

# Clinical Presentation of Low Back Pain In Orthopaedic Practice



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## What is LBP ?

- ❑ Pain and discomfort between the costal margin and inferior gluteal folds with or without leg pain



- ❑ symptom rather than a disorder
- ❑ may be the dominant symptom of a variety of different medical conditions

# MAGNITUDE OF THE PROBLEM

- **2<sup>nd</sup>** only to the **common cold** as a cause for adults seeking medical advice
- **2<sup>nd</sup>** only to **headache** as a frequent source of pain
- **80%** of population will experience LBP at some time in their lives

# COST

- the **leading cause** of occupational disability worldwide

**Spinal** { **Mechanical pain 97 %**  
**Pathological pain 1%**

**Extra-spinal pain 2%**

## Mechanical pain 97 %

	Lumbar strain	70%
	Degeneration /age related	10%
	Herniated disk	4%
	Spinal stenosis	3%
	OVCF	
	Traumatic fracture	
	Spondylolisthesis Congenital disease others	

# Pathological pain 1%

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	Neoplasia Multiple myeloma Metastatic carcinoma Lymphoma and Leukemia	0.7%
	Infection Osteomyelitis Septic diskitis Paraspinous abscess	
	Inflammatory arthritis Ankylosing spondylitis Psoriatic arthritis Reiter syndrome	
	Osteochondrosis	
	Paget disease of bone	

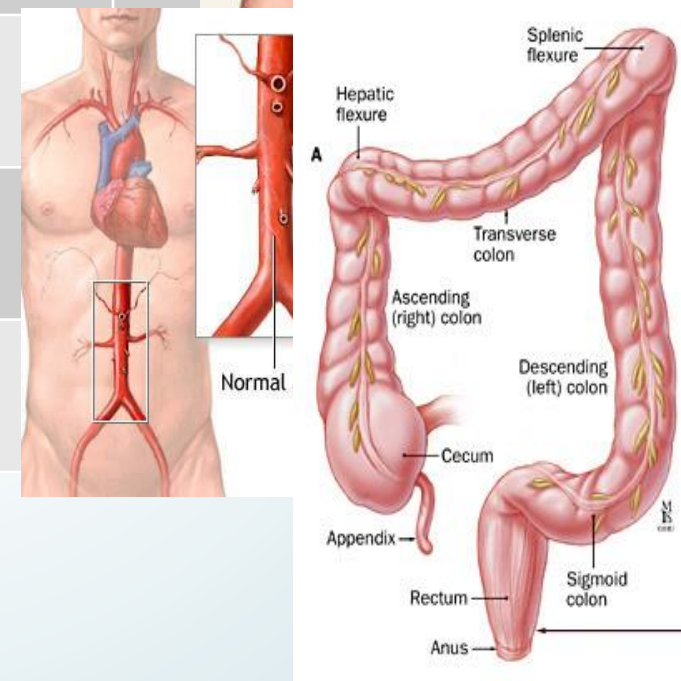
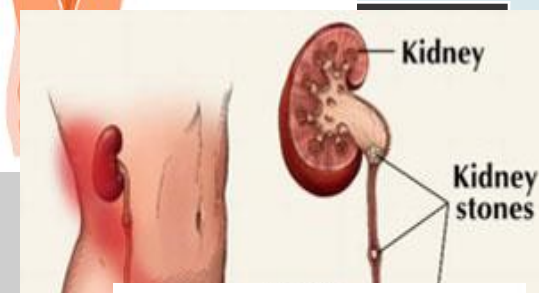
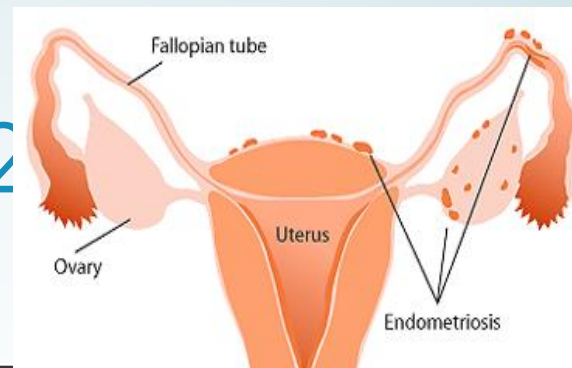
Saleh Fawzi Al-Hattab

11/3/2020



# Extra-spinal pain 2

	Disease of pelvic Organs
	Renal diseases
	Abdominal Aortic Aneurysm
	Gastrointestinal diseases



# HOW TO APPROACH THE PATIENT WITH LOWBACK PAIN ?

- History
- Physical examination
- Provocative tests
- Investigations
- Imaging

# Differential diagnosis of low back pain

- **Mechanical pain ?**
- **Pathological pain ?**
  
- **Back pain ?**
- **Back pain +/- leg pain ?**
  
- **Extraspinal cause ?**
  
- **Local cause or systemic ?**

## Case-1

- ▶ 20 years old young man
- ▶ **Back pain** after playing sport
- ▶ Without warming up
- ▶ Pain on movement , standing , getting up from bed
- ▶ Can walk with discomfort in back
- ▶ No night pain
- ▶ **No leg pain**

## Case 2

- **30** year old man
- **back**, buttock, or **posterior leg pain**
- Cramps , burning pain in legs
- **Coughing and sneezing aggravates the symptoms**
- Lying flat helps
- Walking down hill is easier
- **SLR**  $<60^\circ$

## Case 3

- **65** year old man
- **back**, buttock, or **posterior leg pain**
- Cramps , burning pain in legs
- Poor walking distance
- **extension aggravates the symptoms**
- Leaning on a cart helps
- Can walk up hill
- **SLR** not significant

# History

## ► Age

► <20

► 20-50

► >50

## ► Sex

► Male

► Female

## ► Occupation

Infection

PID

Spinal stenosis, Metastasis, Osteoporosis, Infection

Ankylosing spondylitis

Rheumatoid Arthritis, Osteoporosis

# PMH/PSH/PH

- ▶ DM
- ▶ Immune deficiency disorders
- ▶ Iatrogenic immunocompromised patients
- ▶ IVDU
- ▶ Recent infection
- ▶ Prior surgical procedures (urosurgery)
- ▶ Smoking

# Physical examination

- ▶ General examination
  - ▶ Fever, tachycardia, blood pressure
  - ▶ General lymphadenopathy
  - ▶ Masses in abdomen, rectum, pelvis

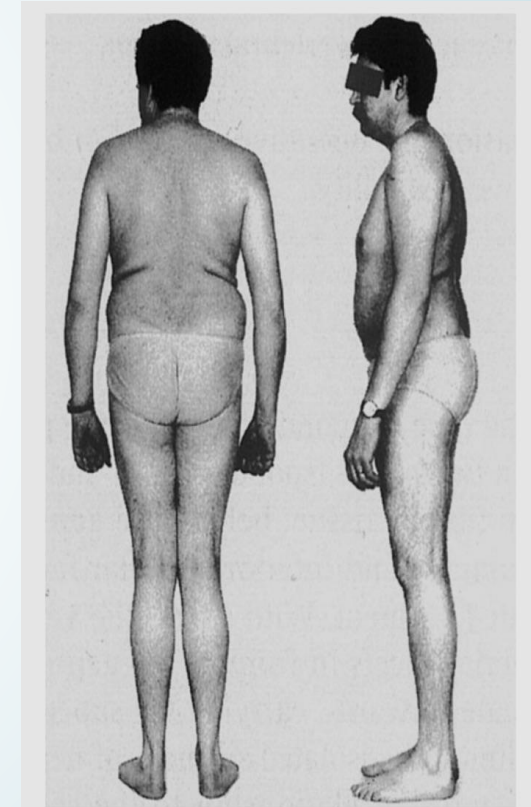


# LOOK/FEEL



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- ▶ List or Tilt
- ▶ Deformity
- ▶ Scar
- ▶ Loin Crease
- ▶ Spasm



**18.35 Spondylolisthesis – clinical appearance** The transverse loin creases, forwards tilting of the pelvis and flattening of the lumbar spine are characteristic.

