Although T2-hyperintense signal abnormality of the spinal cord can have myriad etiologies, neuroimaging can provide specific diagnoses or considerably narrow the differential diagnosis in many cases. Intradural-extramedullary lesions compressing the spinal cord have a limited differential diagnosis and are usually benign; meningiomas and schwannomas are most common. Extradural lesions can often be specifically diagnosed. Disk herniations are the most commonly encountered mass of the epidural space. Cervical spondylotic myelopathy can cause a characteristic pattern of enhancement, which may be mistaken for an intrinsic myelopathy. A do-not-miss diagnosis of the extradural compartment is idiopathic spinal cord herniation, the appearance of which can overlap with arachnoid cysts and webs. Regarding intrinsic causes of myelopathy, the lesions of multiple sclerosis are characteristically short segment but can be confluent when multiple. Postcontrast MRI can be particularly helpful, including when attempting to differentiate the long-segment myelopathy of neurosarcoidosis and aquaporin-4 (AQP4)-IgG-seropositive neuromyelitis optica spectrum disorder (NMOSD) and when characterizing spinal cord tumors such as primary neoplasms and metastases. Spinal dural arteriovenous fistula is another do-not-miss diagnosis, with characteristic MRI features both precontrast and postcontrast. Tract-specific white matter involvement can be a clue for diseases such as subacute combined degeneration, paraneoplastic myelopathy, and radiation myelitis, whereas gray matter-specific involvement can suggest conditions such as cord infarct, viral myelitis, or myelin oligodendrocyte glycoprotein (MOG)-IgG associated disorder.

Summary: Knowledge of the neuroimaging findings of the many causes of spinal cord and cauda equina dysfunction is critical for both neurologists and neuroradiologists. A structured approach to lesion compartmental location and imaging feature characterization is recommended [1].

The spinal cord is poorly visualized on CT images but is well visualized in MRI images. However, implants used for spinal stabilization can produce artifacts on the MRI images which can interfere with identification of the cord. CT myelography in conjunction with CT simulation helps to clearly delineate the cord.

CT myelogram in conjunction with CT simulation is particularly useful in cases where the tumor margin is very close to the cord and spinal implants are causing distortion of magnetic resonance images [2].

1)
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