## **Neurosciences Quiz**

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### Posterior epidural migration of a sequestrated lumbar disc fragment

### **Clinical Presentation**

A 60-year-old women presented with a history of low back pain and numbness of both legs of 7 days duration, with progressive urinary disturbance, and constipation. Neurological examination shows hypoesthesia in L3-L4 and S1-S2 bilateral dermatoma with "anaesthesia en selle". Straight leg raising test was positive on the left. Somatic examination revealed no abnormality. No fever was documented. Laboratory blood study showed no abnormalities. Chest x-ray was normal, and plain x-ray of lumbars was normal. An MRI study of the lumbar spine before and after intravenous contrast is shown in Figures 1 & 2.



Figure 1 - Sagittal MRI on a) T1-weighted image and b) T2weighted image showing a hypo intense mass on T1 and T2 images posterior to the dural sac, at the L2-L3 level.



Figure 2 - Lumbar spine MRI on a) sagittal proton density sequence image and b) axial view; after intravenous infusion of contrast, showing an hypodense mass with intense rim enhancement posterior to the dura.

### **Question:**

1. What is the diagnosis?

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# Answer

Preoperative diagnosis was epidural abscess, or neoplasm. An urgent lumbar laminectomy was performed. At surgery, the lesion proved to be a massive extruded disc fragment adherent to the dura. Histological study confirmed the discal nature of the mass. Postoperative recovery was unremarkable with total recuperation of neurological deficit 3 weeks later.

### Discussion

Sequestered disc fragments account for 25% of all disc herniations.<sup>1-4</sup> It most often migrates into the anterior epidural space. Rostral, caudal, and lateral migration, are the most clinically important modes of this migration.<sup>1,4</sup> Occasionally sequestered disc fragments may migrate to the posterior epidural space of the dural sac.<sup>1,3</sup> This condition is rare, and posterior migration of the free fragments causing cauda equine syndrome is exceptionally rare. Disc fragment migration patterns are generally limited by the attachments of the posterior longitudinal ligament, and its associated "midline septum" and "peridural" or "lateral membrane" and the nerve root itself.<sup>1-3</sup> Preoperative diagnosis is difficult. The epidural fat is vascular, the presence of fragment in this space will induce an inflammatory response with granulation tissue and neovascularization around the extruded tissue, causing a ring enhancement with gadolinium in the MRI scan.<sup>1</sup> This may aid in the preoperative diagnosis to other common epidural lesions as neoplasia, abscess, or hematoma.<sup>1</sup> Rare lesions, such as synovial cyst from the facet joint, pigmented villonodular synovitis, or hypertrophic ligamentum flavum may be considered. Awareness of these MR imaging findings can help in the diagnosis of posterior epidural disk migration.

#### References

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