- Spine examination
  - Mechanical spine pain
  - Saggital and coronal alignment
  - ROM
- **forward lumbar flexion**
  - Increased pain in
    - Disk pathology
  - Relieved of back and leg pain
    - Spinal stenosis



# Examination on Patient lying

- ▶ SLR
- ▶ Cross leg pain
- ▶ SI joint
- ▶ Hip , knee joints
  
- ▶ Neurologic assessment (spinal nerve roots)
  - ▶ Sensory
  - ▶ Motor
  - ▶ Reflexes



(a)



(b)



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## Case 2

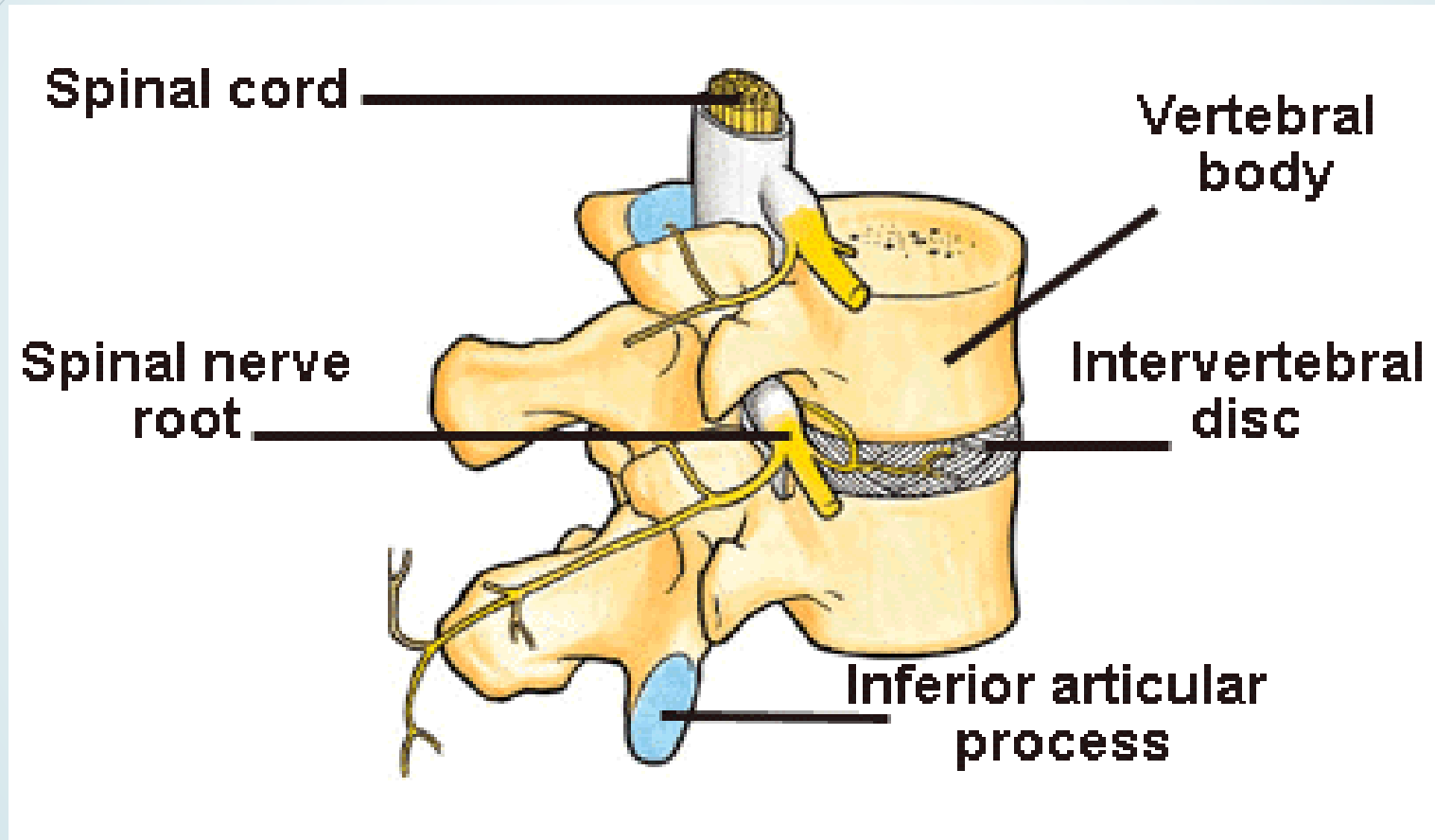
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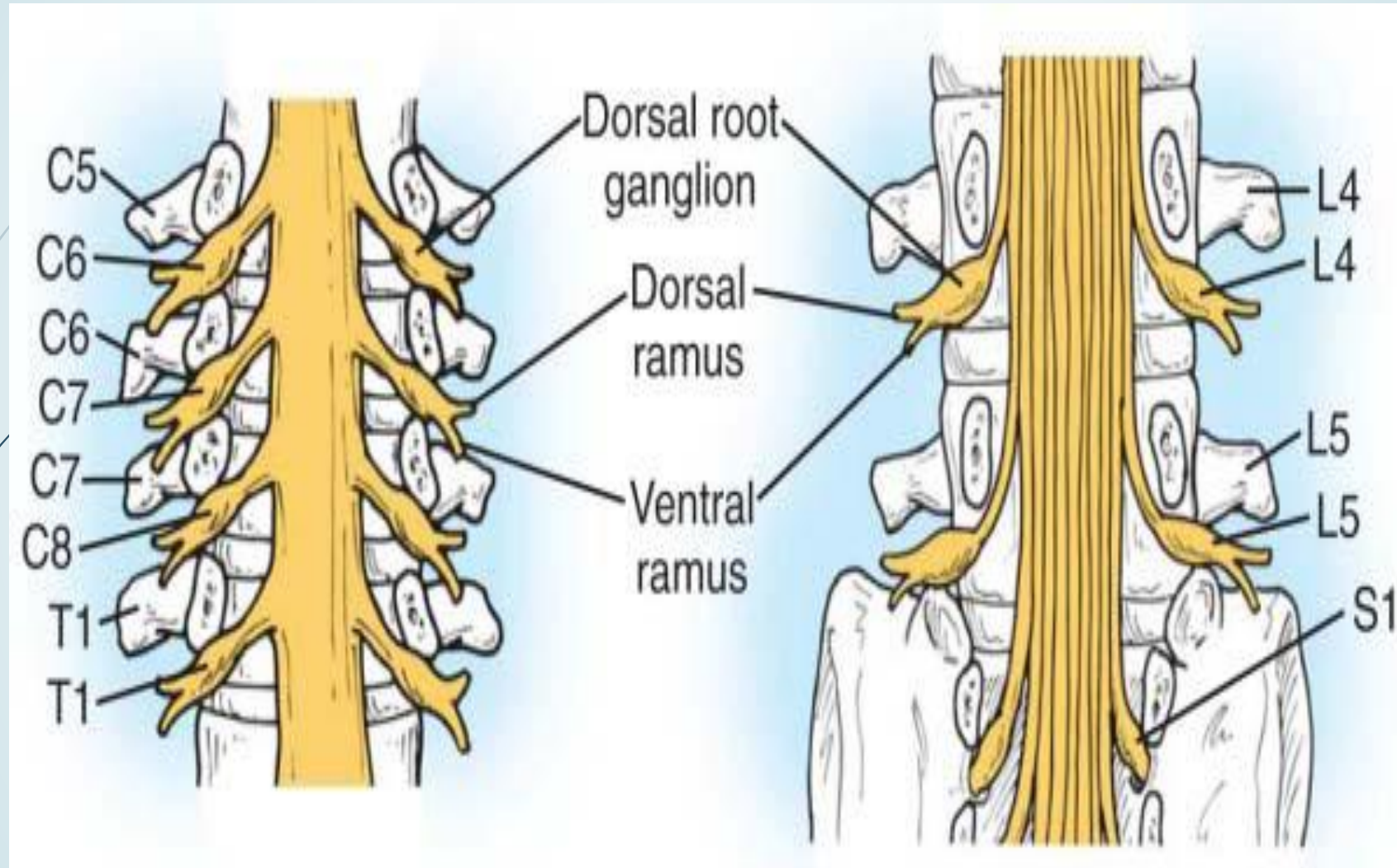
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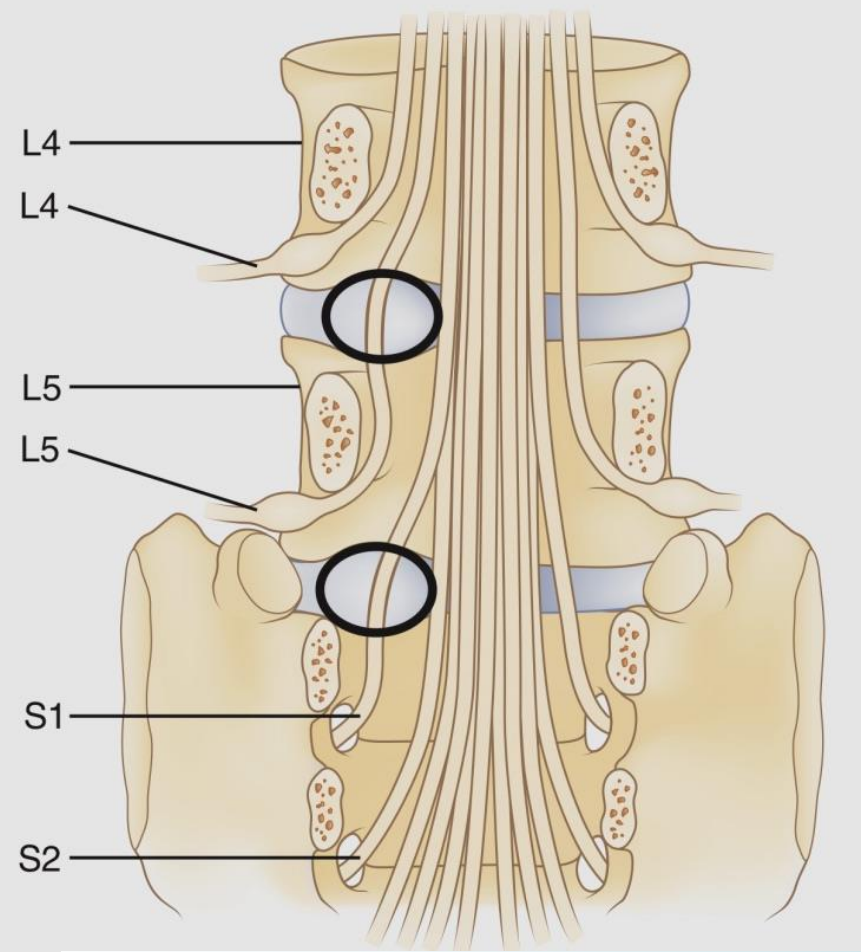
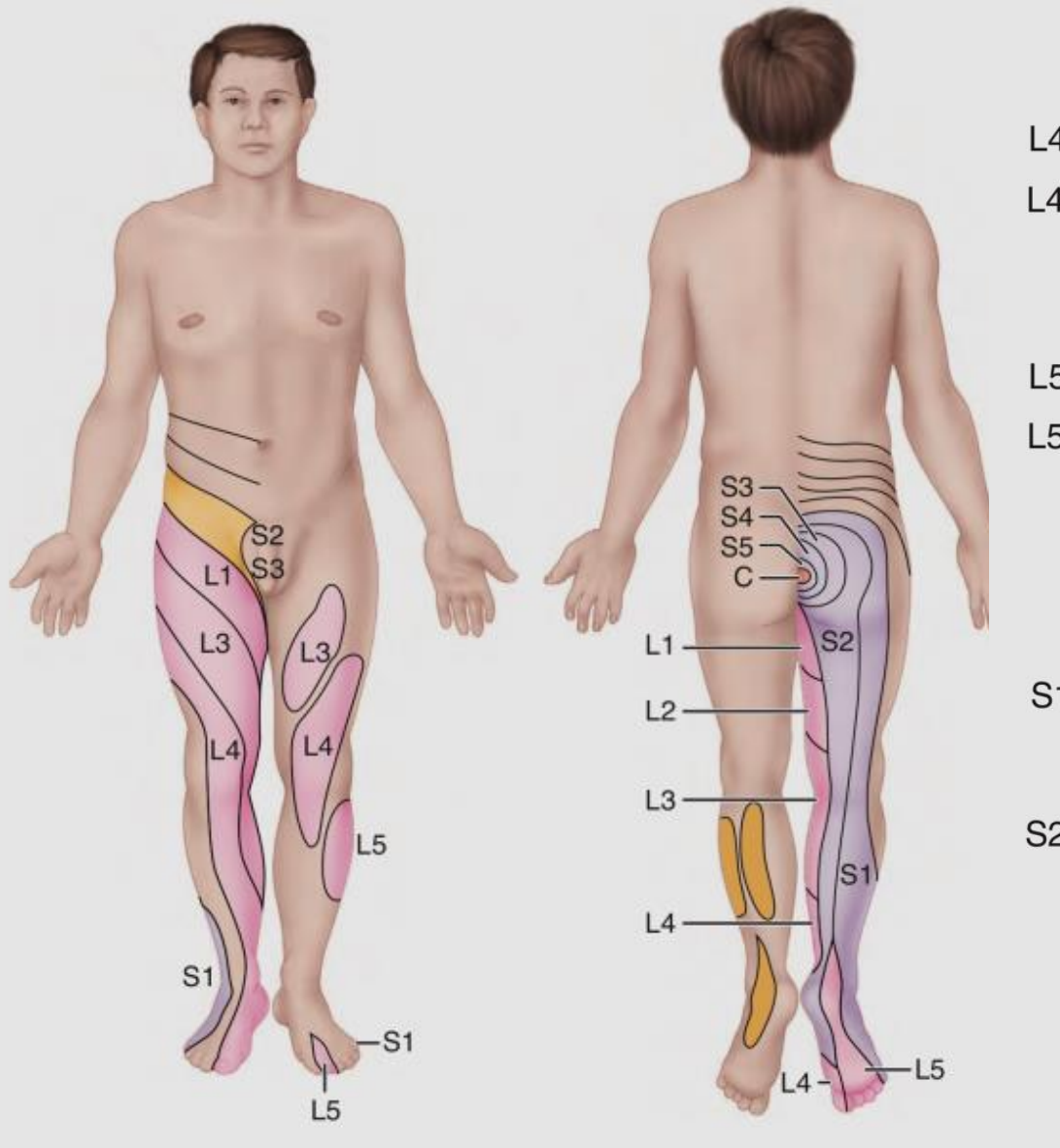
# Gross Anatomy

