

Case Report & Case Series

An intradural lumbar disc fragment with free migration: A case of a missed intradural disc herniation



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ABSTRACT

Introduction: Intradural lumbar disc herniation (ILDH) is a very rare pathological entity. The pathomechanisms and the natural course remain unclear.

Case presentation: The authors present the case of a 58-year-old German male with repetitive microdissectomies (MD) and intraoperative missed diagnosis of ILDH. The patient underwent standard MD due to lumbar disc herniation (LDH) at the level L4/5. Incidental durotomy (ID) was sealed with a ventromedial patch. Postoperative course was uneventful. 14 months later the patient presented with a L4 radiculopathy, having his second MD at the level L3/4. At this point the radiological images showed already a free floating intradural fragment at the level S1, clinically not significant. As in the previous surgery, the postoperative course was uneventful. After 18 months, he presented again complaining of low back pain and electric-like attacks of pain along the right L5 root for the prior five months. Contrast-MRI revealed that the known intradural disc-mass migrated from S1 to the level L4/5. A left L4 hemilaminectomy was performed. The durotomy identified a hard, white, shiny mass. The patient was pain-free until the last follow-up at 13 months.

Conclusions: Intraoperative manipulation of disc fragments in the presence of an ID potentially leads to iatrogenic ILDH.

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1. Introduction

Intradural lumbar disc herniation (ILDH) is a unique complication of relatively frequent spinal degenerative processes with incidence ranges between 0.19 and 1.1%. The pathogenesis of ILDH is not well known [1–4]. Naturally, a disc herniation may penetrate the posterior longitudinal ligament and the anterior wall of the dura and the fragment of disc migrate intrathecaly [5]. Iatrogenic liberation of disc fragment intrathecaly has been also reported after endoscopic lumbar discectomy [6]

Prompt operative treatment of ILDH is highly advocated.

The optimal operative treatment remains a challenge, since the confirmation of diagnosis can often only be accomplished intraoperatively and not anticipating this possibility can lead to missed intradural disc fragments. The present case is another example of a missed intradural disc herniation after a L4/5 microdissectomy. From our case, we learn

that a missed intradural disc fragment can be clinically dormant for years and that migration is a factor leading to subsequent need of surgical extraction, and that a finding of an incidental durotomy during a first ever surgery should ALWAYS makes one wonder whether maybe an intradural disc is also present. With our case we propose potential mechanism of the missed diagnosis and pathological factors for migration of an intradural disc.

2. Case presentation

January 2012, a 58-year-old German male patient presented in our outpatient clinic complaining of low back pain radiating to the right leg along L5 root for the prior 12 months. Physical examination demonstrated an active right ipsilateral straight leg raising sign at approximately 30 degrees as with real cross straight leg raising sign; weakness of the right extensor hallucis longus and toe extensors graded as a 4/5 and hypesthesia in the right L5 dermatome. Deep tendon reflexes were preserved and normal bilaterally at the knee and the ankle. The patient had no fasciculations, atrophy or upper motor neuron signs. The MRI of the lumbar spine showed a lumbar disc herniation at level

Abbreviations: ID, incidental durotomy; ILDH, intradural lumbar disc herniation; LDH, lumbar disc herniation; MD, microdissectomies; MRI, Magnetic Resonance Imaging.

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L4/5. After failing conservative care, a right L4–5 discectomy was performed.

After interlaminar approach, intraoperative was the disc herniation much bigger compared with MRI scan with massive adhesions along the dura. Standard exploration of the nerve structures showed a great disc material ventromedial to the dural sac with completes ID and CSF leakage. Removal of the disc after separation of the dura from the intervertebral disc with gentle medialization of the dural sac was performed.

Dural tear was closed with a patch (TachoSil) after surgery; the patient was pain-free for 12 months (Fig. 1).

After 14 months, he presented in our outpatient complaining of low back pain and a right leg pain along the L4 root since 2 months. The MRI of the lumbar spine showed a lumbar disc herniation at level L3/4 and an intradural mass at the level S1 without any symptoms.

