Low Back pain
The flag system
Surgical advances

Mr. Shaishav Bhagat

Consultant Spinal Surgeon

ESNEFT

Oaks Hospital, Colchester

Spinal surgical Training

- Cardiff Spinal Unit, University hospital Wales.
- Spinal Trauma, Tumours, infections and degenerations
- Adolescent Scoliosis

- Norwich Spinal Unit, Norfolk and Norwich University hospital
- Degenerative and spinal deformity surgery

- Spinal Unit, Addenbrooke's Hospital, Cambridge
- Minimally invasive/Keyhole spine surgery

- Eurospine Diploma:
  Major Spinal centres across Europe.

Changes and Challenges in Spinal surgery

Greater demand

Ageing population

Specialist opinion

Subspecialty training

Funding

Post code lottery

MDT approach

Decision making

Challenges:

Complex medical/Spinal patients

Patient expectations

Rising costs and pressure on hospital resources

Medico-legal framework

Compliance with guidelines

Research and innovation for better patient experience

Low back pain

- **Soreness or stiffness in the back, between the bottom of your rib cage and the top of your legs/buttocks**

- Acute: 6/52, 10-20% have precise pathology

- Subacute: 6/52 to 3/12, resolve in 2/12 in 90%

- Chronic: More than 3 months, 5% of the patients

- Persistence: (Duration of pain episodes)
- Recurrence: (Number of episodes)

- Frymoyer JW. Back pain and sciatica. N Engl J Med 1988;318(5):291–300

Risk factors

- History of previous episode of back pain
- Advanced age > 50 and female patients
- Overweight, low general health, co-morbidities
- Smoking and sedentary life style
- Psychosocial factors: Acute to Chronic (Attitude/Belief)
- Occupational factors: Moderate association with heavy work

So called Risk factors….

- Disk bulge or degeneration
- Spina bifida
- Transitional vertebrae
- Spondylosis
- Spondylitis
- Schmrol’s nodes and Scheuermann’s disease

- All of the above are often present in asymptomatic individuals

Diagnostic triage

- Specific Spinal Pathology/Serious Spinal pathology
- Nerve root pain/Radicular pain
- Nonspecific

The flag system

- Red flags: Serious underlying pathology
- Yellow flags: Psychosocial and environmental factors
- Black flags: Workplace objective conditions
- Blue flags: Subjective perceptions about work
- Orange flags: Serious mental disorder

Serious Pathology

Fracture Cauda Equina
Cancer / Infection

- Falls
- RTA
- Heavy lift in elderly

- Saddle anaesthesia
- Sensory level
- Motor weakness
- Bladder dysfunction

- Rest /Night pain
- Fever, chills
- Neurology
- Deformity
- Age
- Previous cancer
- Weight loss
- Immunosuppression
- IV drug use
- Fever
- Loss of ROM

- More weight is given to multiple “red flags” signs/symptoms and individual findings are not necessarily indicative of serious pathology

- Standing in isolation age<20 or >50, thoracic pain, weight loss or severe restriction of lumbar flexion can all be features of non serious pathology

- Age >50 + history of cancer + unexplained weight loss + failure to improve after 1 month conservative therapy = sensitivity 1.0 (Deyo 1992)

The Supremacy of the Clinical Evaluation

- Boden SD, Davis DO, Dina TS, et al. Abnormal magnetic resonance scans of the lumbar spine in asymptomatic subjects. A prospective investigation. J Bone Joint Surg Am 1990;72(3):403–408

- 67 patients without lumbar spine symptoms
- Lumbar spine abnormality on MRI was found
- 20% subjects Under 60
- 57% subjects over 60.

Spinal or Extra-Spinal

History

- Clues:
- Back pain with fever
- Back pain in slender, smoker, post-menopausal women
- Back pain with early morning stiffness/Joint pains
- Back pain with abdominal pain/renal angle tenderness
- Back pain post-operative: Early and late, Vertebroplasty
- Back pain with previous history of cancer

Knowing more about pain

- VAS
- Questionnaire
- Pain diagrams
- Character of pain
- Previous treatments and progress
- Response to any injections or outcome of surgery

Examination

- Focused based on history
- Gait
- Alignment
- Range of motion
- Neurology
- Diagnostic tests
- Hip, knee and peripheral vascular checks

