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Dorsal transdural migration of a sequestered intradural lumbar disc

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Title page

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A 43 year old man presented with low backache since 3 years and radicular pain in the left lower limb since one year. Neurological examination revealed a positive straight leg raising test at 60 degrees on the left. MRI (Fig 1a, b) showed a left L5-S1 paracentral sequestered disc prolapse compressing the thecal sac and nerve root. A contrast MRI was done to rule out an intradural tumour. The sequestered fragment demonstrated peripheral enhancement (Fig 1c). At surgery, following a L5 laminectomy, a large sequestered disc fragment (Fig 2a) was found extradurally, just beneath the ligamentum flavum. Part of this fragment had to be extracted from within the thecal sac, through a large defect in the dorsal dura (Fig 2b) which the fragment had created. There was dense fibrosis around the roots on either side within the thecal sac, and this had probably sealed off any possible cerebrospinal fluid (CSF) leak. A rent in the ventral dura was identified and repaired. Postoperatively, his radicular pain subsided. Intradural lumbar disc herniations (ILDH) are rare, accounting for less than 0.5% all herniated discs. The commonly affected levels are L4–L5 (55%), L3–L4 (16%) and L5–S1 (10%). The average age of occurrence is between 50 and 60 years, with a male preponderance. Common presentations are with cauda equina syndrome or with radiculopathy simulating an intradural tumor. Theories for ILDH include congenital fusion or formation of adhesions between the posterior longitudinal ligament and the ventral dura due to local inflammatory

reactions. The resulting adhesions result in perforation of the ventral dura and prevent lateral migration of the fragment. Gadolinium-enhanced MRI scan is useful to differentiate a herniated disc from discitis or tumor. The presence of circumferential contrast enhancement, like in our case, raises the possibility of pathologies like an abscess or epidural metastasis. Optimal treatment envisages laminectomy and durotomy, careful dissection of the roots, removal of all the intradural ruptured disc material and repair of the dural defect to prevent CSF leakage. In none of the previously reported cases of ILDH did the intradural fragment migrate out dorsally in the manner described in our report.

The long standing sequestered disc fragment in our patient had probably induced a chronic inflammatory erosive process first in the ventral dura, and later, in the dorsal dura as well. The arachnoiditis-like picture seen intraoperatively, with an absence of CSF leak from within the thecal sac, lends credence to this proposition.

Figure legends

Fig. 1.(A) MRI T2W sagittal and (B) axial images showed a left L5-S1 paracentral sequestered disc prolapse compressing the thecal sac and nerve root. (C) Contrast MR axial images showed peripheral enhancement of the sequestered fragment.

42 Fig. 2. (A) A large sequestered disc fragment was found extradurally (B)
43 extracting the disc fragment from within the thecal sac, through a large defect in
44 the dorsal dura which the fragment had created.