## Relation of cord , root ,body and disc



**Discs are named for vertebral level immediately cephalad. Pathology most commonly affects nerve root one segment caudal.**

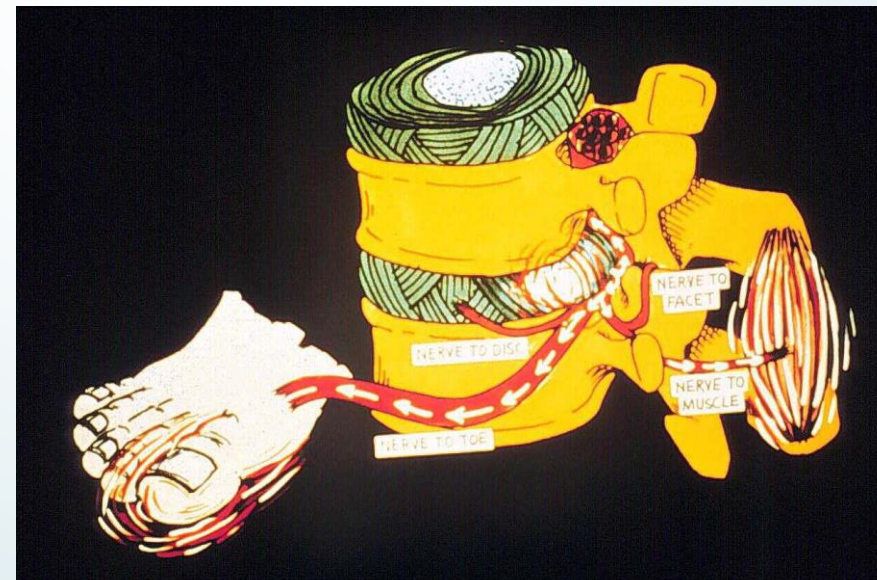
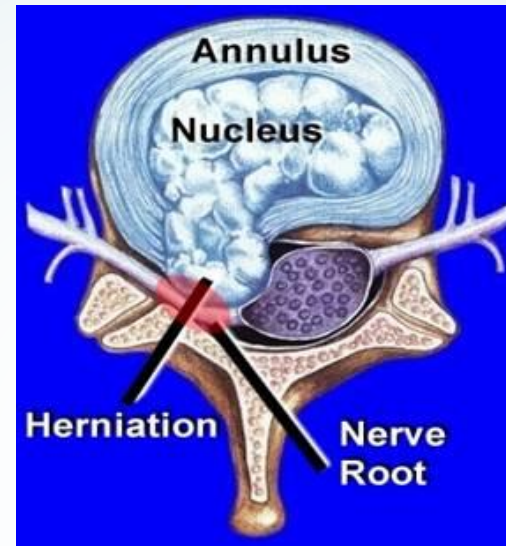
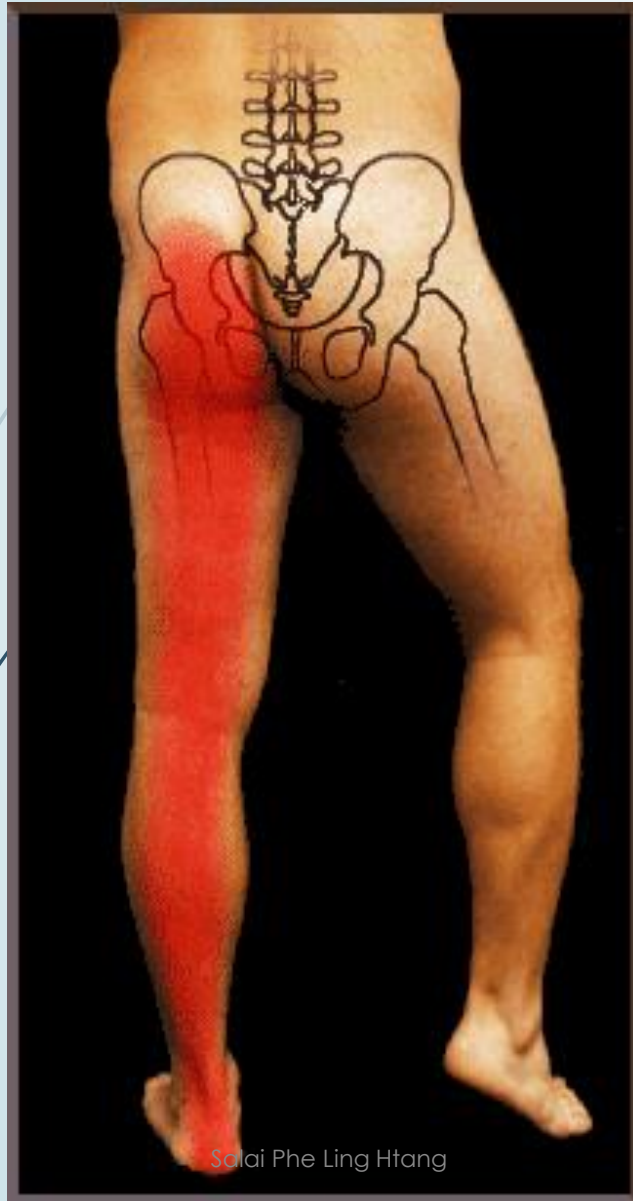