Red Flags” in Paediatric patients

Night pain/Limp/gait abnormality

Progressive deformity

Refusal to bear weight

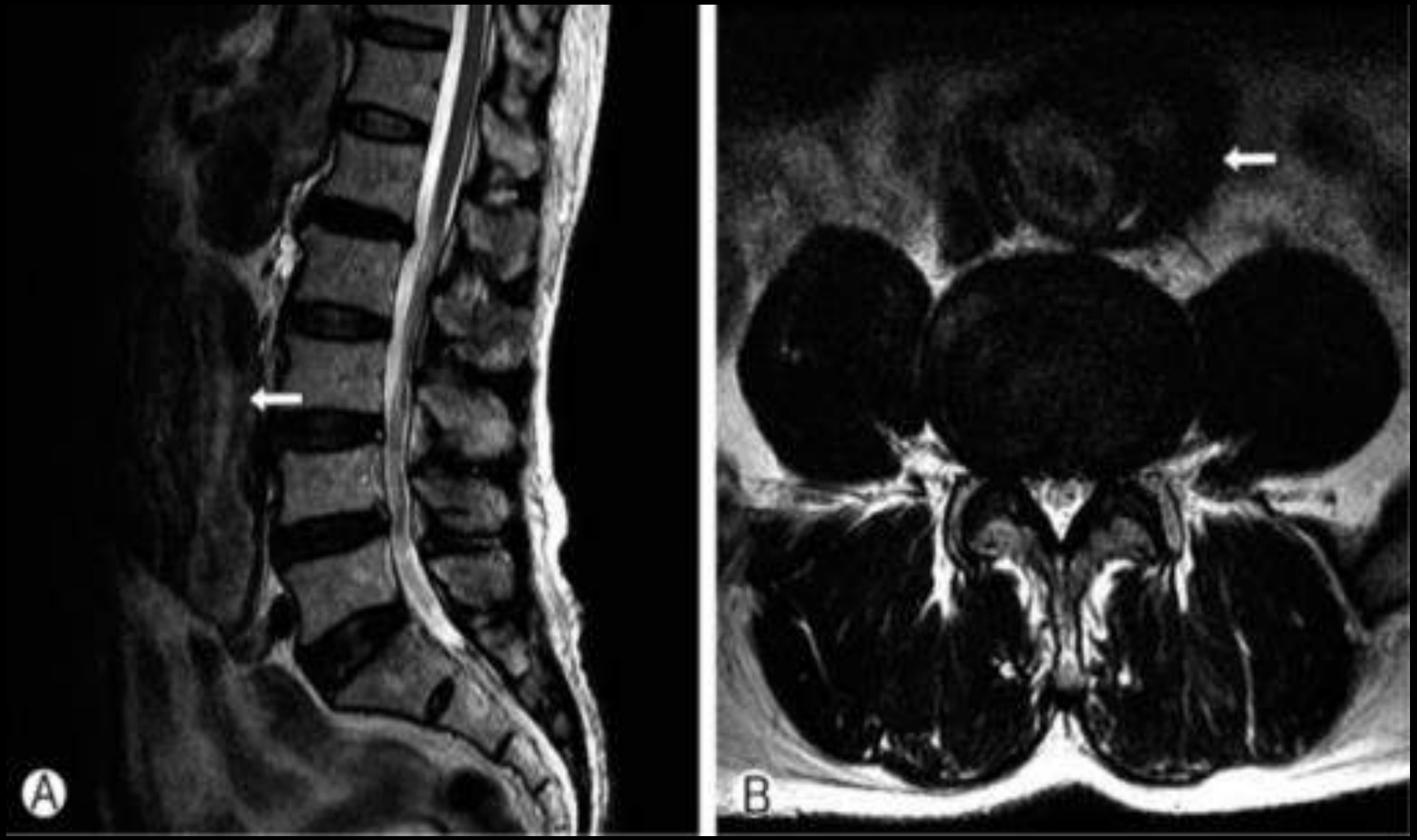
Abnormal bruising or bleeding

Back pain in a young child (< 5 years of age)

