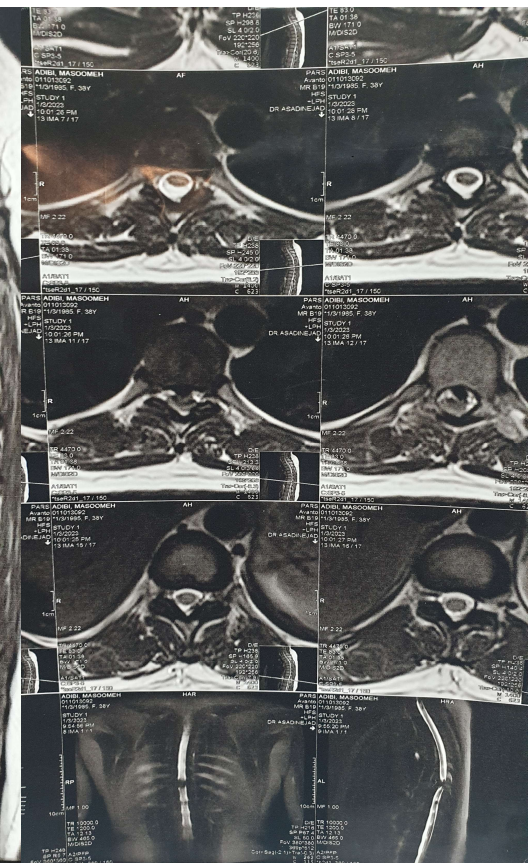
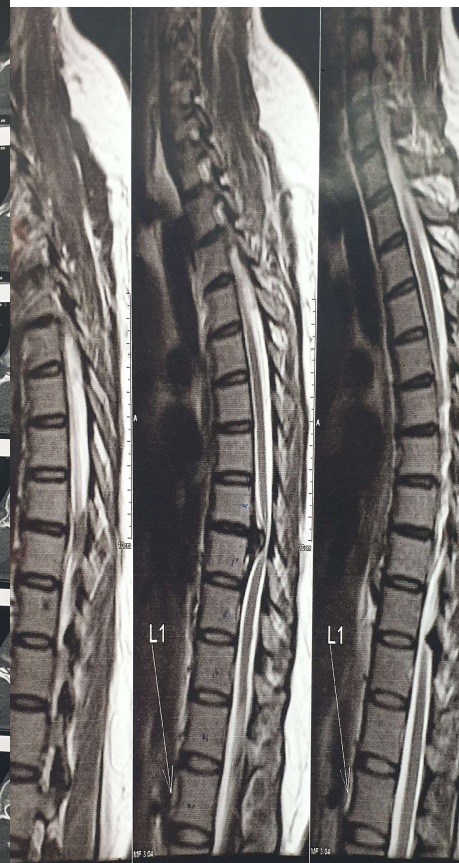
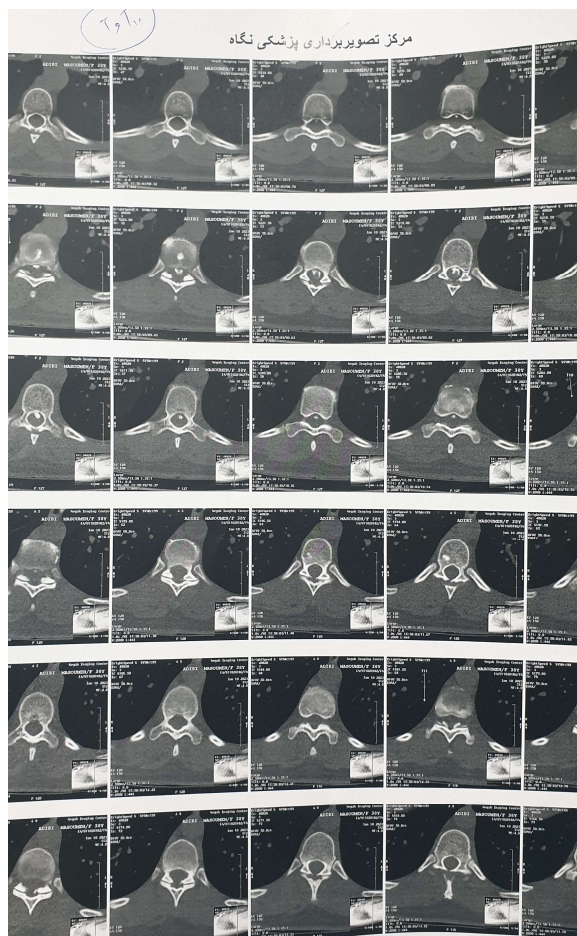
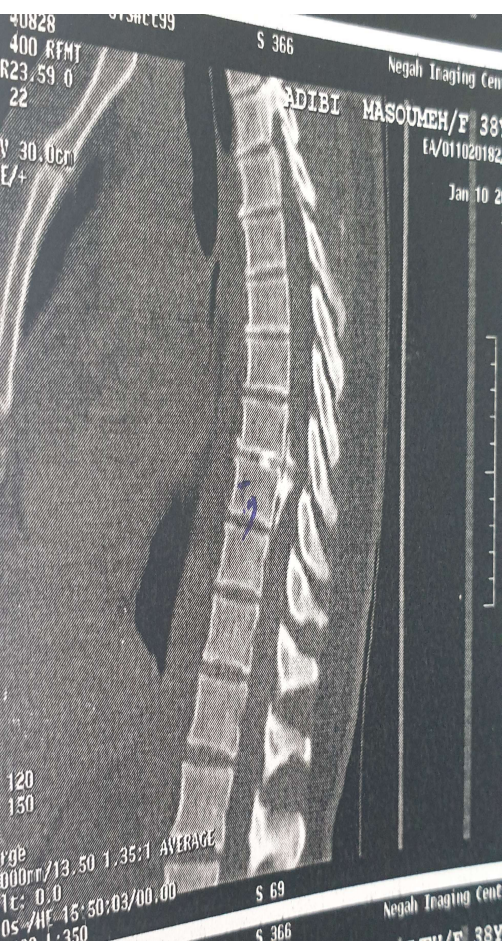
- 58 CASE ANTERIOR APPROACH
- 37 CASE FOR TDH AND OPLL
- 2 CASE TRANSIENT
MONOPARESIS
- 6 CASE DURATOMY WITHOUT
LEAKAGE (1 LONG TIME CSF
HYPOTENSION)
- NO INFECTION

