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Spine

Simultaneous occurrence of spinal epidural abscess and disk herniation causing irreversible neurologic deficits: A case report and review of the literature

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A 69-year-old male patient was admitted to our clinic with a left leg radiating pain and a gradually developing back pain over a 4-week period. Three weeks before the admission, he also noticed left leg weakness. He was diagnosed with epileptic seizures 2 years before the admission and was medically treated with 500 mg of levetiracetam twice daily otherwise, he was healthy. He had difficulties to urinate several days before admission. The neurologic examination revealed paresis for hip flexion graded 3 of 5, knee extension graded 4 of 5, paralysis for ankle dorsiflexion and toe extension (clinical drop foot), paresis for plantar flexion graded 4 of 5, and loss of sensation in the first digit on the same side. The patellar and Achilles reflexes were absent on the left side.

Magnetic resonance imaging (MRI) of the lumbar region performed 1 week earlier by the general practitioner revealed disk herniation on the left side at the L5-S1 level (Fig. 1). The herniated disk migrated cranially and could therefore affect both L5 and S1 nerve roots.

The left L4 nerve root appeared swollen, emitting higher signal intensity compared with the right nerve root (Fig. 2). Unfortunately, the first MRI examination was performed without intravenous contrast and standard blood samples were not taken at admission.

A microdiscectomy was performed the same afternoon at the level of L5-S1 on the left side to treat the radiating pain and to see if the paresis could improve even though the

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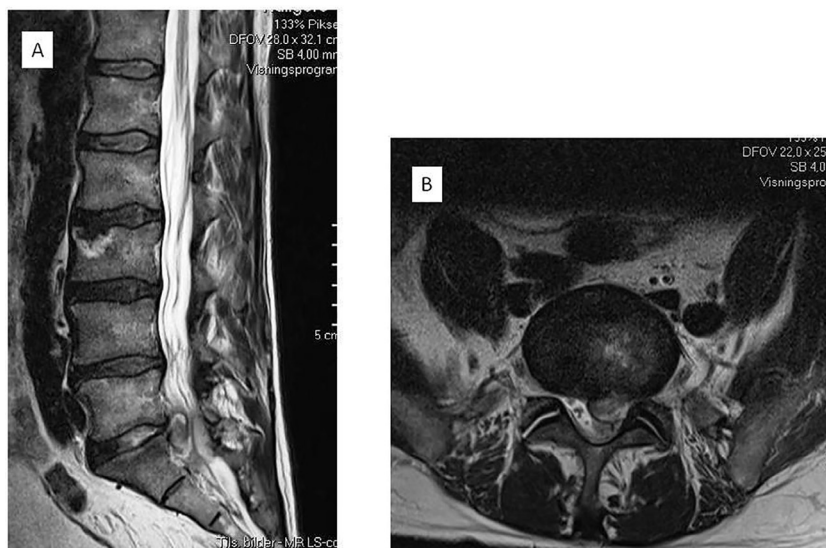


Fig. 1 – Magnetic resonance imaging of the lumbosacral column. T2-weighted sagittal (A) and axial (B) images showing disk herniation at level L5-S1 migrating cranially that could affect both the left L5 and S1 nerve roots with compression of the dural sac.

symptoms had lasted 3 weeks. Intraoperatively, a collection of pus was found in the epidural room. Tissue samples were collected for microbiological analysis and revealed beta-hemolytic group B *Streptococcus*. The day following surgery, the left leg radiating pain completely subsided; however, the paralysis for ankle dorsiflexion and toe extension persisted as the extension deficit of the knee worsened. The patient was not able to empty the urinary bladder adequately, which required the installation of a urinary catheter. There was no obvious explanation for the worsening of knee extension paresis graded 2 of 5 after the surgery, compared with 4 of 5 before the surgery. During a re-evaluation of the first magnetic resonance (MR) images, the epidural abscess was detected dorsally at level of L5-S1, which was not evident preoperatively (Fig. 3).

Two days after the surgery, an MRI follow-up examination of the lumbar spine with intravenous gadolinium showed a lesser residual of the L5-S1 herniated disk. The left L4 nerve root was swollen, as seen on the preoperative MR images, with contrast enhancement, confirming the persistent nerve root inflammation (Fig. 4). There were no signs of spondylitis or spondylodiscitis at any level of the lumbar spine. Because of the complete cessation of the radiating pain postoperatively, it was decided not to proceed with a secondary surgery.

The following day after the surgery, the laboratory tests showed an elevation of the erythrocyte sedimentation rate of 106 mm/h, the C-reactive protein of 260 mg/L, and the leukocytosis of 13.9×10^9 per liter. Because of the elevated infection parameters and intraoperatively cultured beta-hemolytic group

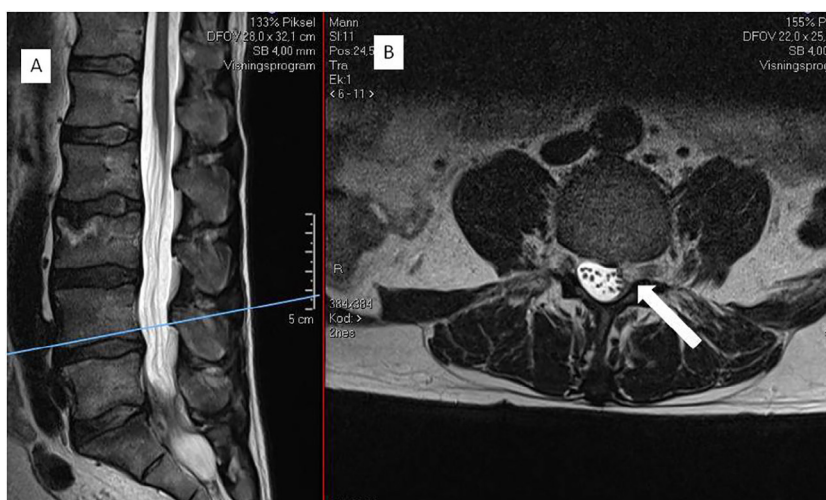


Fig. 2 – Magnetic resonance imaging of the lumbar spine. T2-weighted sagittal (A) image of level L4-L5 with the left L4 nerve root appearing to be swollen with higher signal intensity (arrow) compared with the right nerve root on the axial image (B).

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