At this moment, the retrospective diagnosis of ILDH of the first surgery was made. Our explanation of the free intradural disc fragment

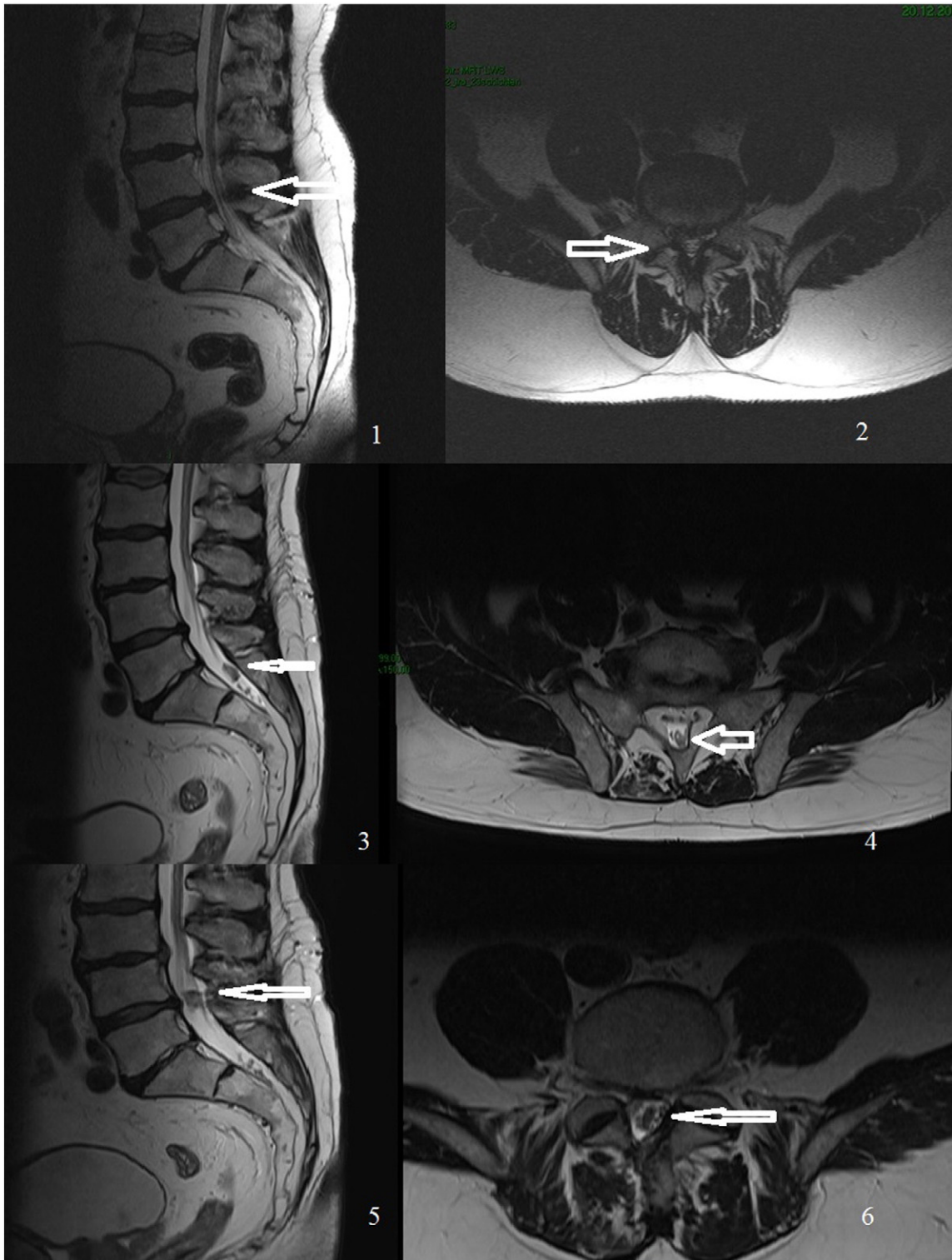


Fig. 1. Preoperative MRI showing a disc herniation at level 4/5 re, 3 & 4 MRI after seven months from surgery showing an intradural mass at the level S1, 5 & 6 2-years after the surgery showing the same position of the intradural disc herniation.

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