Neck Pain and radiculopathy

Praveen Inaparthy
Consultant Orthopaedic spinal surgeon

Ramsay Health Care

Introduction

1. A typical 12-month prevalence rate of neck pain for working adults is 30% to 50%
2. Limitation of activity related to this pain has a 12-month prevalence of 2% to 11%.[1]

1. *Haldeman S, Carroll L, Cassidy JD. Findings from the bone and joint decade 2000 to 2010 task force on neck pain and its associated disorders. J Occup Environ Med.2010;52(4):424-427.*

Clinical presentation

1. Axial neck pain
2. Axial neck pain with radiculopathy
3. Axial neck pain with radiculopathy and myelopathy

Axial neck pain

Ramsay Health Care

1. Commonest presentation

2. Causes – commonly due to

   - muscular spasms,
   - facet joints and
   - ligamentous strains.

3. Infrequent causes –

   - Inflammatory conditions - rheumatoid, ank. Spond.
   - infections and
   - tumours

Presentation

1. typically present with pain in the posterior neck muscles,
2. with frequent radiation to the occiput or shoulder regions .
3. stiffness of the neck and
4. headaches are common.

Muscular, facet joint and ligamentous cause for pain

- usually present with initial severe pain which gradually improves.
- Sustained postures at work
- Exercises and painkillers help.
- *May have shoulder pathology*

Infections and tumours

- Gradual onset and worsens over time
- History of infections/ tumours
- Systemic features – loss of wt and appetite

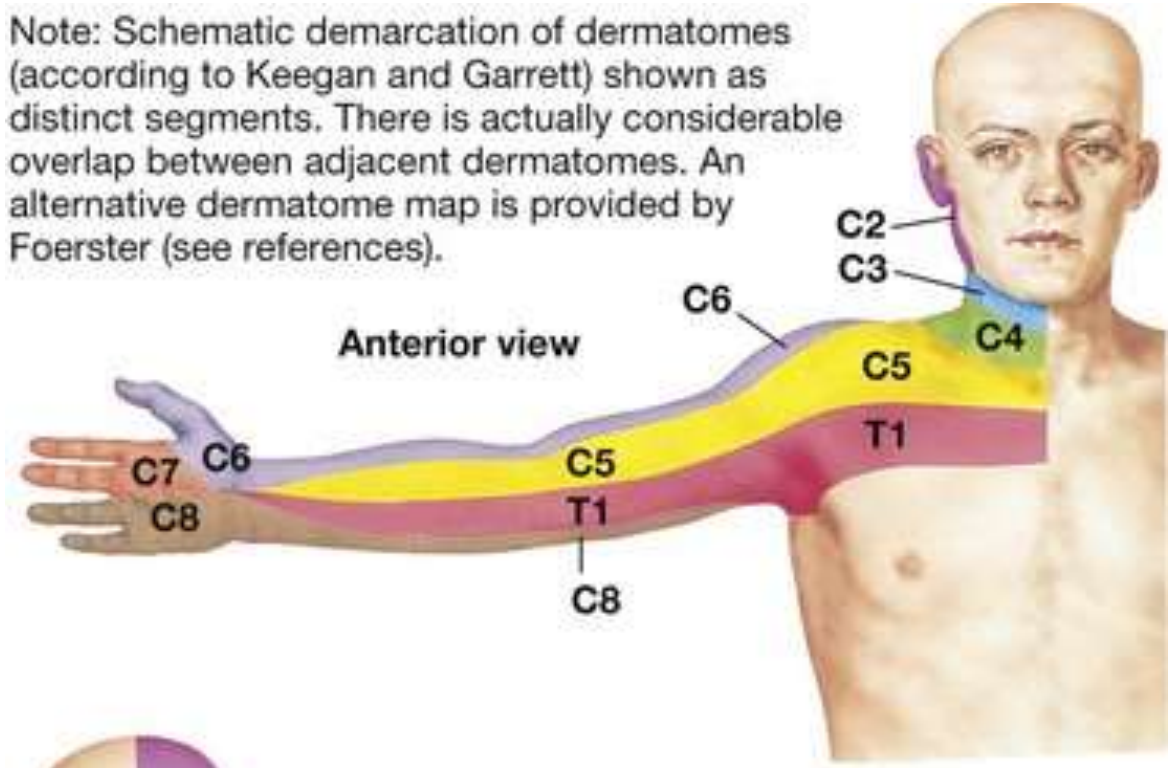
Non – pathological neck pain

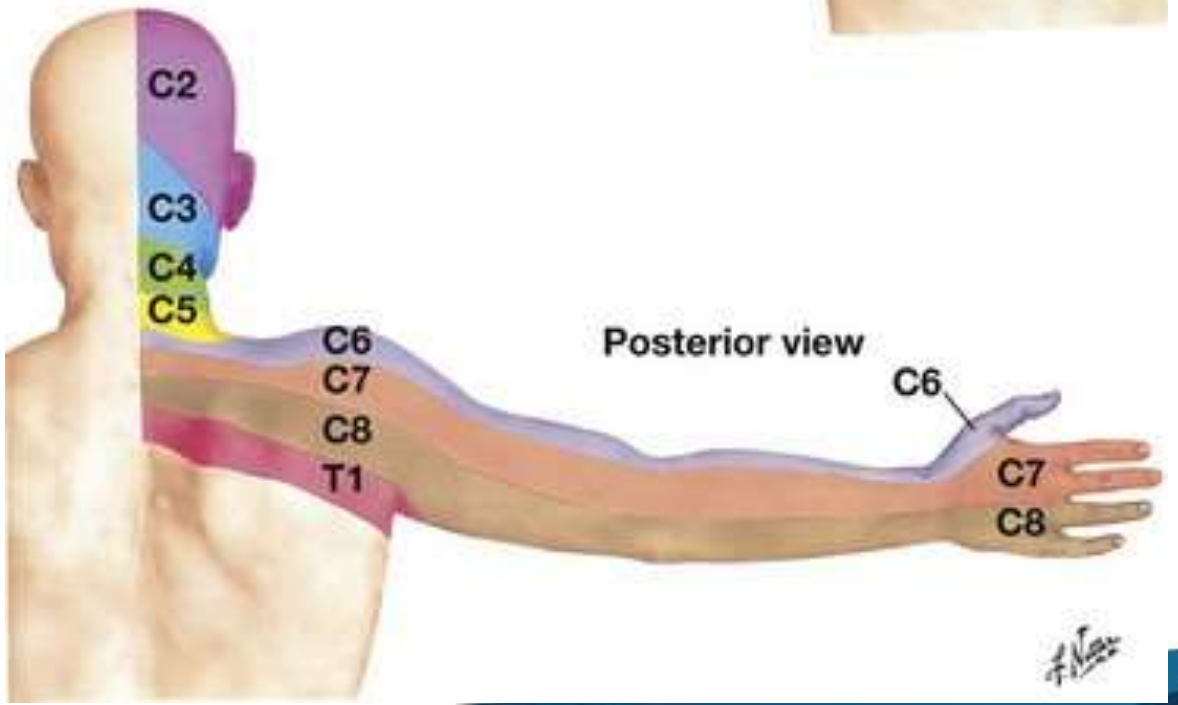
1. Treatment options
    - Re-assurance and Lifestyle changes – posture management, smoking
    - Physiotherapy
    - Pain injections – epidural and trigger point injections
    - Radiofrequency ablation

Neck pain with radiculopathy

1. Radicular pain caused by compression of nerve root
2. Prevalence – up to 5 per 1000
3. Characterised by pain, numbness and weakness in dermatomal distribution

Note: Schematic demarcation of dermatomes (according to Keegan and Garrett) shown as distinct segments. There is actually considerable overlap between adjacent dermatomes. An alternative dermatome map is provided by Foerster (see references).