# Sciatica and Prolapsed Intervertebral Disc

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**BOX 42-10 L5 Root Compression\*****Sensory Deficit**

Anterolateral leg, dorsum of the foot, and great toe

**Motor Weakness**

Extensor hallucis longus

Gluteus medius

Extensor digitorum longus and brevis

**Reflex Change**

Usually none

Posterior tibial (difficult to elicit)

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\*Indicative of L4-5 disc herniation or pathological condition localized to L5 foramen.

**Sensory Deficit**

Lateral malleolus, lateral foot, heel, and web of fourth and fifth toes

**Motor Weakness**

Peroneus longus and brevis

Gastrocnemius-soleus complex

Gluteus maximus

**Reflex Change**

Achilles tendon (gastrocnemius-soleus complex)

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\*Indicative of L5-S1 disc herniation or pathological condition localized to the S1 foramen.

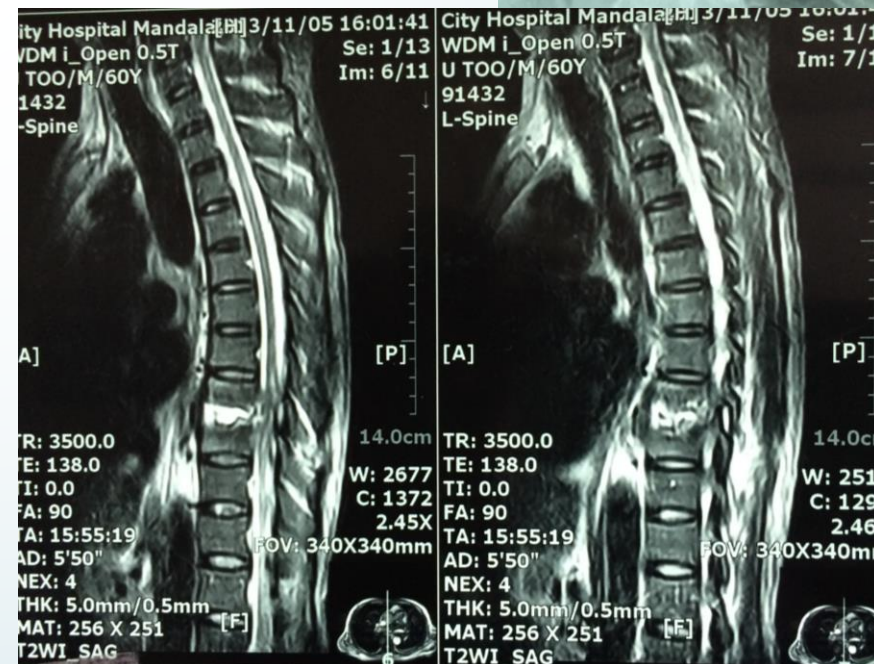
## Case 4

- 70 year old lady
- Fall in sitting position
- Pain in back and the whole abdomen
- Can not sit and stand
- Pain reduce on lying
- No neurological deficit



## Case 5

- 40 yr old lady
- **Progressive back pain** for 2 months
- Unable to sit and stand
- **Pain not reduced by lying**
- **Underlying Diabetes**
- Night sweating



# Do all the patients need Radiography?

# PLAIN RADIOGRAPHY

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## Selective Indications for Radiograph

- ▶ Age > 50 yr
- ▶ Significant trauma
- ▶ Neuromuscular deficits
- ▶ Unexplained weight loss (10 lb in 6 month)
- ▶ Suspicion of Ankylosing Spondylitis
- ▶ Drug or alcohol abuse

# PLAIN RADIOGRAPHY

## Selective Indications for Radiograph

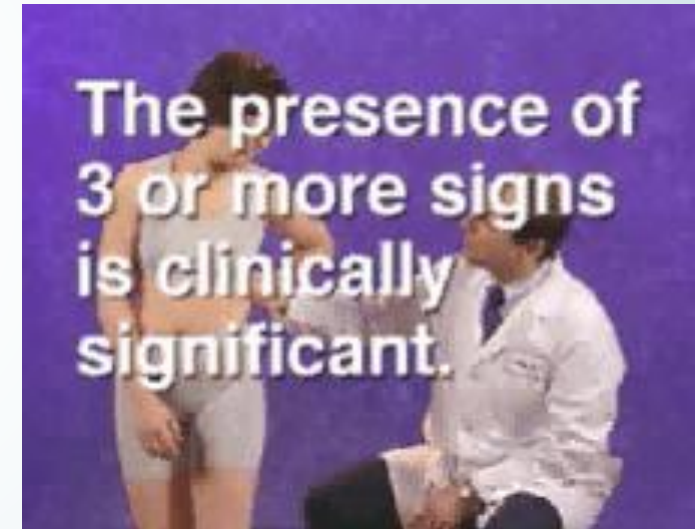
- ▶ History of cancer
- ▶ Use of corticosteroids
- ▶ Temperature  $\geq 37.8^{\circ}$  F
- ▶ **Recent visit (within 1 mo) for same problem and no improvement**
- ▶ Patient seeking compensation for back pain



# Malingering \$

## Waddell's eight physical signs

- ▶ Superficial tenderness
- ▶ Non-anatomic tenderness
- ▶ Axial loading
- ▶ Simulated rotation
- ▶ Distraction straight leg raise
- ▶ Regional weakness
- ▶ Regional sensory change
- ▶ Over reaction to examination



# Differential diagnosis of back pain

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- **Pathological pain ?**
  
- **Back pain ?**
- **Back pain +/- leg pain ?**
  
- **Extraspinal cause ?**
  
- **Local cause or systemic ?**

# Common problems

## ► Lumbar Strain

young patient, after playing or lifting objects

## ► PID

Radiating leg pain, Classic nerve root compression

## ► Spinal stenosis

Old patient, neurological claudication

## ► Osteoporotic fracture

Old patient, mild trauma, persistent pain

## ► Spondylolisthesis

Sense of instability in change in position

➤ **Infection**

DM, Immunodeficient conditions, IVDU

➤ **Malignancy**

Unremitting pain, Family H/O

➤ **Inflammatory arthropathy**

Young patient, morning stiffness, improved by exercise

## Case 6

- ▶ 30 yr old gentle man
- ▶ Severe low **back pain** and both **leg pains**
- ▶ Pain on movement and **relieved by rest**
- ▶ **Numbness** around the perineum and difficulty in micturition
- ▶ No constitutional symptoms
- ▶ **Cross leg pain**
- ▶ X rays show NAD

# Cauda Equina Syndrome

Bladder and bowel incontinence

Perineal numbness

Bilateral sciatica

Lower limb weakness

Crossed straight-leg raising sign

# Orthopaedic Emergency

# INDICATION FOR SURGERY

## N

- Impairment of bowel or bladder function
- Gross motor weakness
- Evidence of increasing impairment of nerve root conduction