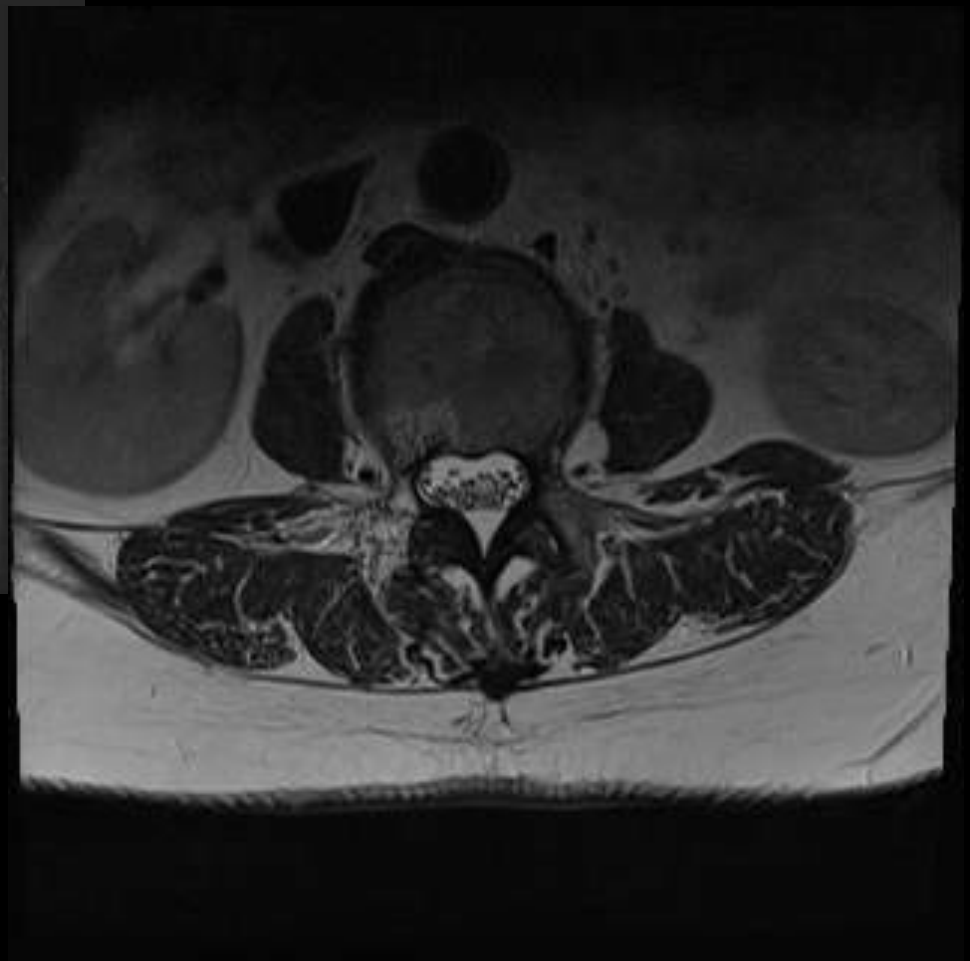
Lymphadenopathy or abdominal mass

Lost or delayed developmental milestones

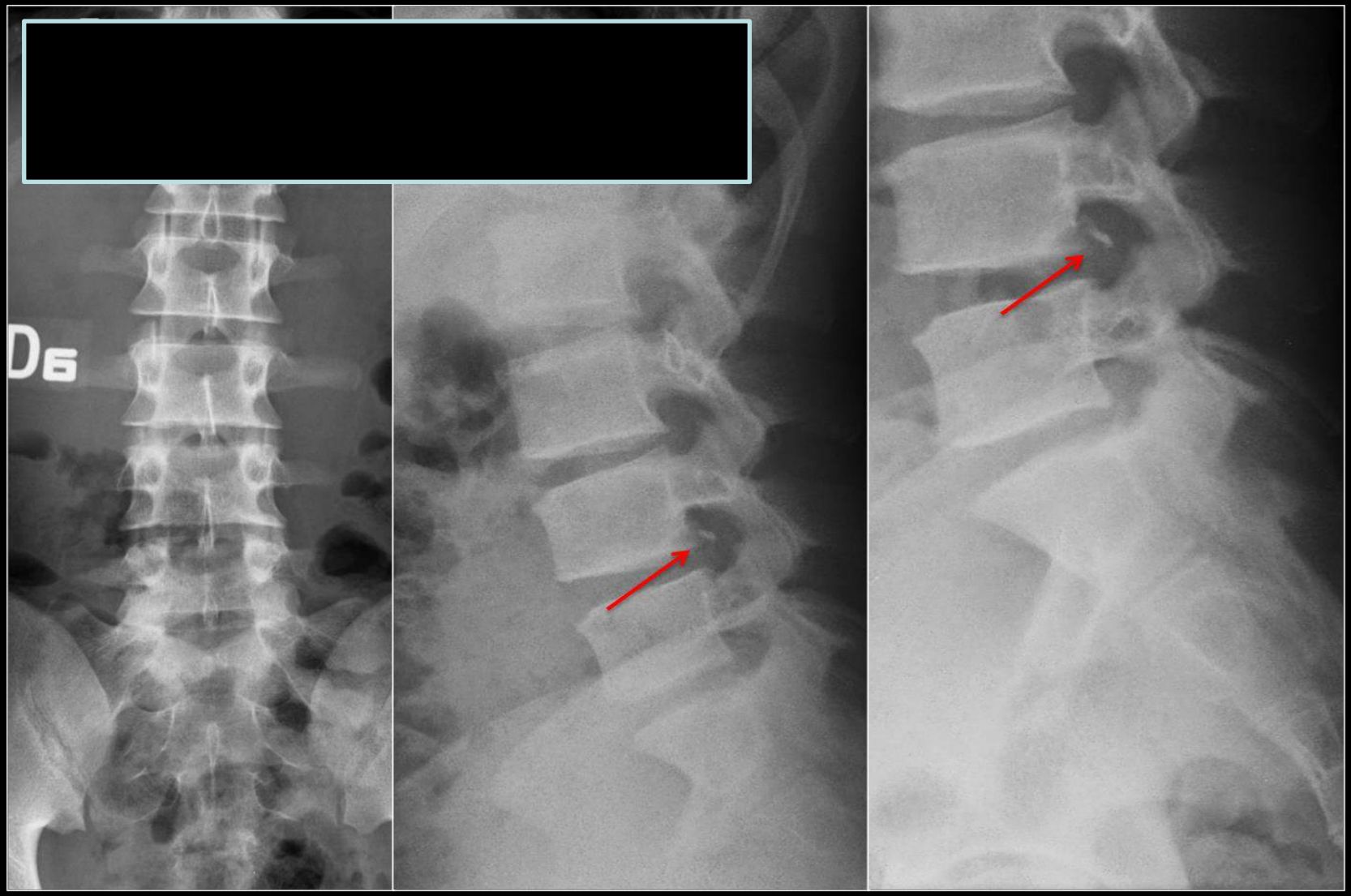
Man with aneurysm



Psoas haematoma



Apophyseal ring injury



Spinal

- Structural
- Segmental instability, Discogenic pain, Annular tears
- Facet arthropathy, Ligamentous or muscle sprains
- Spondylolisthesis
- Spinal Stenosis
- Fractures
- Infections
- • Diskitis • Vertebral osteomyelitis
- Inflammatory
- • Ankylosing spondylitis • Rheumatoid arthritis
- Tumours
- • Primary • Secondary myeloma
- Endocrine
- Osteomalacia • Osteoporosis • Acromegaly
- Haematologic Sickle disease

Extra-spinal causes of back pain

- Visceral
- Renal calculi, urinary tract infections, pyelonephritis, Duodenal ulcers, Thoracic or abdominal aortic aneurysms, Mitral valve disease left atrial growth, Pancreatitis, Retroperitoneal neoplasms, Gallstones
- Gynecologic
- Ectopic pregnancy, Endometriosis
- Medications
- Corticosteroids as a cause of osteoporosis
- Retroperitoneal fibrosis
- Musculoskeletal
- Hip diseases, Sacroiliitis, Scapulothoracic pain
- Psychogenic

The case of not so obvious

- No obvious pathology
- Mechanical back pain
- Waddell signs:
- Diagnostic injections
- Post-operative back pain

Low back Pain- What Not To Do : Guidelines

- Current evidence **does not** favour the use of the following

- Belts, corsets
- Acupuncture
- Traction
- Electrotherapy, TENS, Ultrasound
- Antineuropathic medications
- ? Diazepam