Ramsay Health Care

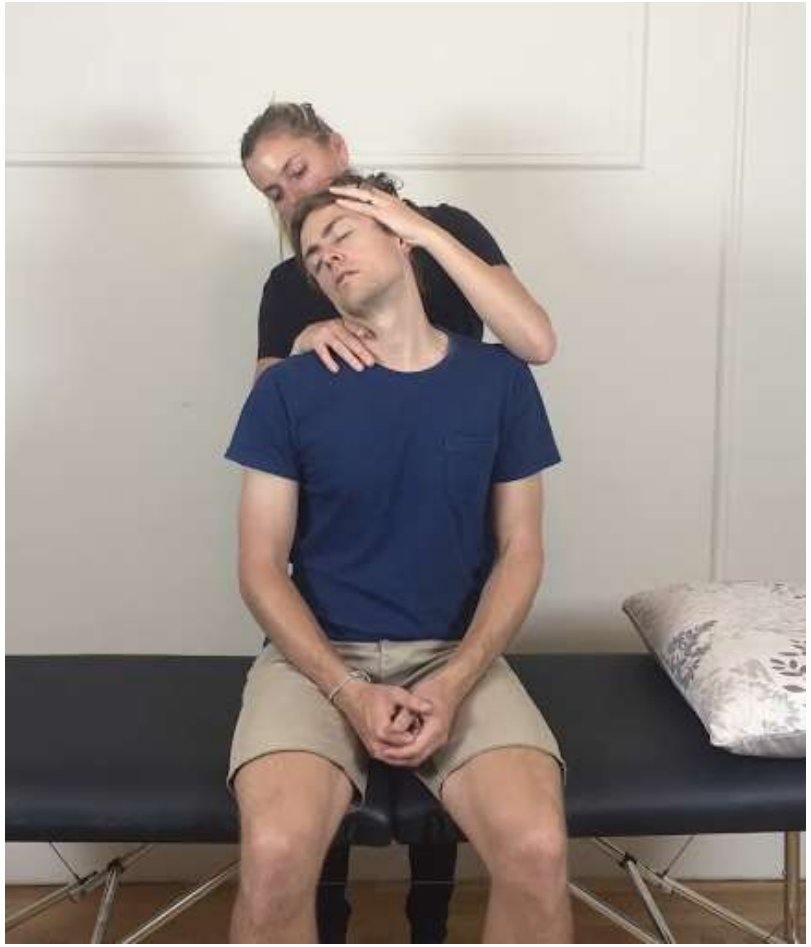
Causes

1. Disc prolapse
2. Cervical spondylosis causing foraminal stenosis
3. Extraspinal entrapment – thoracic outlet syndrome, cubital and carpal tunnel
4. Rare causes – infection and tumour

Clinical features

1. Clinical examination shows dermatomal pattern numbness
2. Weakness in corresponding nerve root distribution
3. Shoulder abduction gives relief
4. Spurling’s test