## P

- Severe sciatic pain persisting or increasing despite 4 to 6 weeks of treatment
- Recurrent incapacitating episodes of sciatic pain

# Goal of surgery

principal goal of surgical intervention

- to relieve neural compression and the consequent radiculopathy, with minimal complications



# Medical treatment

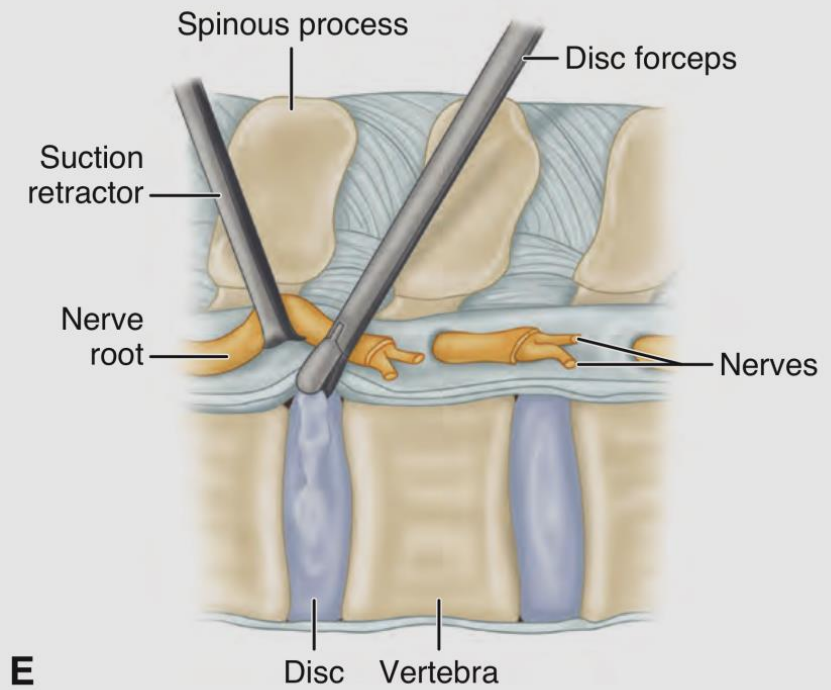
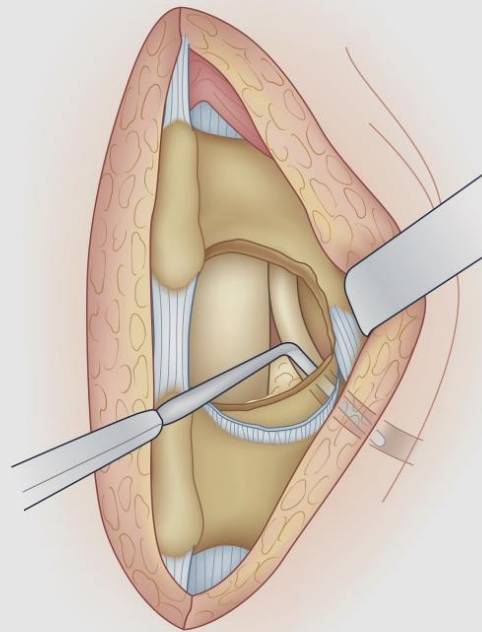
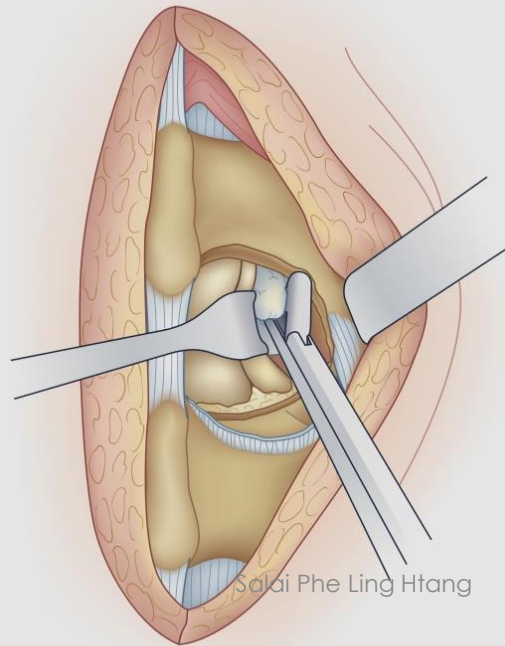
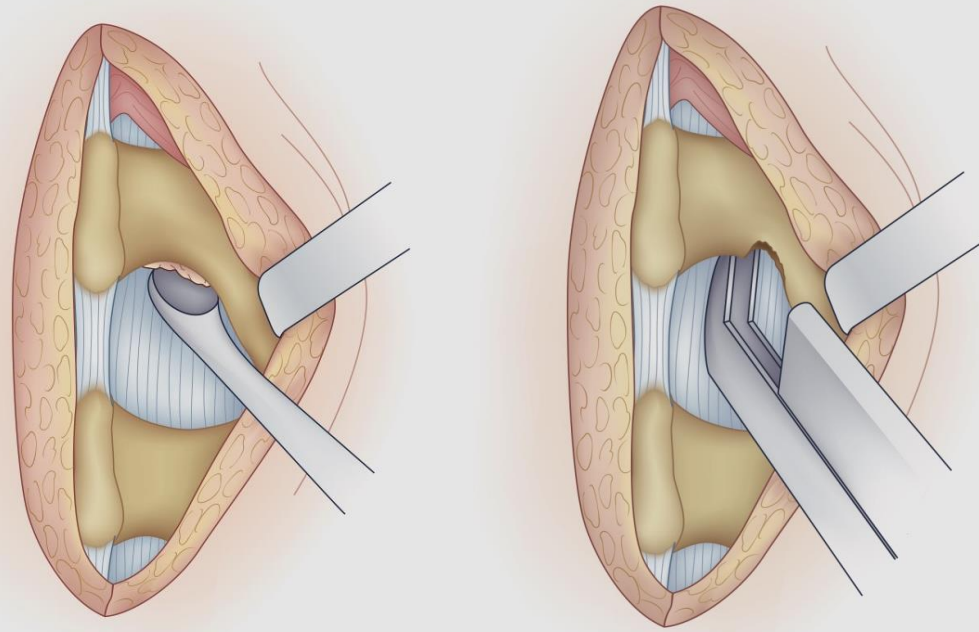
## ➤ NSAID

- Muscle relaxants
- Trigger point injections
- Epidural steroid injections
- Bed rest and activity advices
- Physical therapy modalities

# Surgical Management at a glance

- Discectomy
- Decompression
- Foraminotomy
- Fusion surgeries
- Open surgeries
- MIS surgeries