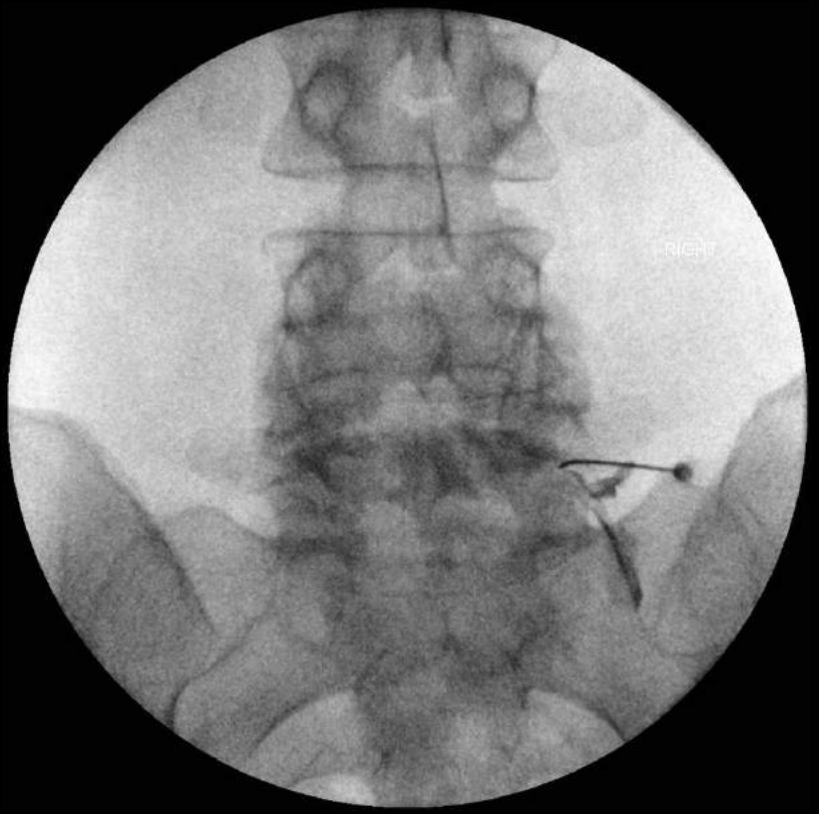
Nerve root BLOCK

TRANSFORAMINAL EPIDURAL INJECTION
DORSAL GANGLION BLOCK

Sciatic pain not improving 6 weeks or more

Assessment by BANS TEAM

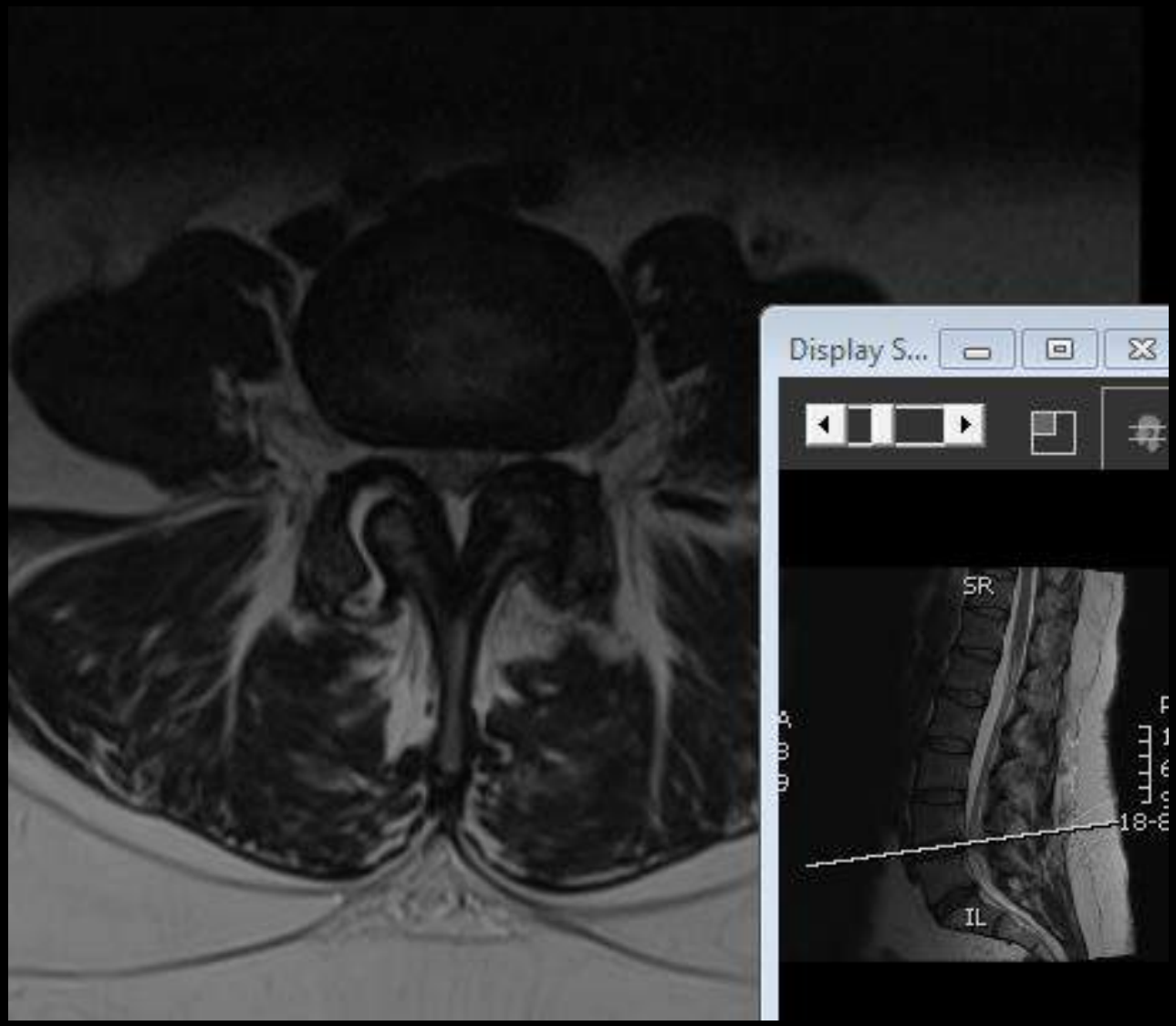
ROOT CONTRAST