Spurling’s test



1. Caution - Can be very painful
2. More than 90% sensitivity and specificity

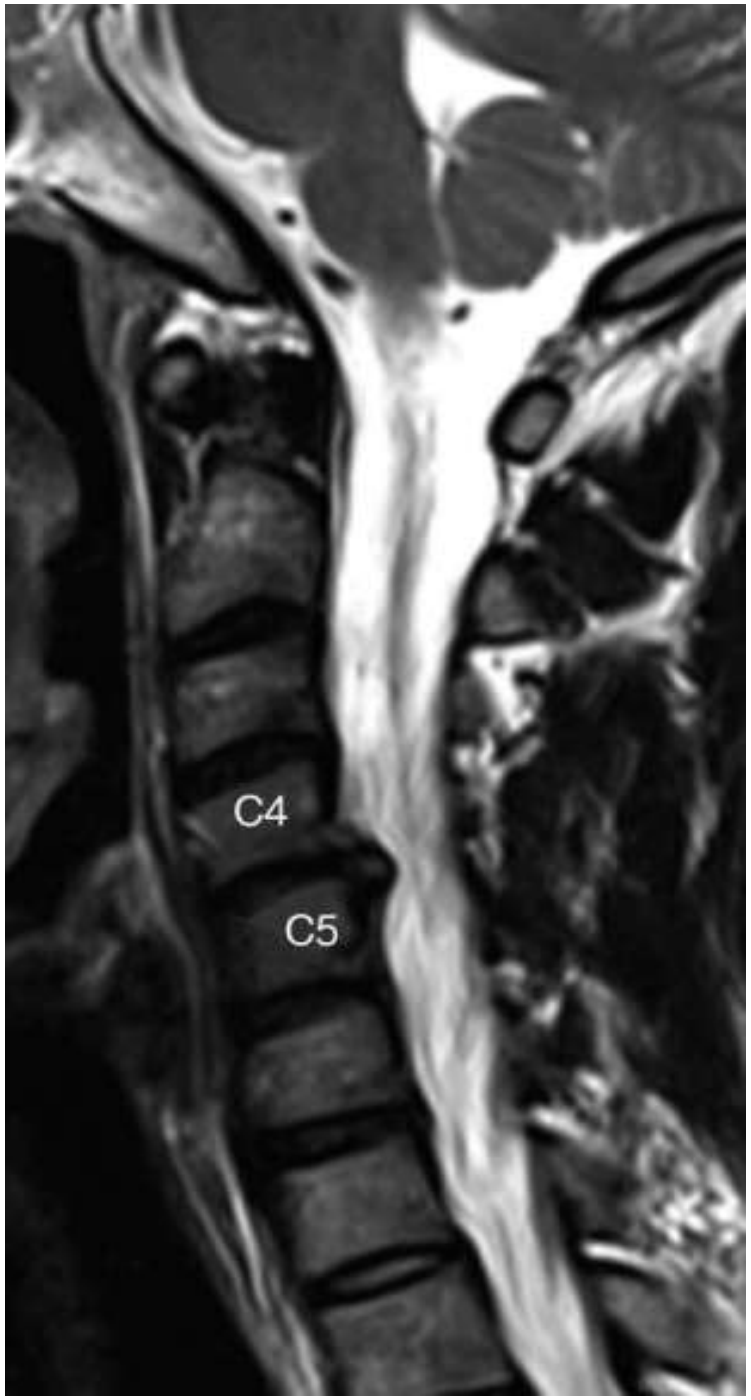
Shoulder abduction test

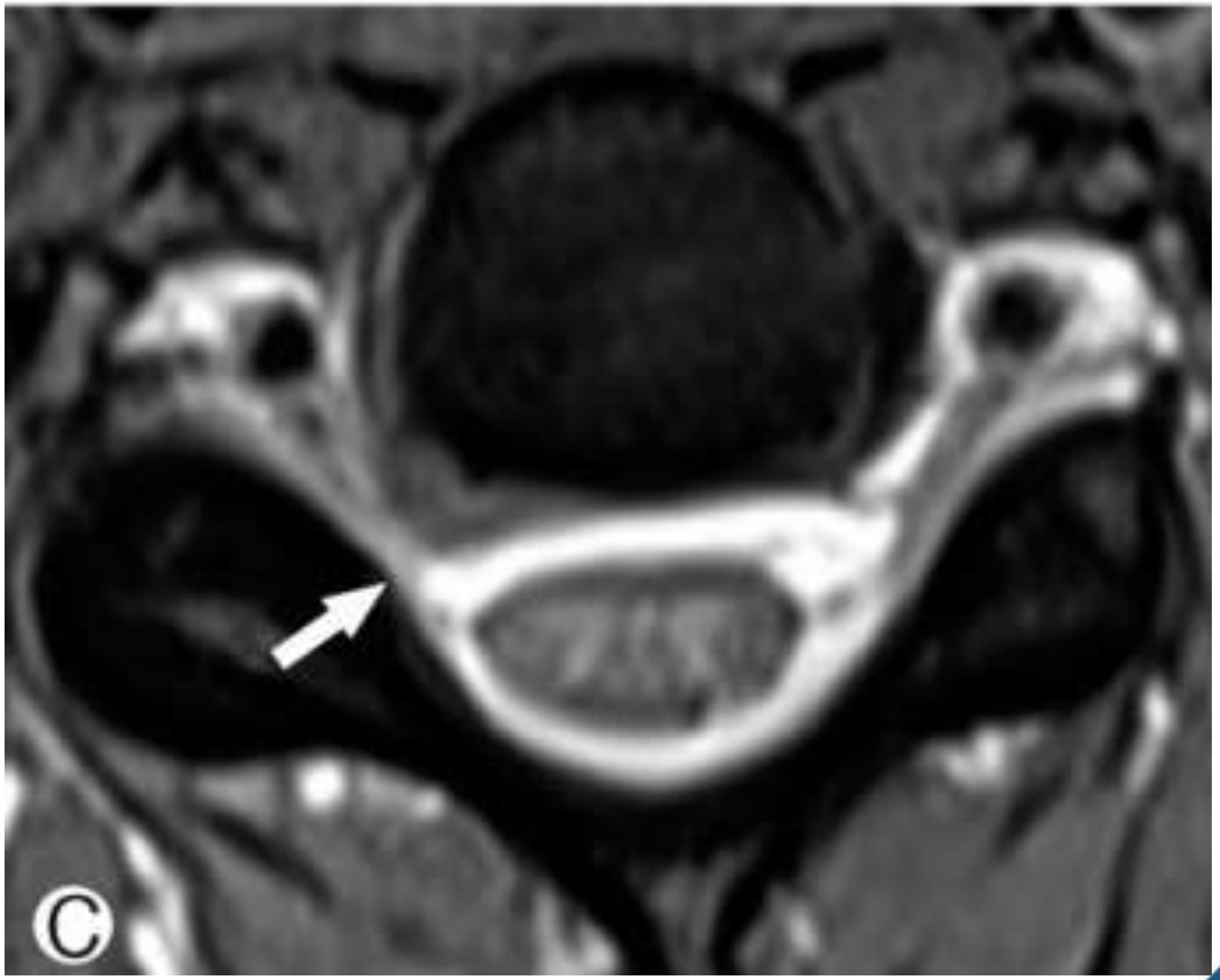
Patients might do it spontaneously after

spurling’s test

Diagnostic tests

1. MRI scans – gold standard
2. Nerve conduction studies – helps rule out differential diagnosis like peripheral entrapment and peripheral neuropathy



