

Investigations / Tests

Purpose:

1. To confirm a clinical diagnosis
2. To help formulate a plan of management

MRI

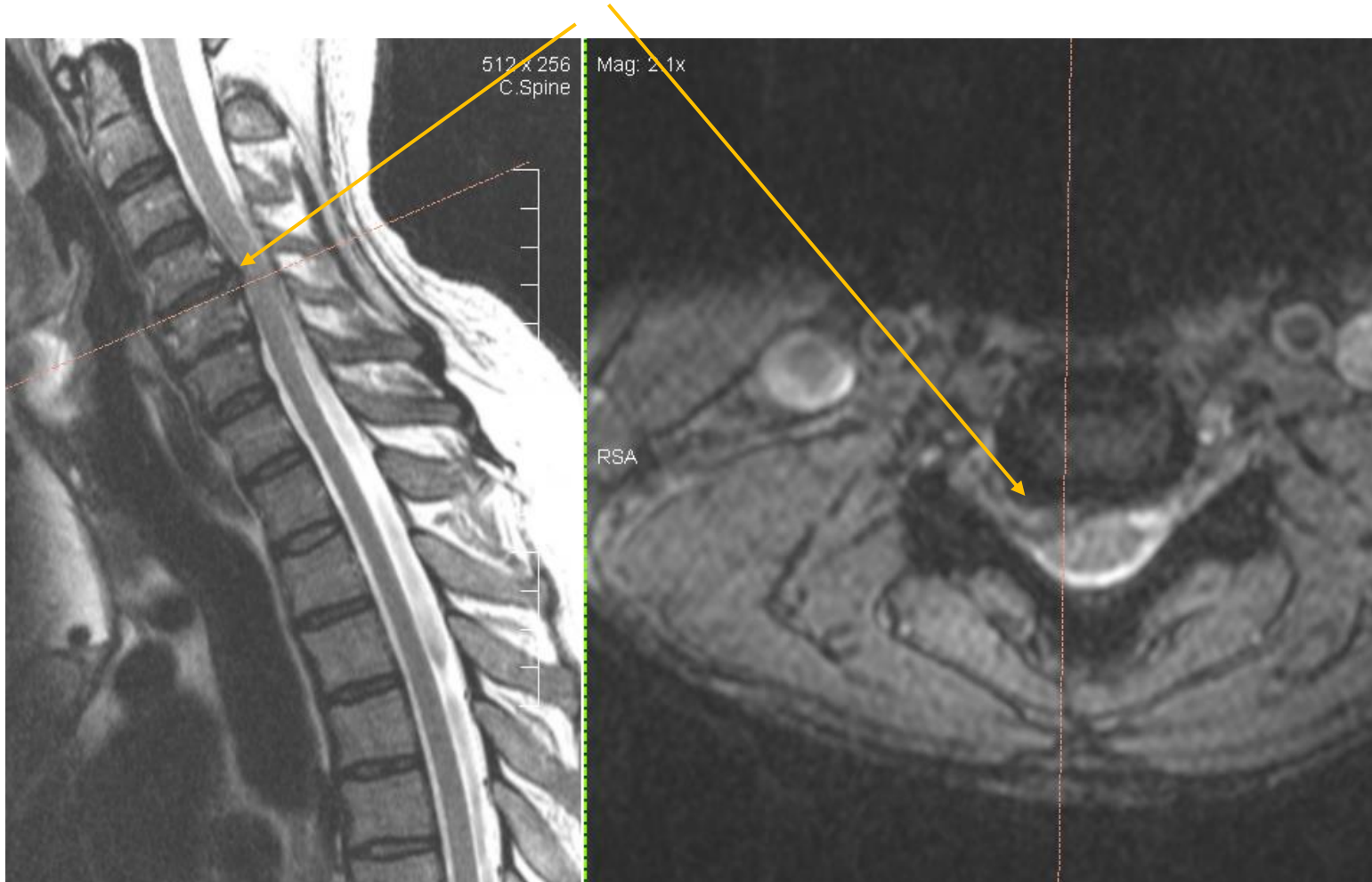
- Excellent for providing structural information
- Good for demonstrating pressure on spinal cord and nerve roots
- Good for demonstrating infiltrative disease in bone
- No radiation
- Upright and Open MRI scanners for claustrophobic patients
- Very few implants preclude MRI, even modern pacemakers can be MRI conditional

MRI - pitfalls

- Very few implants prevent MRI
- Metal in nearby bone can cause artefact
- Precise clinical details can help the reporting radiologist
 - Scanty details result in everything on the scan being described – most of these features are part of the normal ageing process in the spine
- MRI images are readily degraded by motion artefact
- CT gives excellent information on the bones
- If MRI is contra-indicated, CT myelography may be required

MRI example

C4/5 Disc Prolapse, Right brachialgia



X-rays

- Very limited value for diagnostic reasons
- I use dynamic x-rays for pre-operative planning to assess motion at each segment to determine the best operative approach – anterior (from the front) and fusion or disc replacement, or posterior (from the back).
- Angles measured:
 - Range of motion at index level (planned operation level)
 - Range of motion at level above index level
 - Range of motion C2-C7
- Post-operative x-rays are useful for:
 - implant position
 - confirmation of preservation of motion in disc replacement surgery
 - Assessment of progression of adjacent segment disease after fusion

Dynamic x-rays – 1y postop cervical disc replacement



Neurophysiology

Nerve conduction studies (NCS) and Electromyography (EMG)

- “Electrical” tests
- NCS - can identify
 - medical conditions affecting the nerves eg diabetes
 - Peripheral nerve entrapment eg carpal tunnel syndrome
- EMG – recording from fine needles in the muscles
 - Patterns can suggest which nerves from the spinal cord are affected
 - Whether the nerve injury is active or not
 - Whether healing is occurring or not
- These tests are undertaken by a medical consultant and therefore have a fee attached (Procedure code 22023)