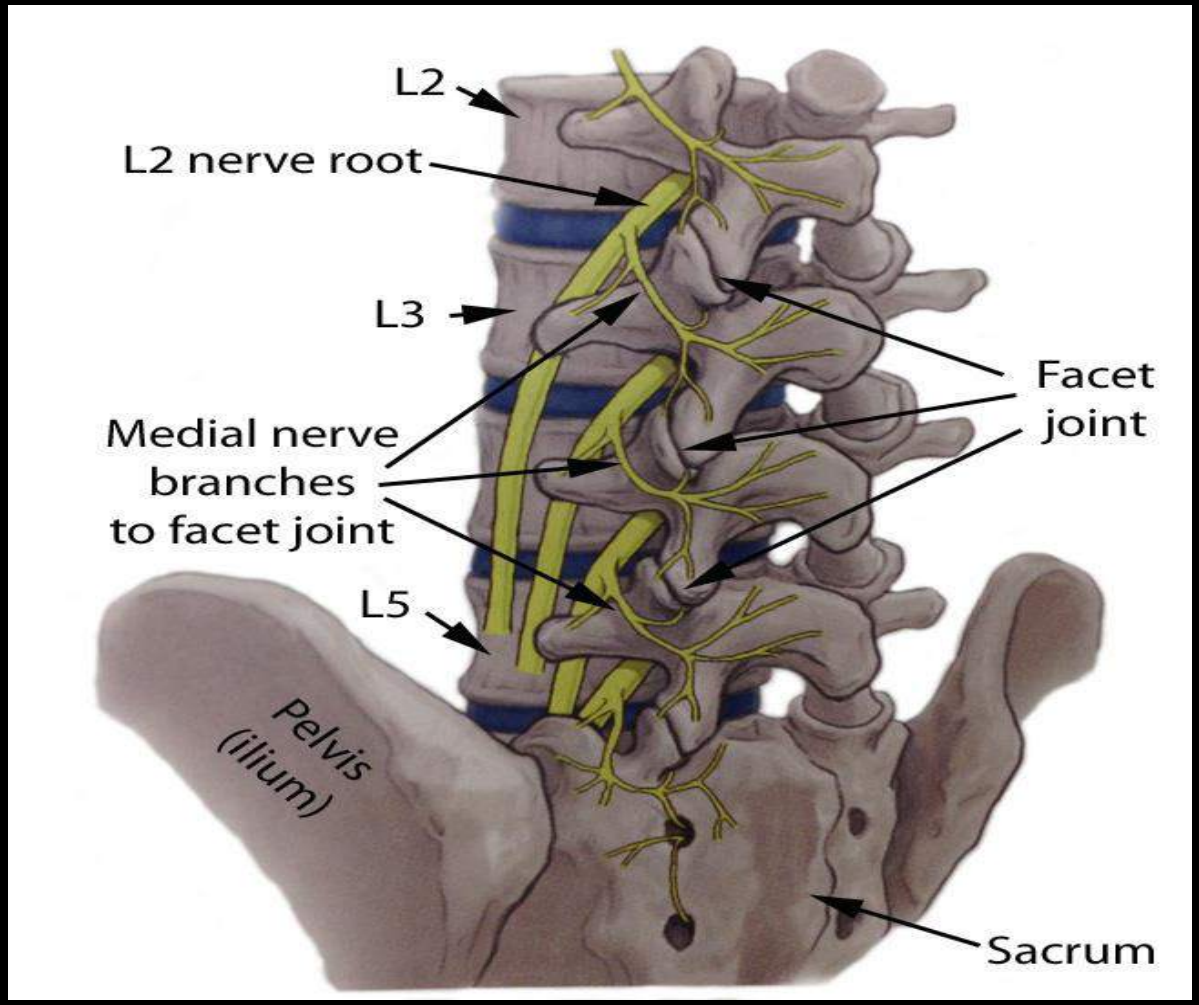
FACETAL LOW BACK PAIN

- Facetal low back pain
- Pain on extention
- Pain increases on return from flexion
- May have a preserved disc on mri
- May not show evidence of nerve root compression
- No spondyloarthropathy