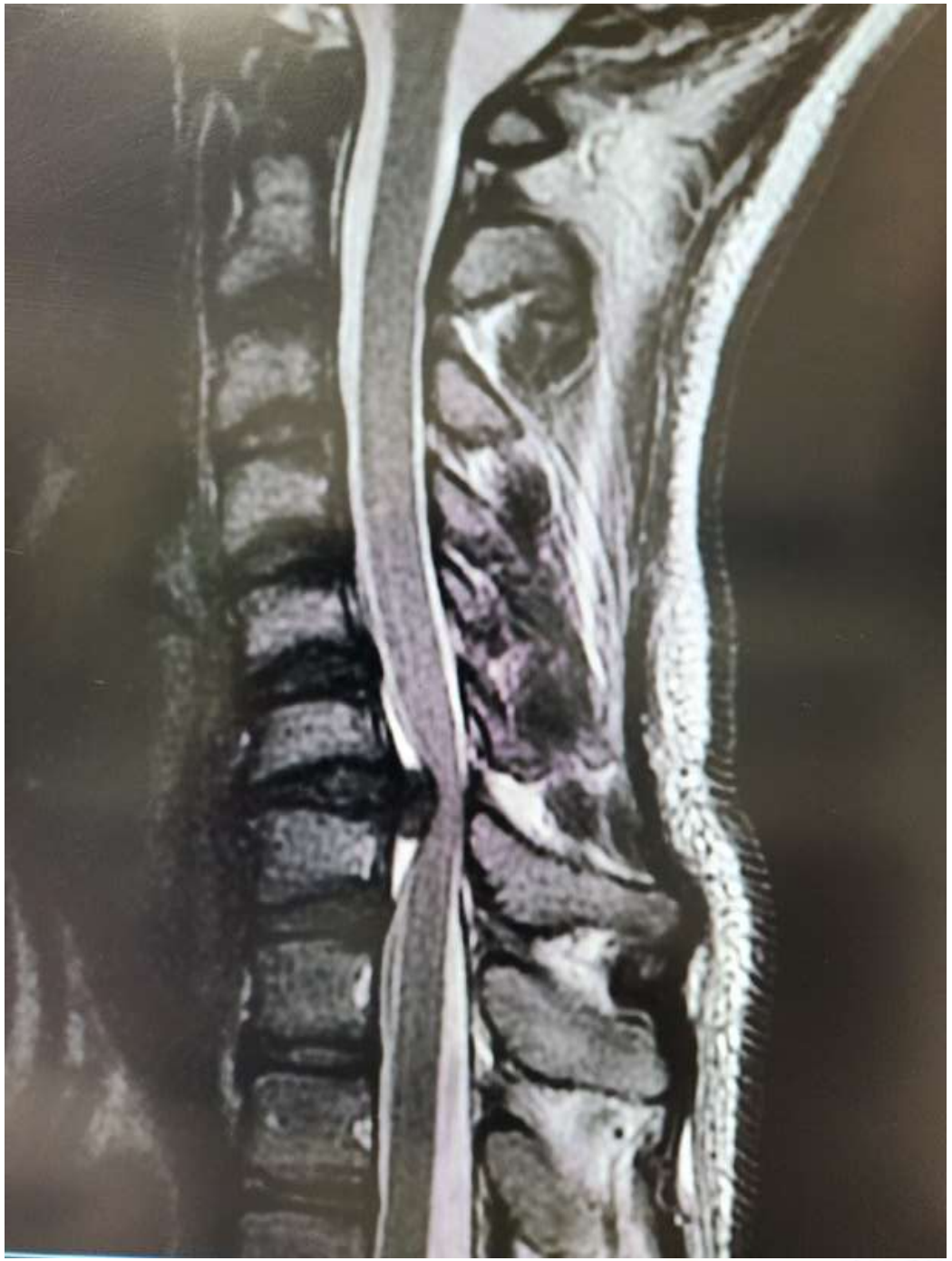


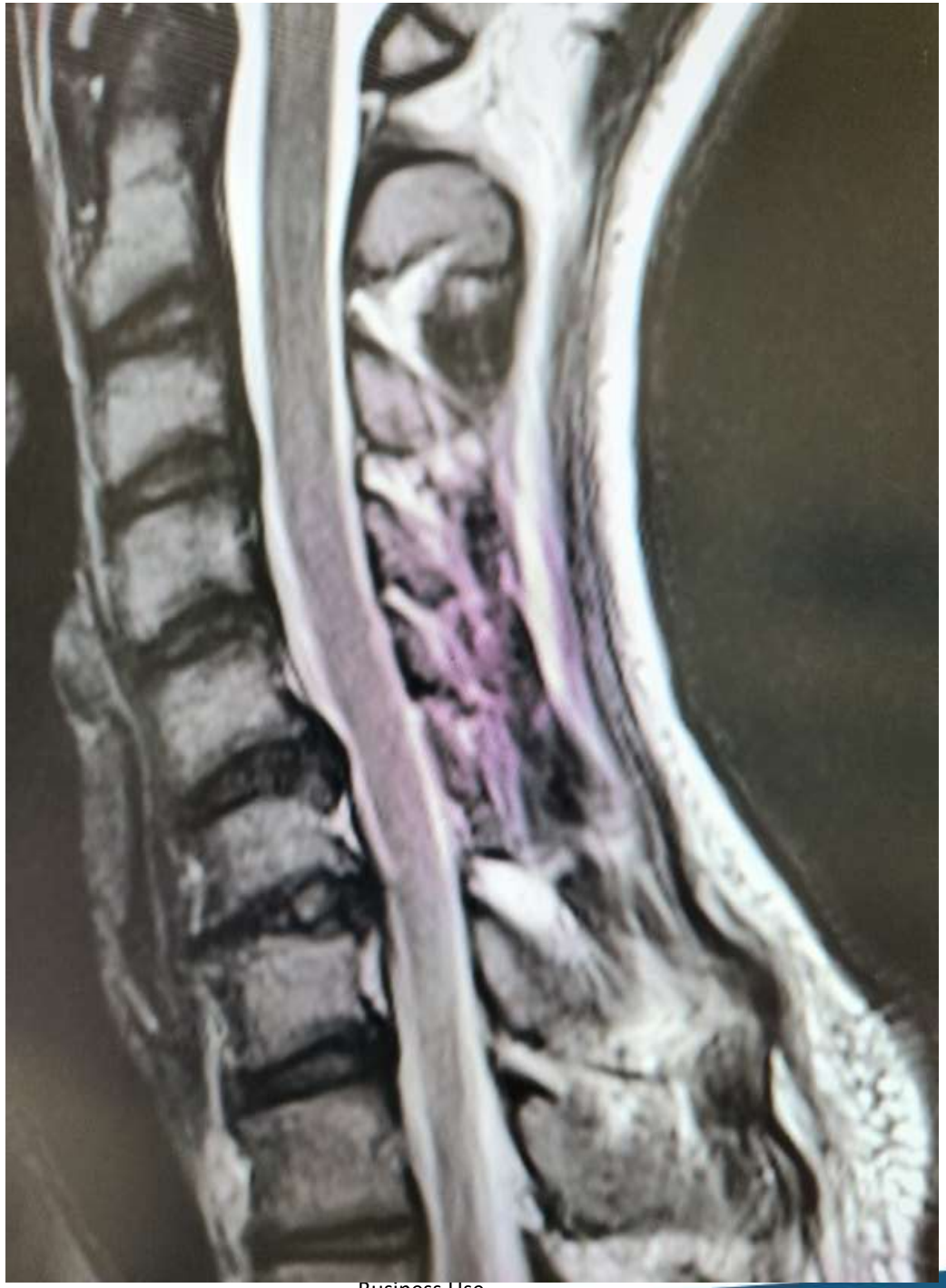
Treatment

1. Majority of disc prolapses settle naturally
2. Treat with medications – painkillers and muscle relaxants
3. Physiotherapy – range of motion exercises (frozen shoulder)
4. Injection therapy – nerve root or epidural

Surgery

1. If symptoms persist for more than 5-6 months, consider surgery
2. Anterior Vs posterior approach





Neck pain with myelopathy

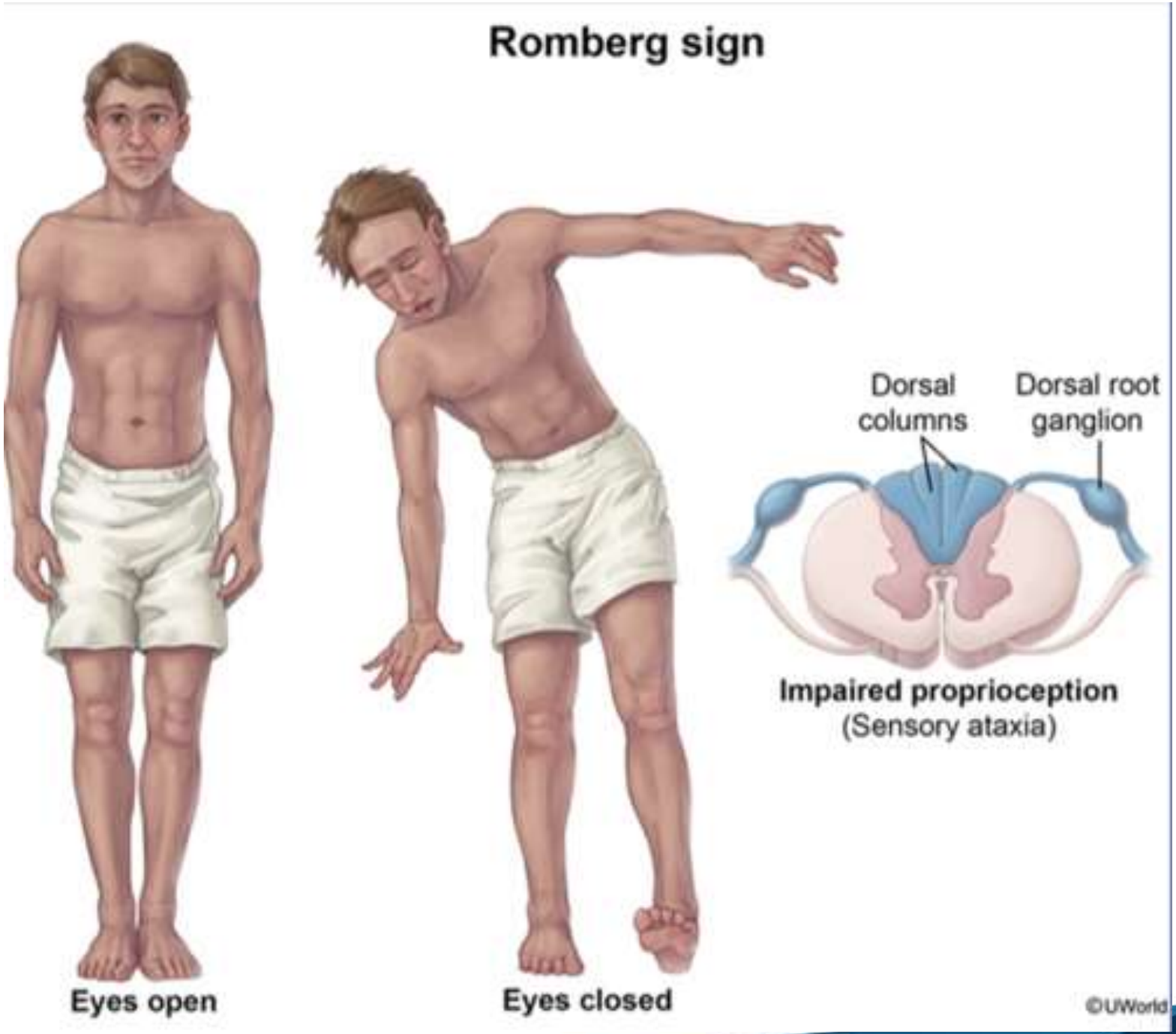
1. Caused by cord compression
2. Patients present with mainly upper motor neuron symptoms
3. If there is nerve root impingement along with cord compression, patients can have radicular symptoms too.