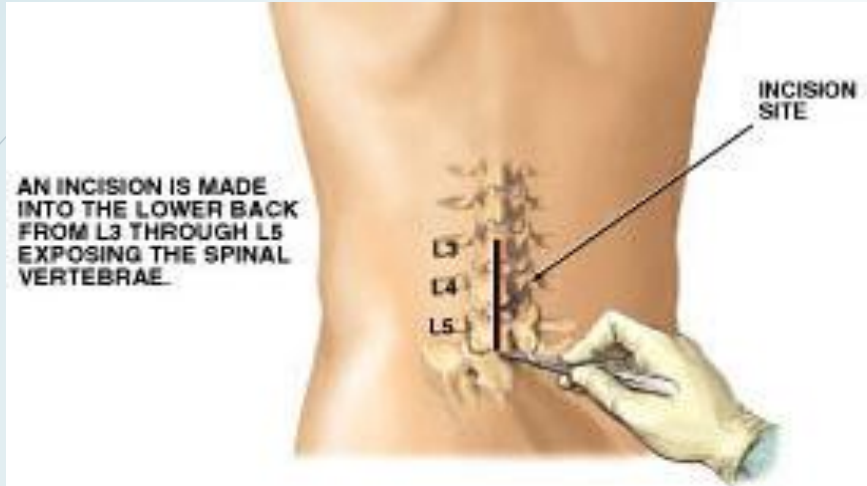
# Discectomy



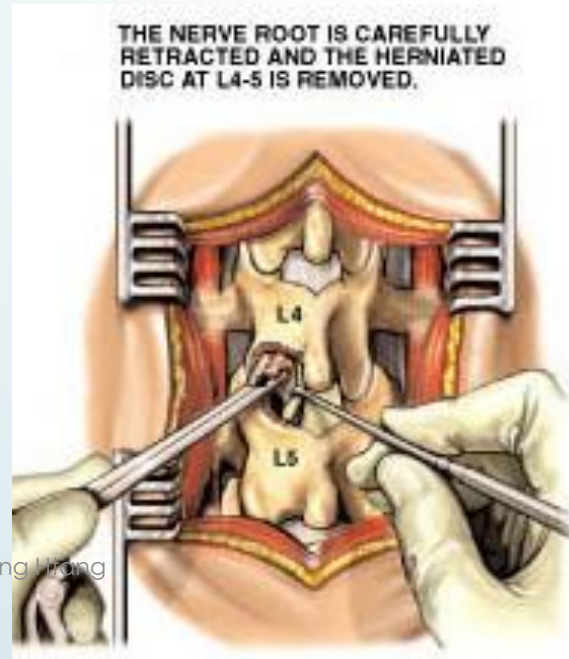
# Open Discectomy

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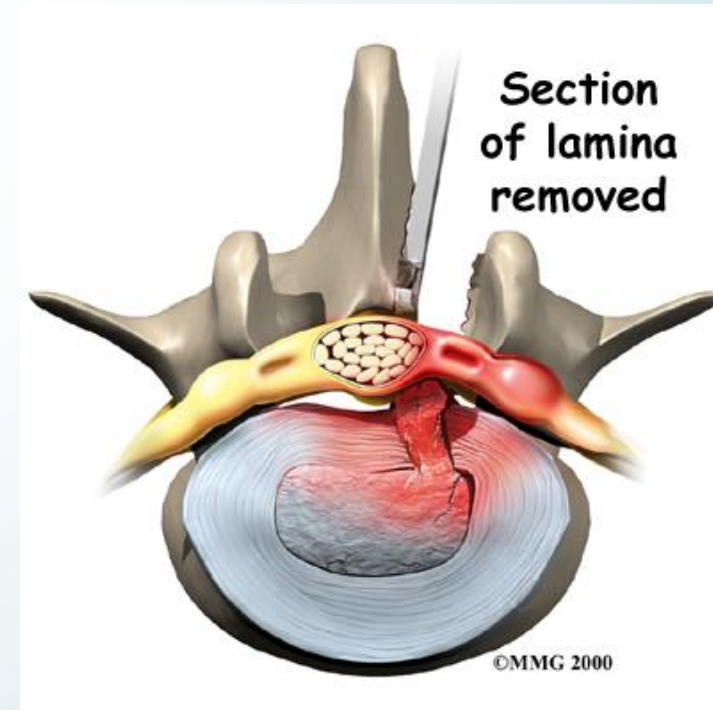
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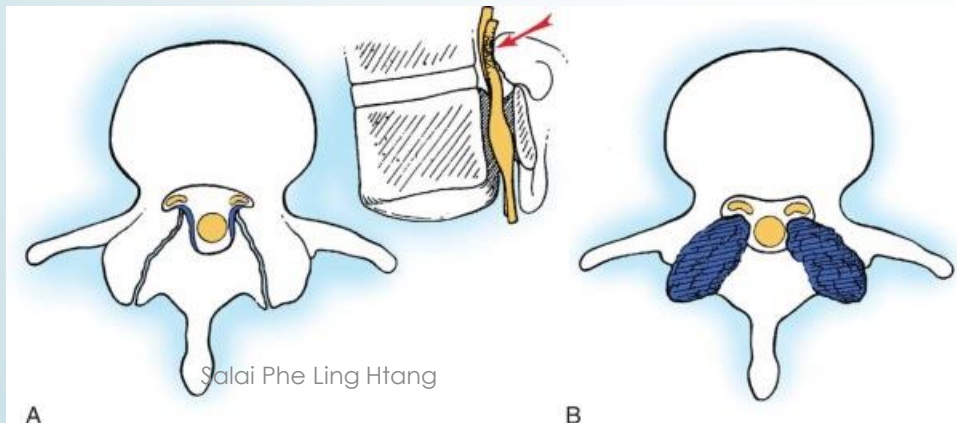
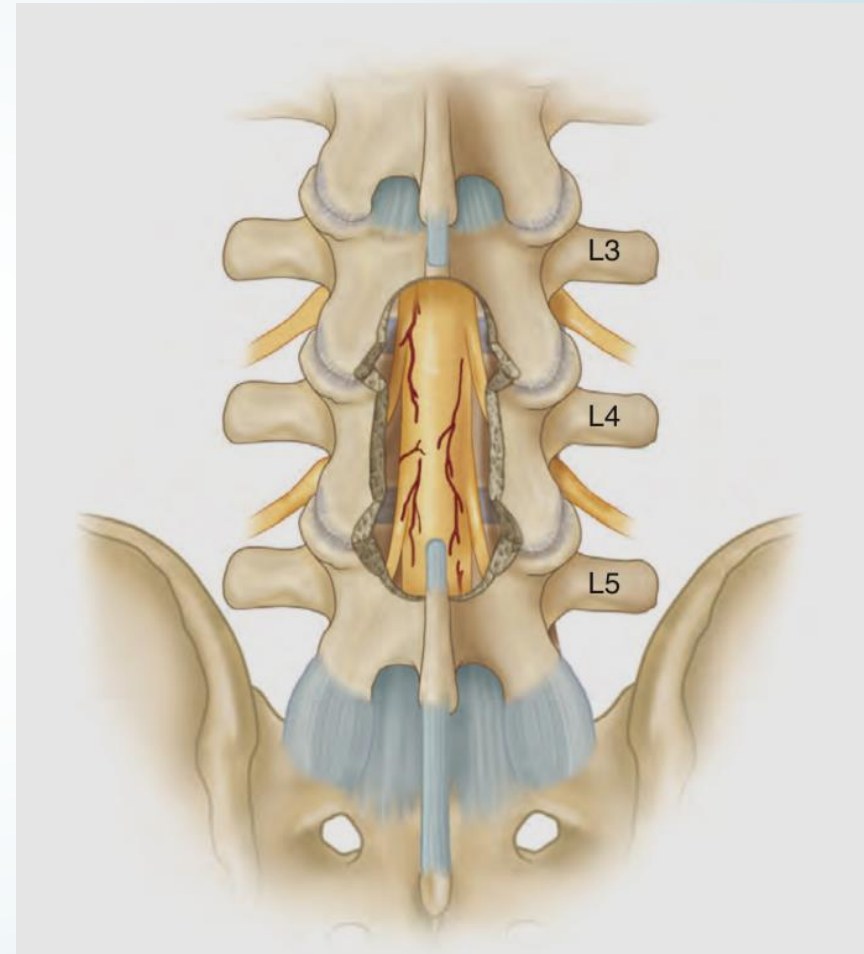
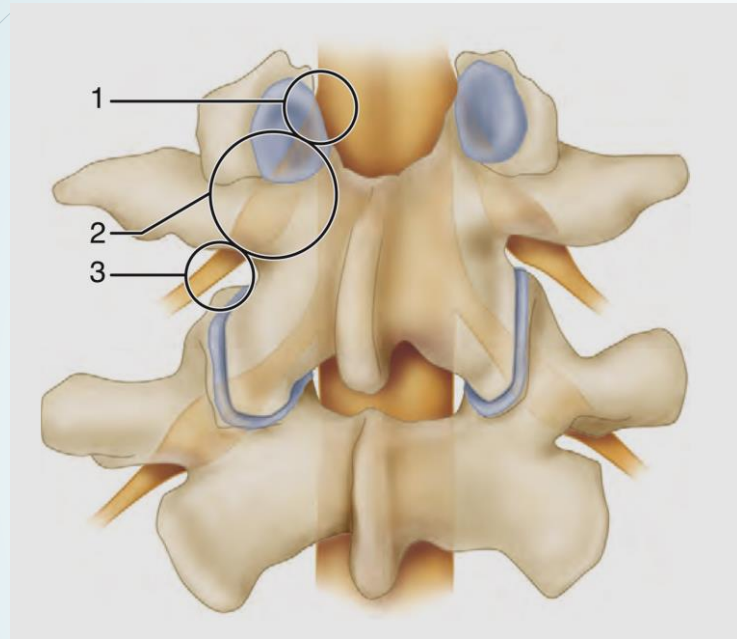


