Educational Cases in MR Spinal Imaging
Dr J Walsh, Dr P Brown and Dr I Craven. Leeds Teaching Hospitals NHS Trust

To meet the core competences in the RCR curriculum regarding StR exposure to spinal MR imaging in our tertiary neurosciences centre, the on-call spinal MRI (OCSM) has been an StR-led service since July 2016.

Consultant Neuroradiologist support is available and scans are promptly reviewed in a similar fashion to on-call CT provision.

There has been high concordance between StR and subsequent consultant reports; see ‘Commencing an StR-led on call spinal imaging service in a tertiary neurosciences centre’ RCR 2017 poster presentation.

Here we review cases where additional findings were found by the reporting Consultant with relevant learning points.

History: 43yo, rode mountain bike into tree, reduced power both arms.

Initial findings: Chronic broad based disc herniation at C3/4

Additional findings: High signal within the spinal cord but no expansion.

Diagnosis: Central cord syndrome

Learning point:
1. Central cord syndrome can occur in the absence of fracture or ligamentous injury due to underlying chronic pathology.

History: 24yo female with lower back pain and bilateral leg numbness.

Initial findings: No cauda equina compression. Abnormal dorsal CSF signal – possible spinal AVM

Additional findings: CSF pulsation artefact noted dorsi ally.

Diagnosis: Normal

Learning point:
1. Multiple MRI artefacts can affect image interpretation
2. Spinal AVMs have dilated serpiginous flow voids on T2

Important considerations in OCSM
• There may be underlying chronic pathology or ‘hidden’ information on planning sequences
• It is important to remember and understand MRI artefacts including how they can be helpful, i.e. T2 flow voids
• Contrast enhanced sequences can help to differentiate difficult cases

History: 31yo, RTC. C4 fracture on trauma CT.

Initial findings: C4 fracture extending through right transverse foramina with associated soft tissue injury

Additional findings: Absent right vertebral artery flow void

Diagnosis: Right vertebral artery dissection

Learning points:
1. Vessels are an important review area
2. CE MRA may be useful to assess for vascular injury

History: 37yo male, 3/52 history of back pain following trauma.

Initial findings: Enhancing, extradural mass extends L4–S2 with cauda equina nerve roots compression.

Additional findings: Review of planning images reveals a liver lesion.

Diagnosis: Plasmoblastic lymphoma/myeloma (biopsy proven).

Learning points:
1. Planning images can reveal important additional information and should always be reviewed.
2. A spinal mass and parenchymal disease is indicative of disseminated malignancy

History: 37yo male, 3/52 history of back pain following trauma.

Initial findings: Enhancing, extradural mass extends L4–S2 with cauda equina nerve roots compression.

Additional findings: Review of planning images reveals a liver lesion.

Diagnosis: Plasmoblastic lymphoma/myeloma (biopsy proven).

Learning points:
1. Planning images can reveal important additional information and should always be reviewed.
2. A spinal mass and parenchymal disease is indicative of disseminated malignancy