Clinical features

1. Loss of balance
2. Loss of fine motor skills
3. Upper motor neuron signs

Special tests

1. Loss of balance – rhomberg's test
2. Hyperreflexia – tendon stretch
    - Hoffman's test
    - Radial inversion
    - Clonus



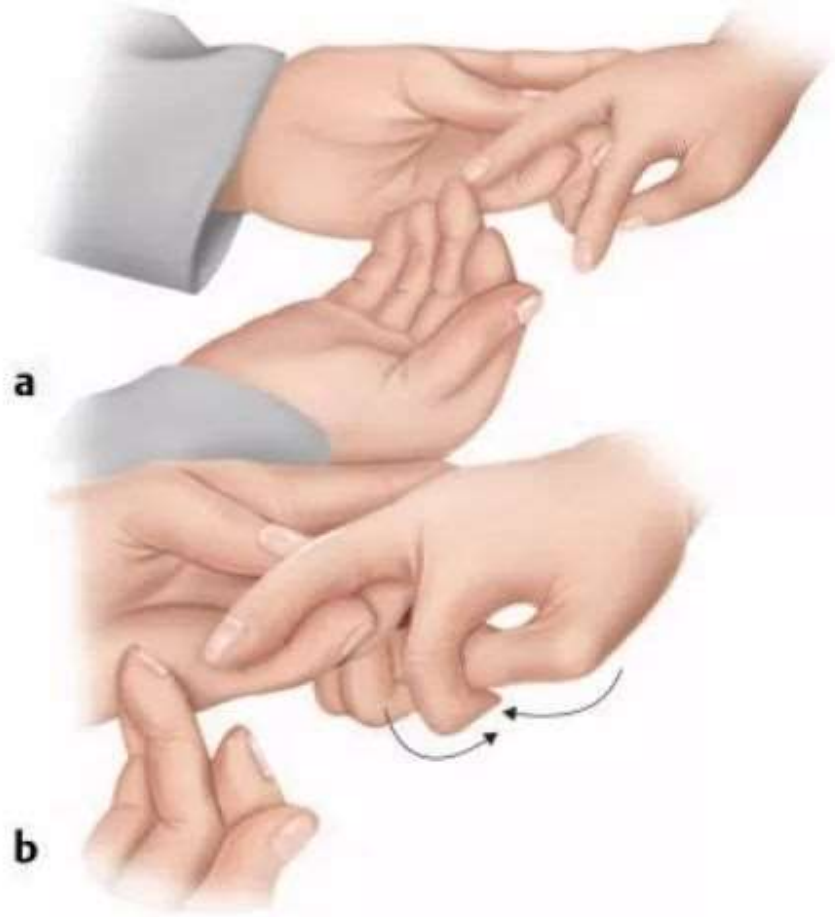
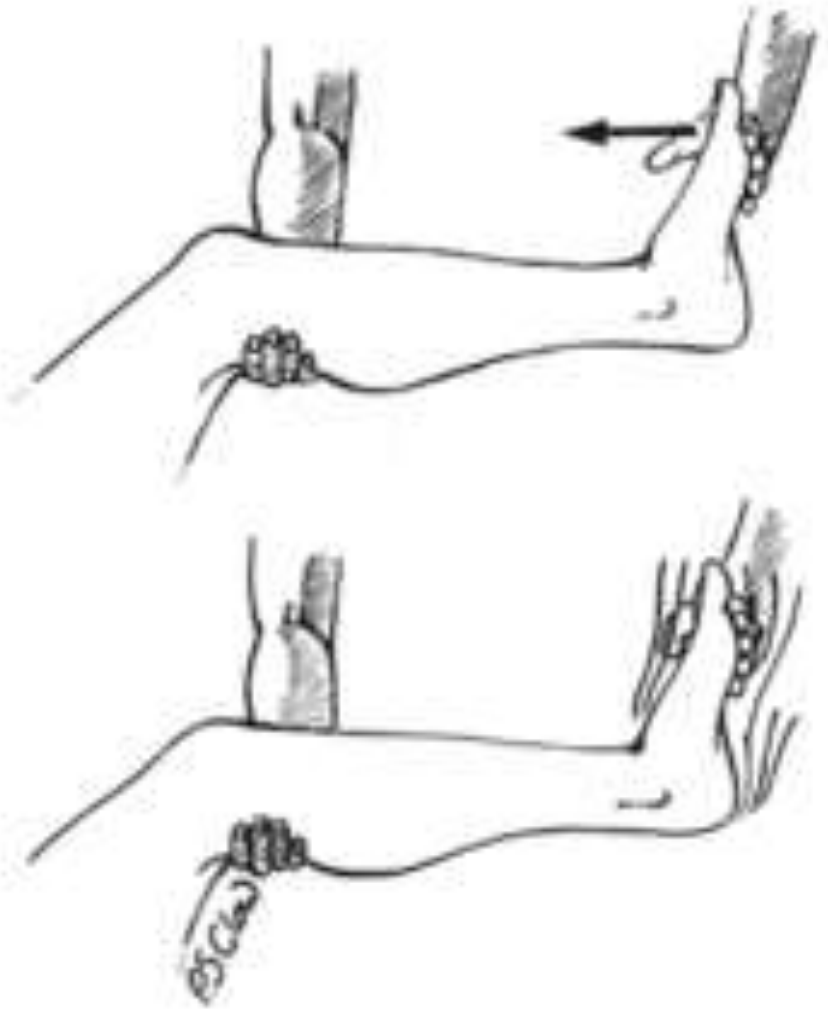