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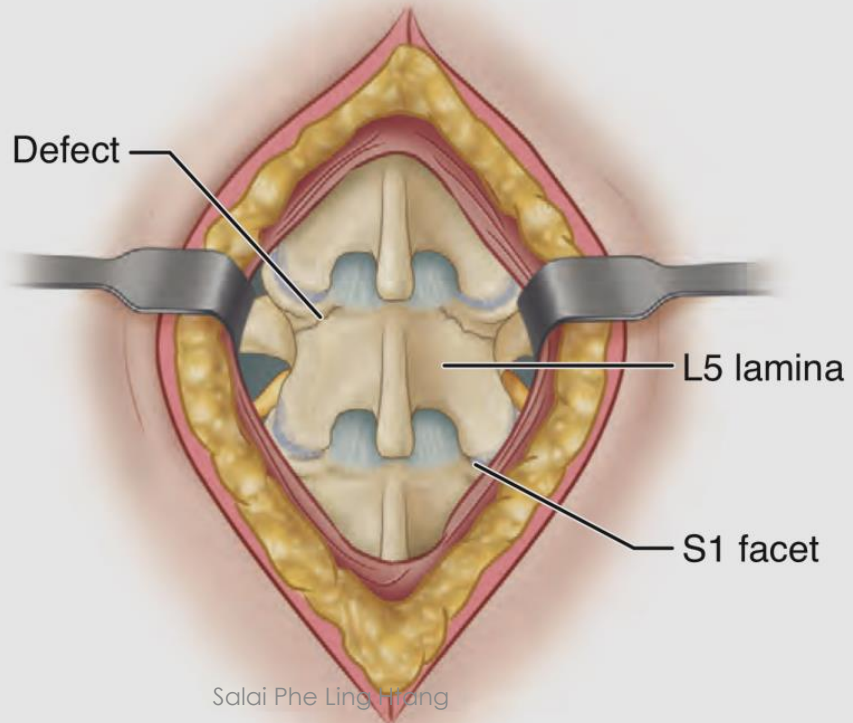
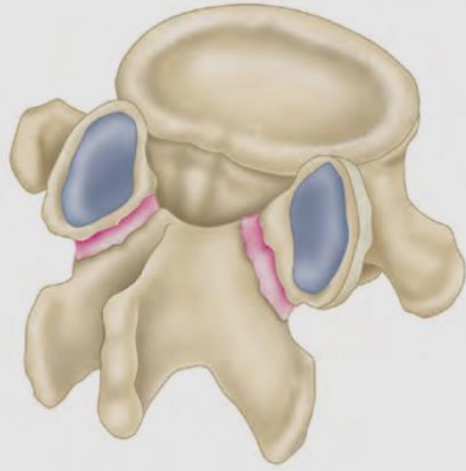


# Decompression for spinal stenosis

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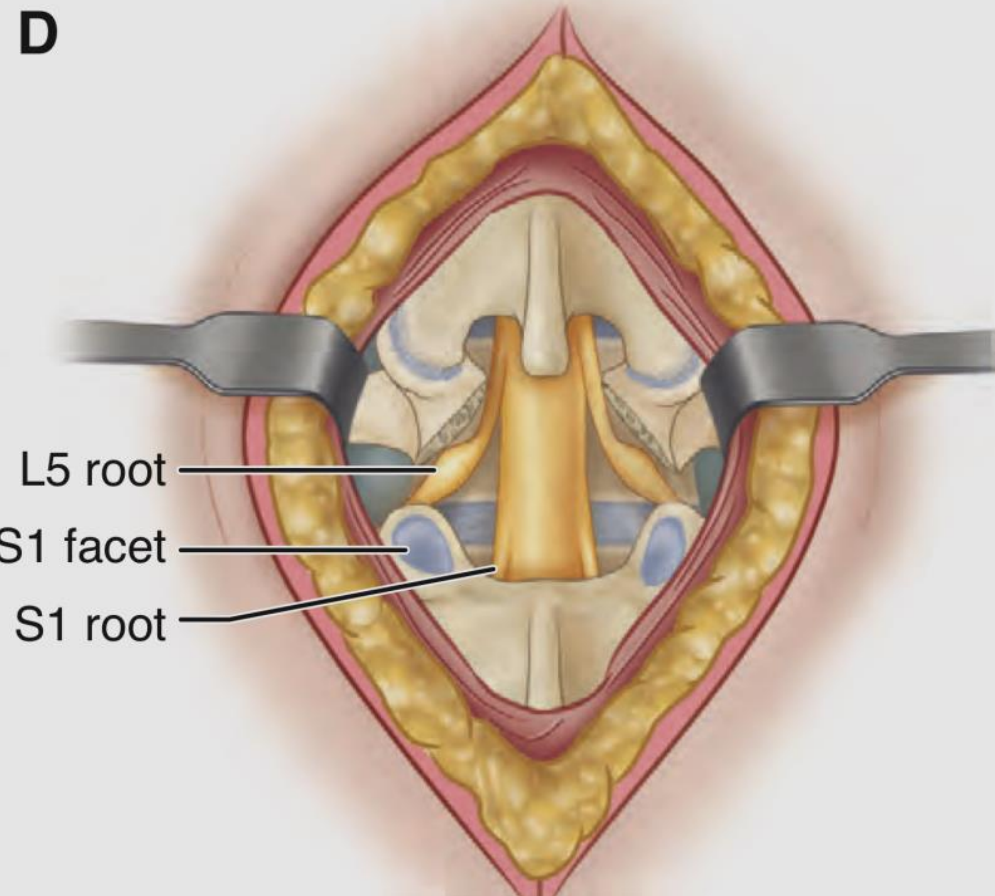