38 year female sever paraparesis

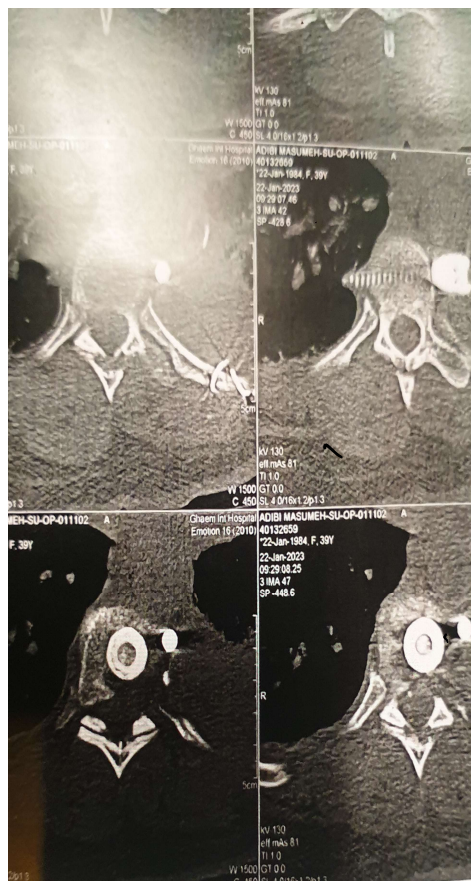




۳۶ years male with sever long tract signs



BONE SACRIFICATION



SO WHAT(ANTERIOR OR POSTERIOR)

- ANTERIOR APPROACH IS MORE SAFE NEUROLOGICALLY ESPECIAL IN THE PATIENT WITH NEUROLOGIC DEFICIT
- MIDLINE HARD LESION IS BETTER TO BE APPROACHED ANTERIORLY
- PRESENCE OF COMORBIDITY IS BETER FOR POSTERIOR APPROACH
- CONSIDER REGIONAL KYPHOTIC ANGLE
- PRESENCE OF OYL OR OPPL



DON'T BE RIGID

**THANK YOU FOR
YOUR ATTENTION**