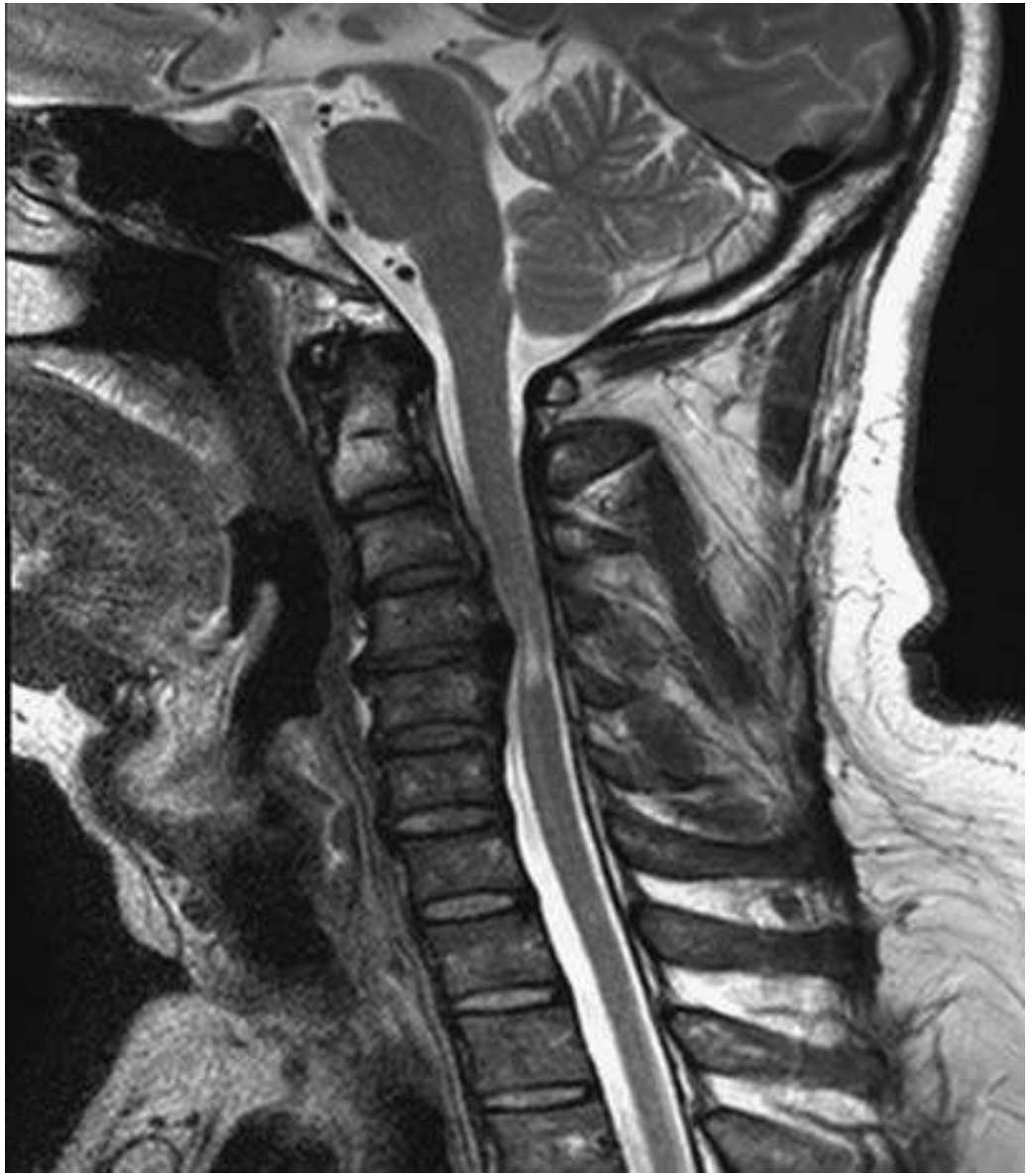
Fig. 2.70 (**a**) Hoffmann's test. (**b**) Positive Hoffmann's test with finger and thumb flexion after flicking the middle fingernail.

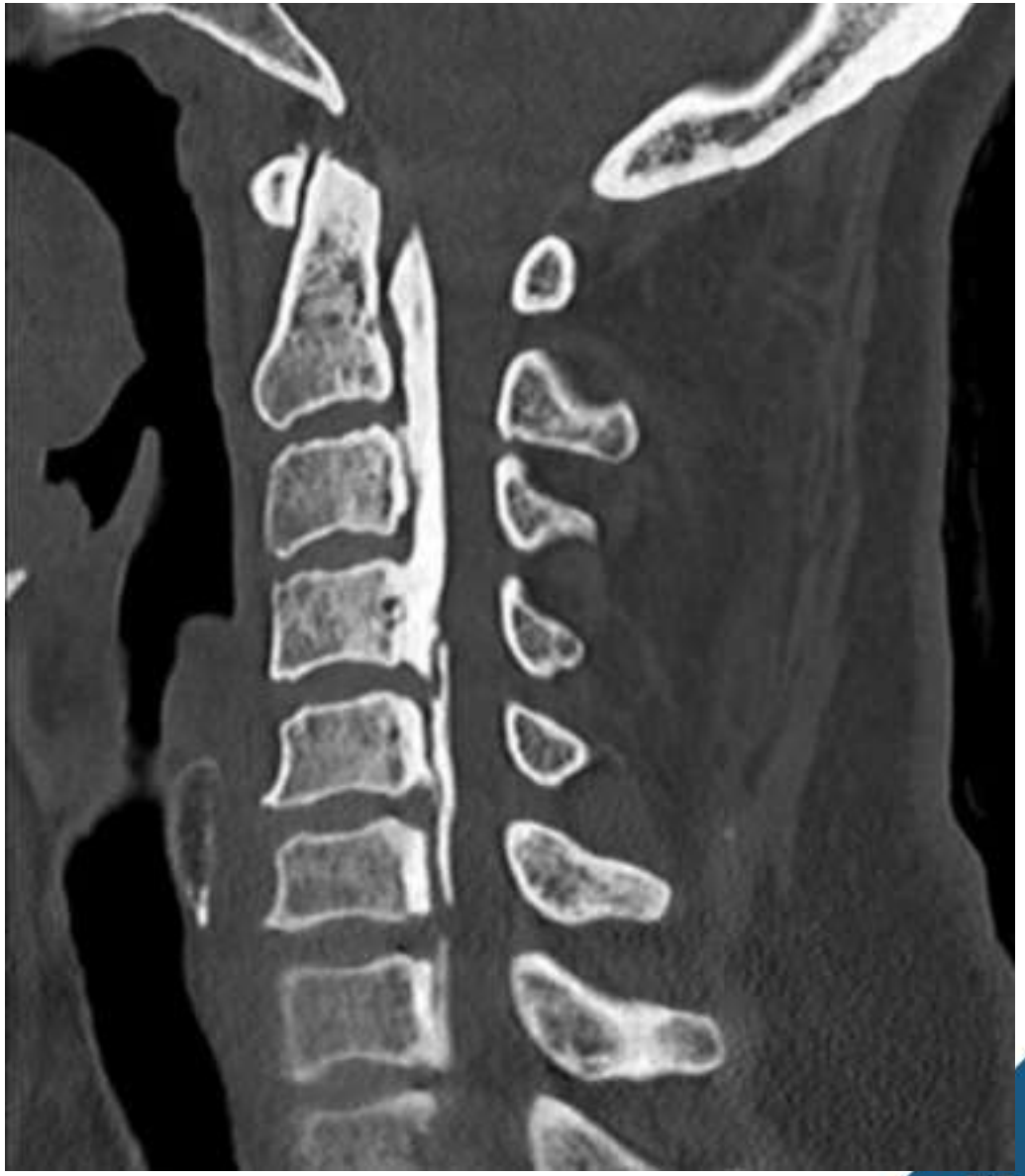


Clonus.