# Spondylolisthesis

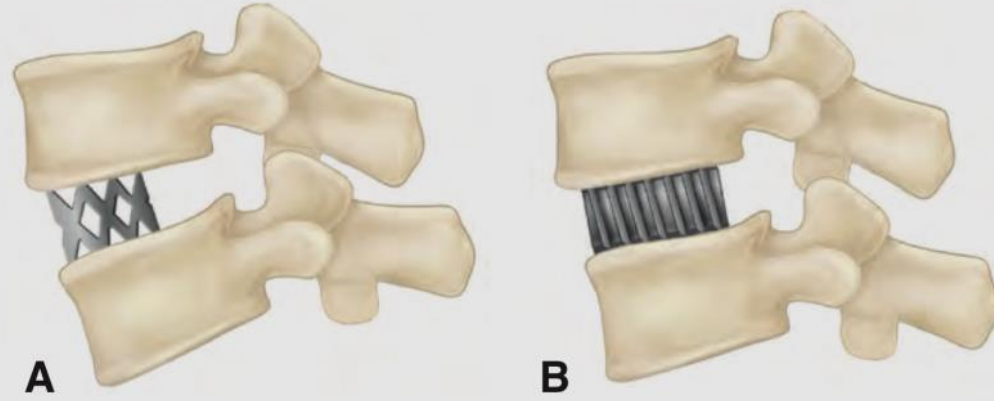


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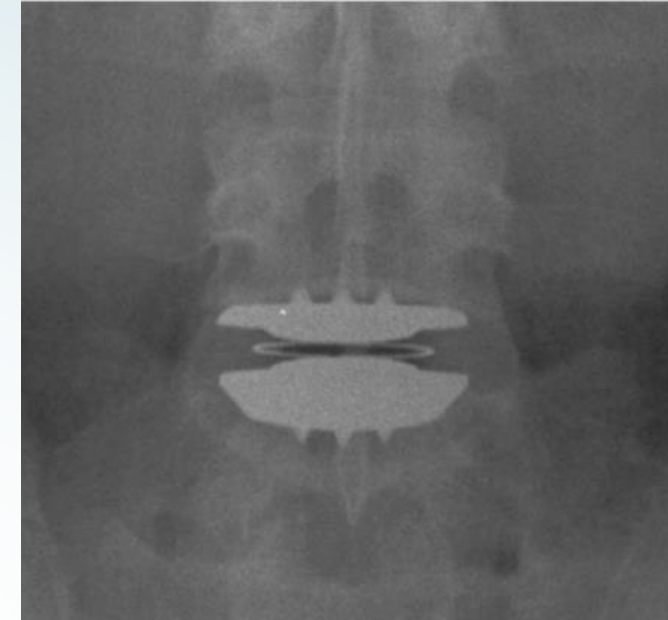
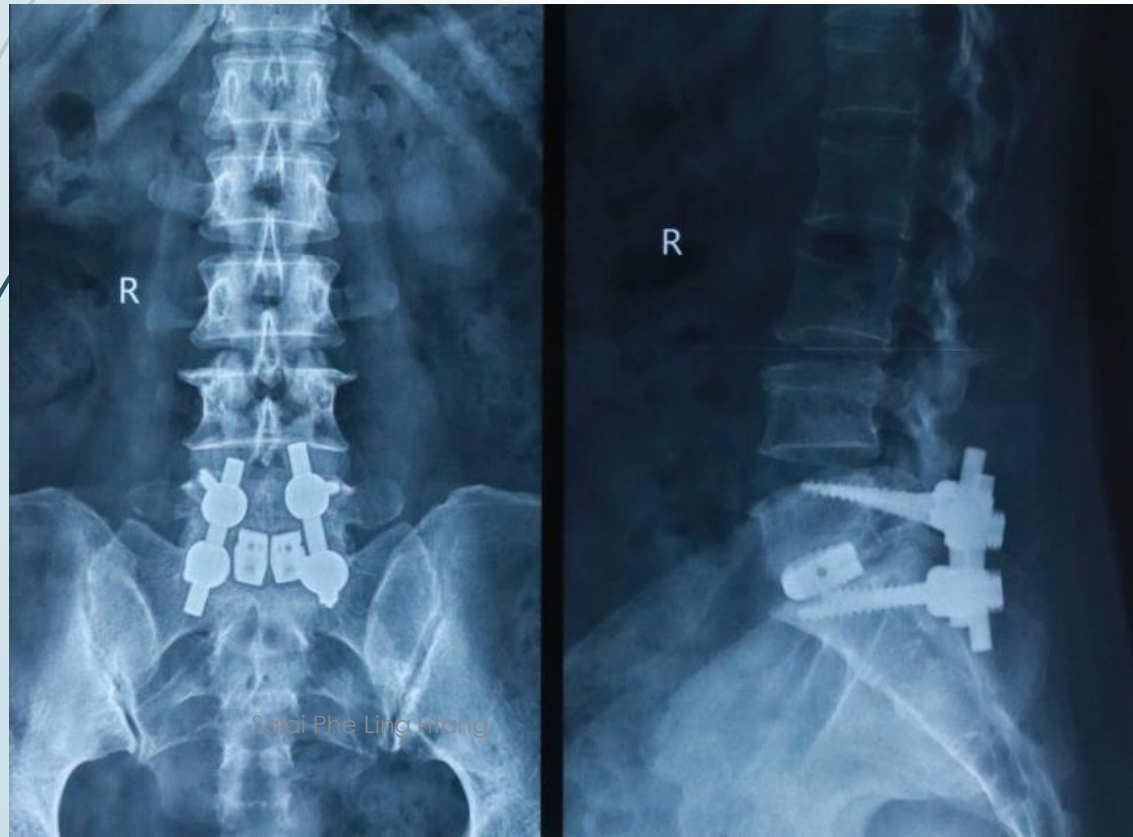
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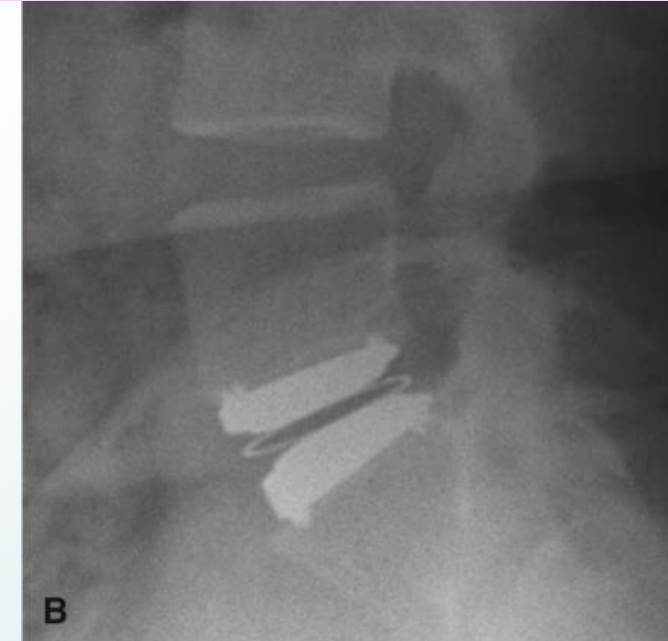
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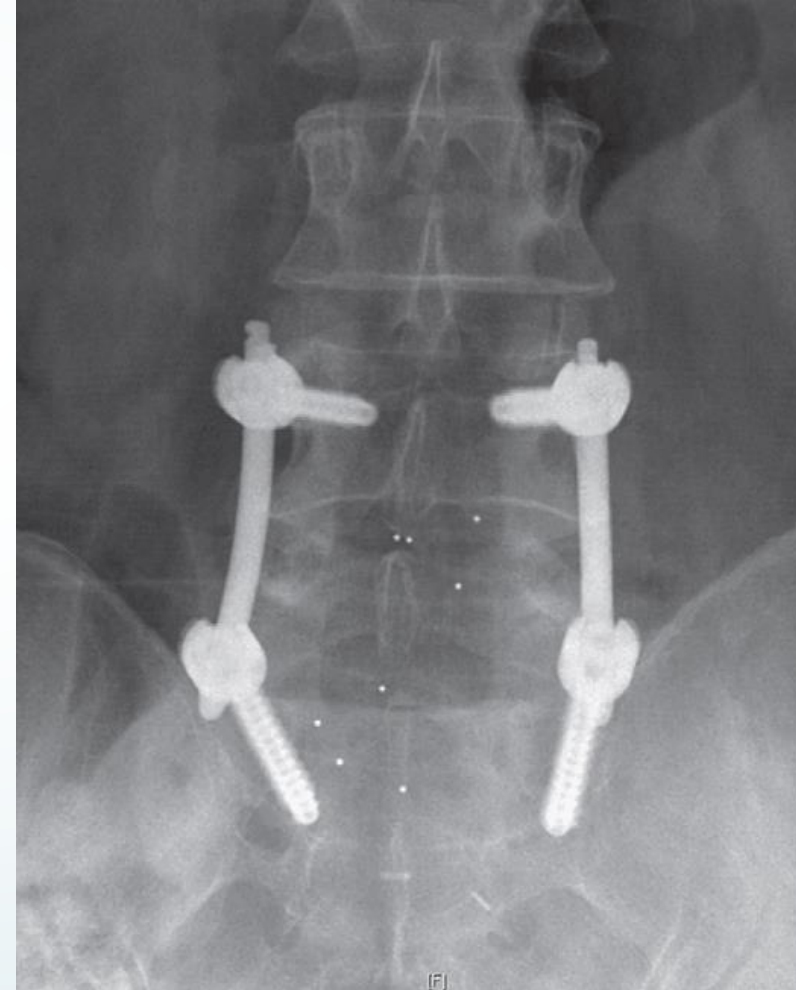
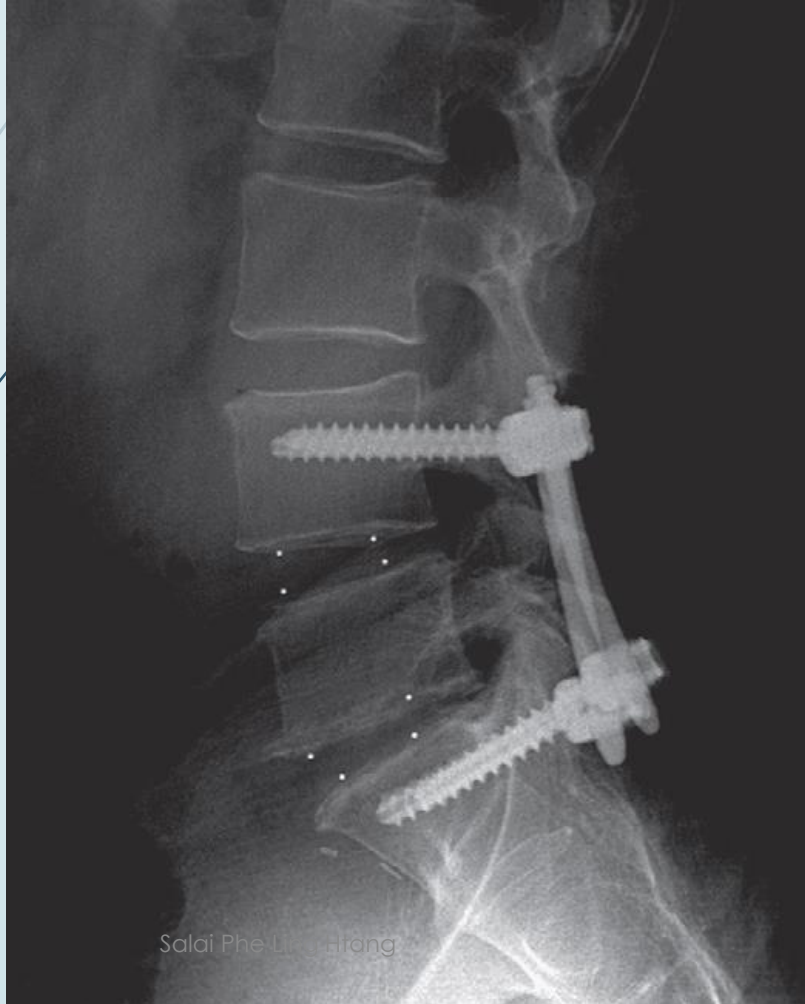
**Fusion surgery**



**Total Disc Replacement**



# Interbody fusion





## Take home message

- ▶ **\*80%\*** of cases can be managed from general practitioners
- ▶ First contact physician should identify **serious causes** or **complicated causes** and refer appropriately

**thank you  
For your attention  
In Covid Era**