MRI



MEDIAL BRANCH BLOCK



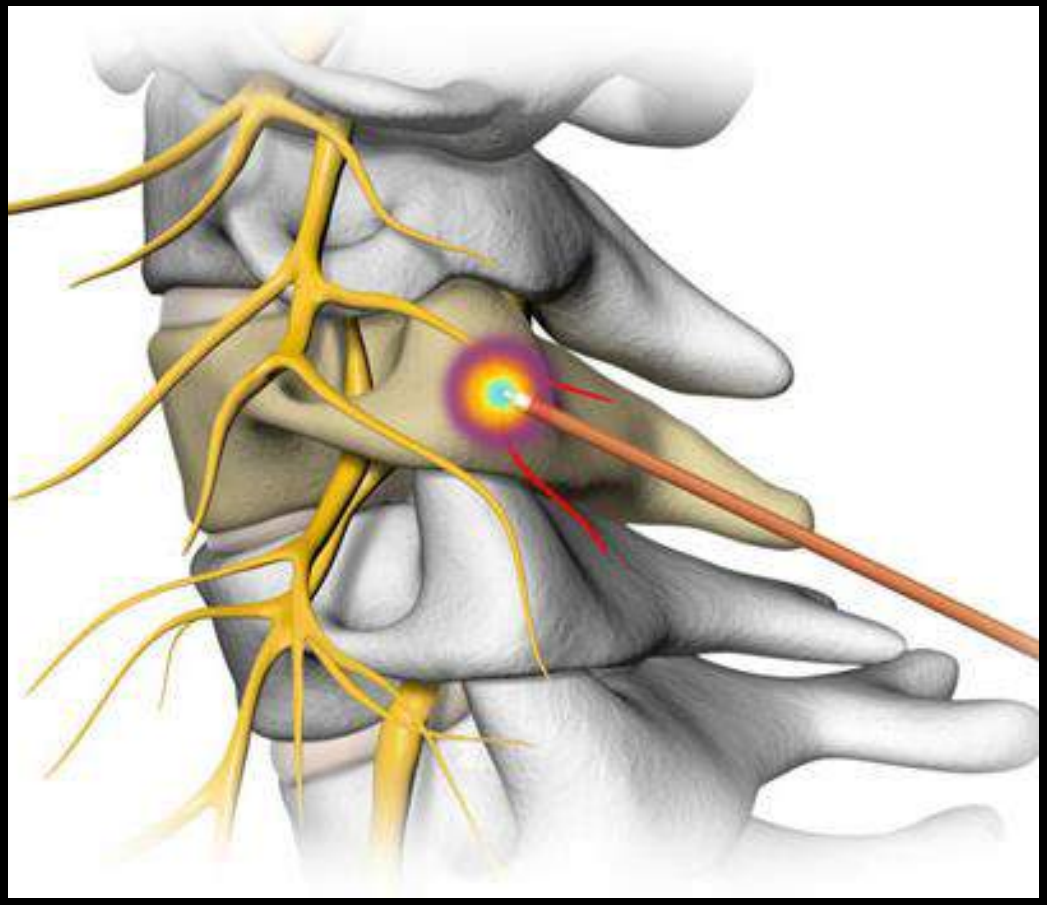
FACET JOINT INJECTION

- MEDIAL BRANCH
- FACET INNERVATION
- FACET JOINT DENERVATION
- PAIN TEAM

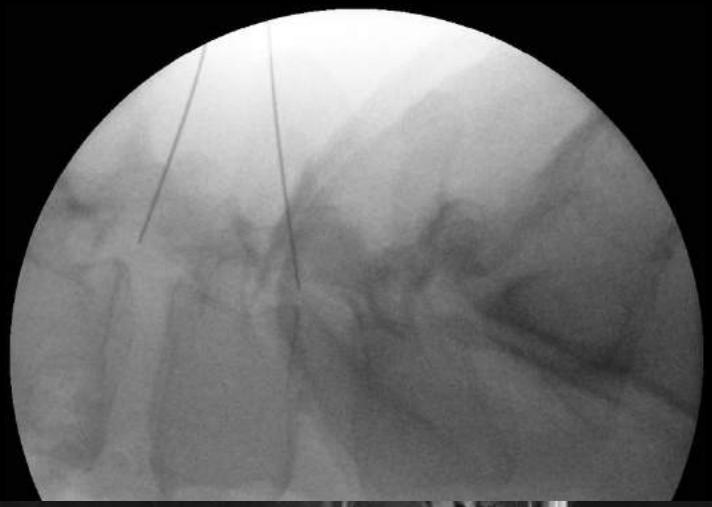
FACETS

- JOINT INJECTION
- MEDIAL BRANCH BLOCK

DENERVATION



Discogenic back pain



Disc as pain generator


L
Standing

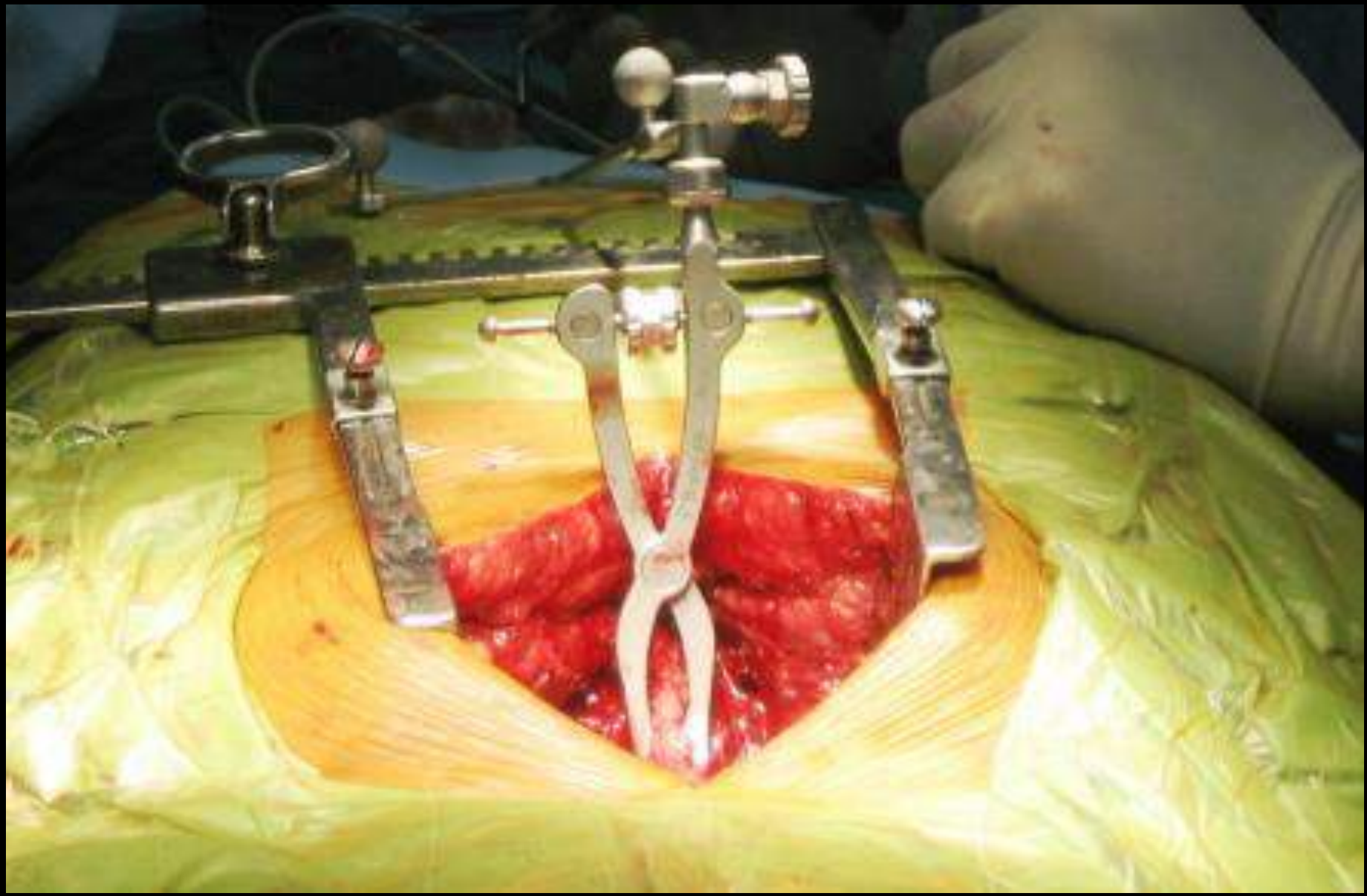

L
Standing

Post-operative back pain

- Conventional Open midline procedures
- Detachment of muscles from spinous process
- Prolonged retraction

- Muscle biopsy
- High Gylcerol content
- Muscle fibre atrophy
- Widespread fibre type regrouping

- Muscle atrophy on MR
- Monosegmental nerve supply for MF



Recent advances in Spinal surgery

Minimally invasive Spine surgery (Keyhole)

Navigation

Neuromonitoring

Adult deformity surgery

Reactivate trial

MIS interbody fusion trial

Summary

- Clues from history
- Focused examination
- Flags and clinical evaluation
- Treatment of LBP is multidisciplinary

- Think outside the Spine…

Thank you

Questions