Investigations

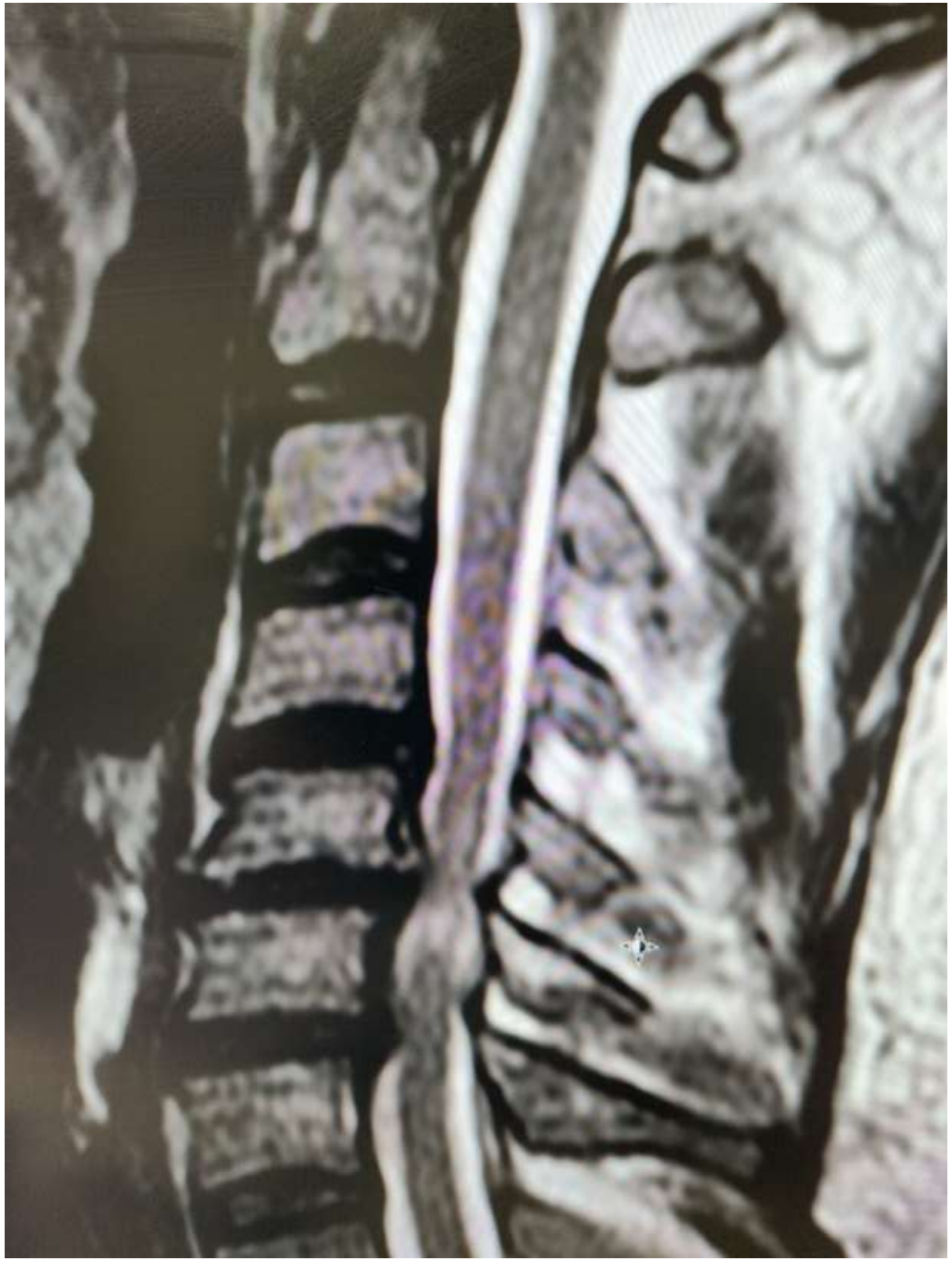
1. MRI scans – gold standard. Demonstrates cord, nerve root, disc bulge, flavum and other soft tissues
2. CT scans – for bony outlines and calcification

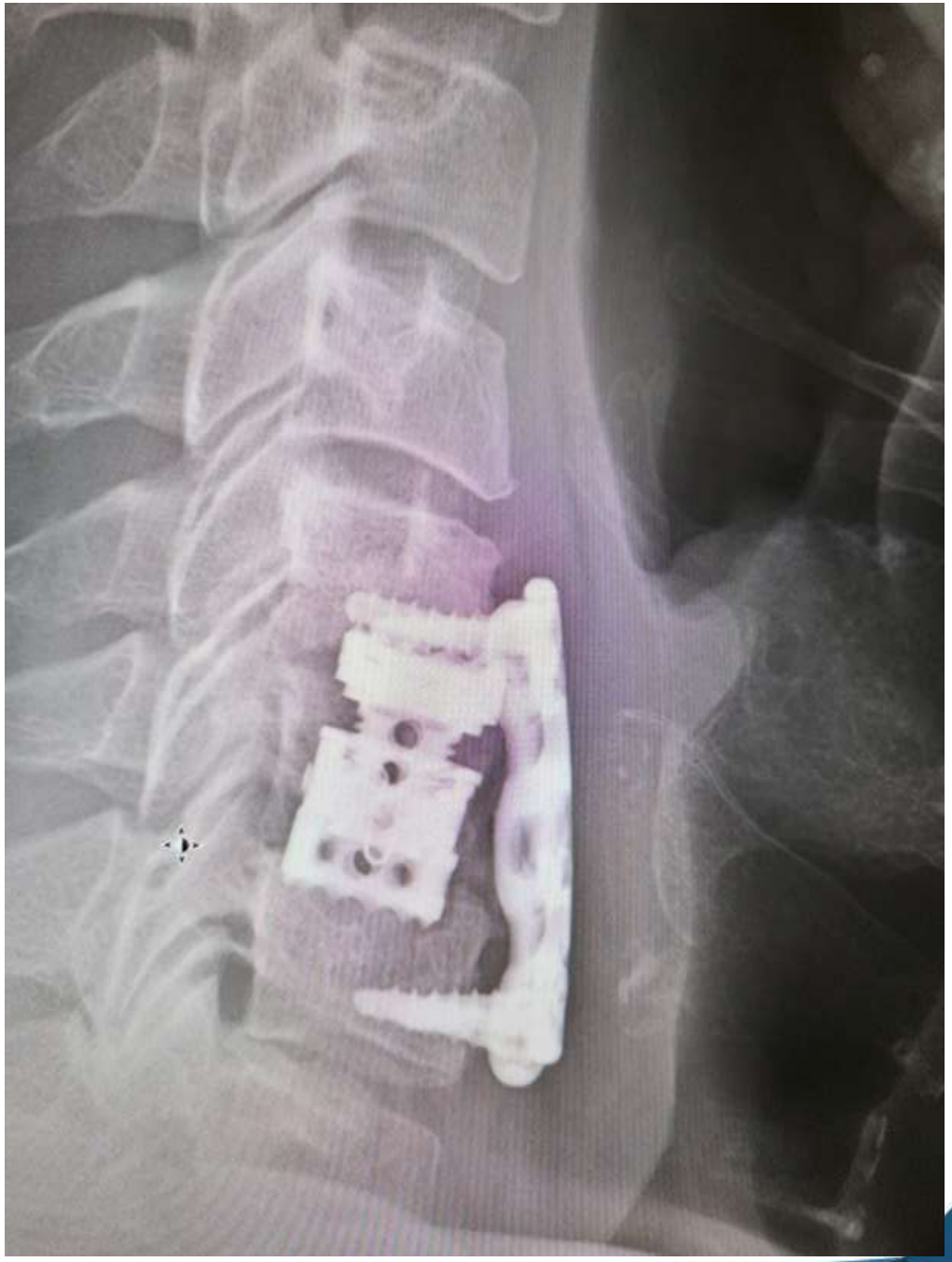


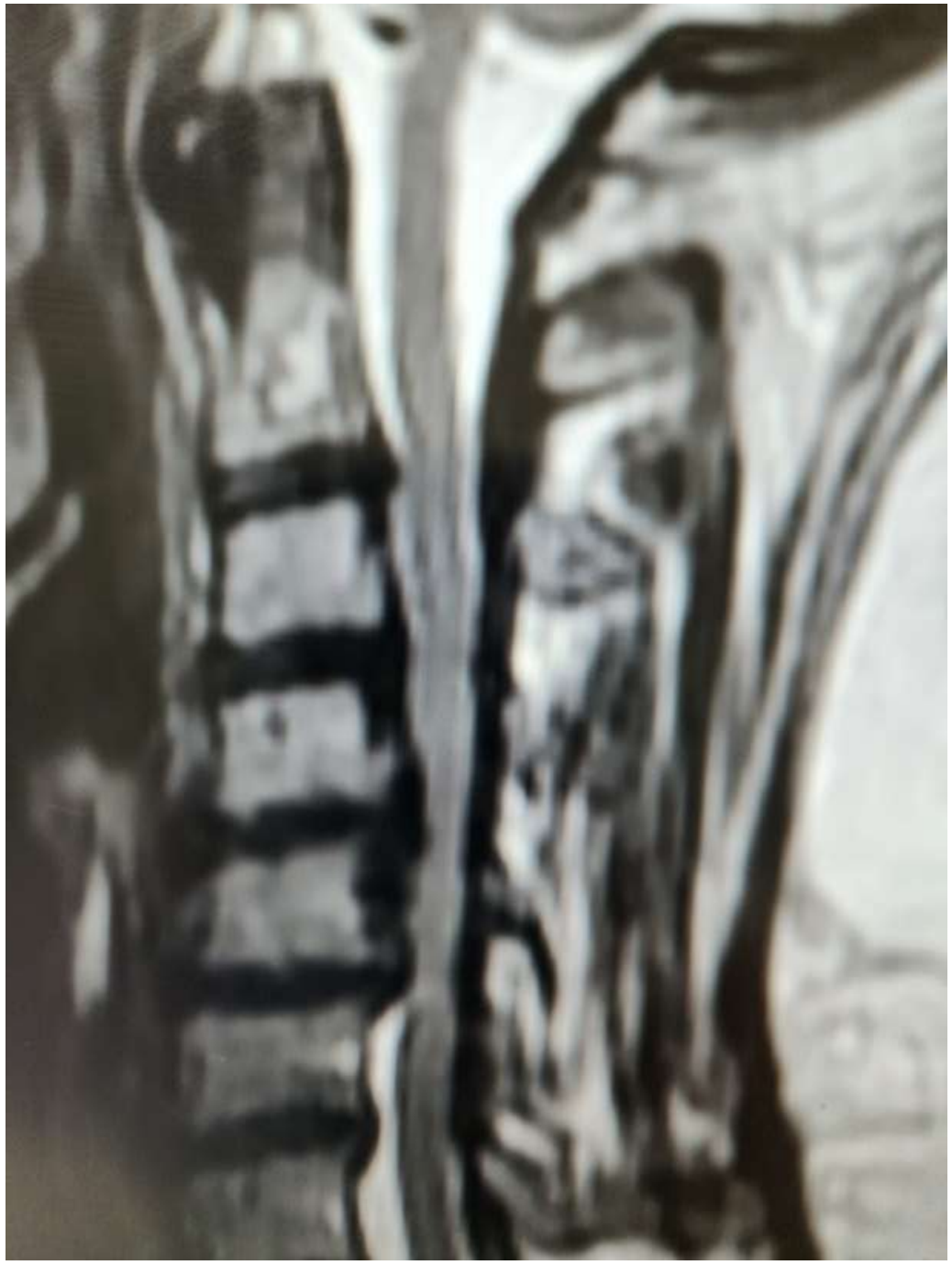


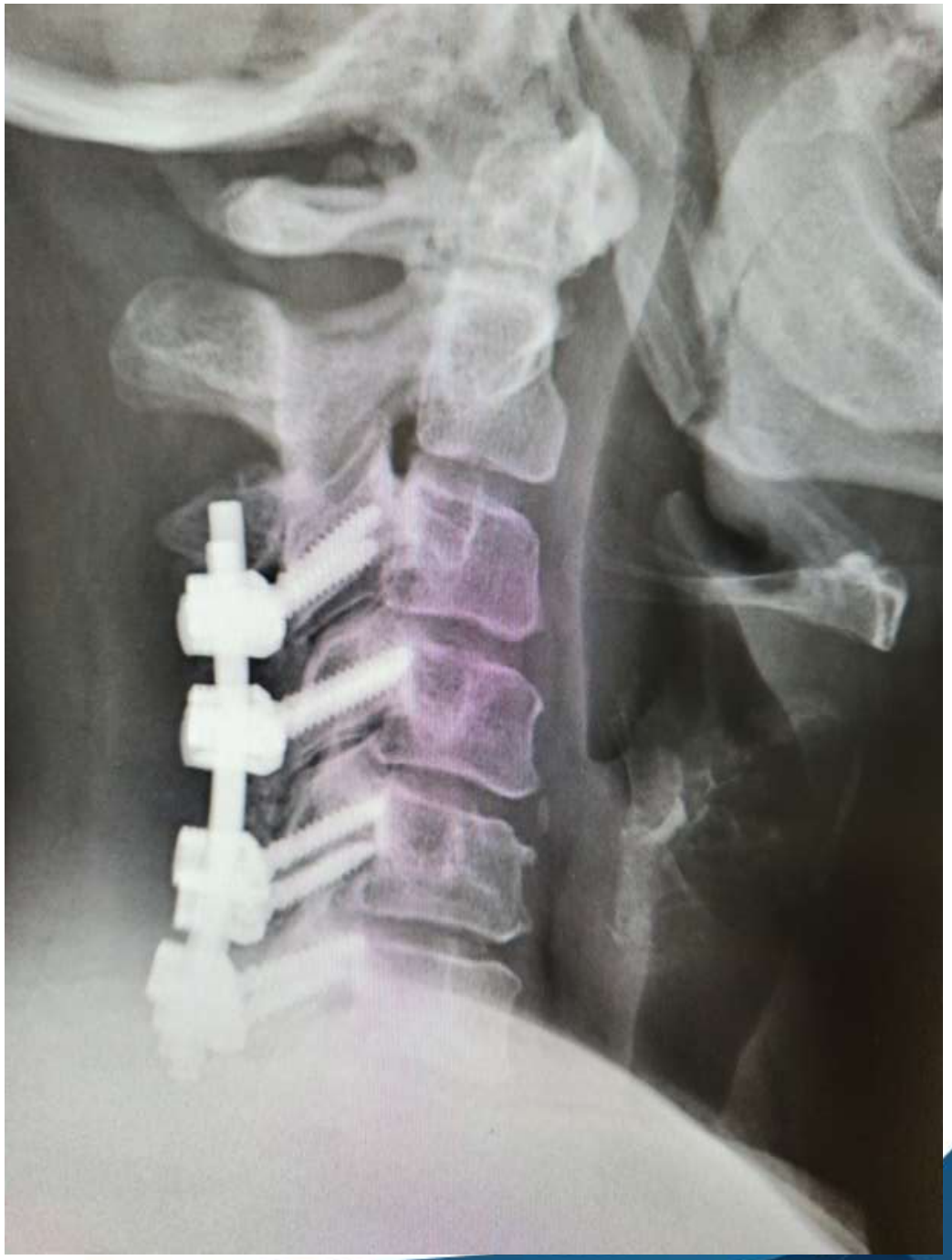
Treatment options

1. Non-operative approach for unfit pts or pts refusing surgery
2. Mainly surgical options – decompression and fusion
   - Anterior approach – up to 2 level stenosis.
   - Posterior approach – more than 2 level stenosis. In patients above 70, simple laminectomy sufficient









In Summary

1. Axial neck pain – very common
2. Important to rule out neurological symptoms/ signs and deficits
3. Remember – infections, inflammatory conditions and tumours
4. Axial neck pain – generally not for surgery, mainly non-operative approach
5. Neck pain with cord/ nerve root impingement – surgical approach depending on duration and severity of symptoms

Thank you for your attention

Ramsay Health Care