



Foraminal disc herniation Th9-Th10 mimicking abdominal pain

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Thoracic disc herniations (TDH) requiring surgery are rare. They usually present with pain and/or myelopathy. Only 6% are wide lateral, either intraforaminal or extraforaminal. A 52-year-old patient presented with chronic mid-thoracic pain, radiating along the left 9th and 10th ribs. After nephrologic and pancreatic diseases had been excluded, a CT-scan showed a far-lateral calcified TDH in the left Th9-Th10 neuroforamen, compressing the nerve root. Through a paramedian muscle-splitting approach, microscopic drilling of the medial part of the Th9-Th10 facet joint was performed, allowing exposure of the nerve root and removal of a soft hernia, a mix of degenerative debris and harder calcified aggregates. Postoperatively, the pain disappeared immediately.

The authors conclude that intraforaminal TDH may be misleading and mimic pain from abdominal origin. Even if calcified, these lesions may be soft, not adherent and thus easily resectable : this may allow a simpler approach. A microscopic transfacet route offers a minimally invasive approach to the neuroforamen.

Keywords : thoracic disc herniation ; disc calcification ; discogenic pain.

INTRODUCTION

Symptomatic thoracic disc herniations (TDH) requiring surgery are considered rare. Pain, localised axial or radicular, affects 76% of the patients while clinical signs of myelopathy are pres-

ent in 61% of the cases (15). Preoperative radiological evaluation reveals that 94% of these lesions are localised inside the spinal canal, and that only 6% are far lateral, and more specifically intra- or extraforaminal (15).

The current report illustrates not only an unusual clinical picture of a thoracic disc herniation, but also the interpretation of scans showing a calcified herniated disc and, from a technical point of view, the advantage of a microscopic transfacet approach.

CASE REPORT

A 52-year-old patient with no relevant medical history besides an episode of acute thoracic pain two years before while unloading his car, presented with acute dorsal mid-thoracic pain, radiating along the left 9th and 10th ribs towards the flank. The pain was worse in the sitting position. It progressively

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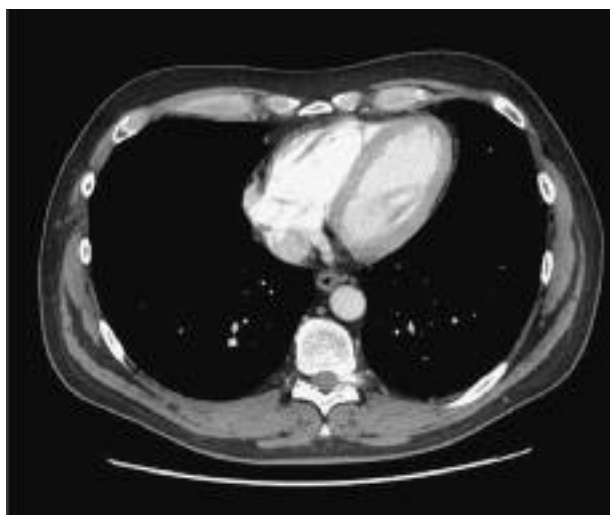


Fig. 1. — Preoperative axial CT-scan of the lower thoracic spine, showing a dense calcification in the left Th9-Th10 neuroforamen.

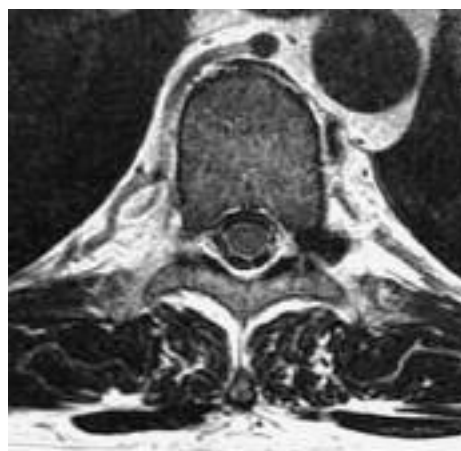


Fig. 2. — Preoperative axial MRI-scan of the lower thoracic spine, showing a “far lateral”, and more specifically an intraforaminal left Th9-Th10 disc herniation compressing the root of the 9th intercostal nerve.

became unbearable, causing insomnia and diminished concentration. The neurological examination was normal.

The patient was first evaluated for kidney stones, but the echogram failed to reveal any abnormalities. Subsequently, a chest /abdomen CT-scan was performed to rule out pancreatic cancer. Although no lesion was found in the pancreas, close examination of the thoracic vertebrae showed a calcification in the left Th9-Th10 neuroforamen (fig 1). The MRI-scan showed that this calcification was extending laterally from the disc, clearly compressing the root of the 9th intercostal nerve ; it had the characteristics of a “far lateral” intraforaminal disc herniation. There was no extension of the herniation into the spinal canal and no spinal cord compression (fig 2). The patient was finally referred to the authors’ neurosurgical department, 5 months after the onset of the pain. An intraforaminal infiltration with steroids yielded temporary pain relief during a few days. As the pain recurred, surgical removal of the herniation was decided.

Under general anaesthesia, a left paramedian (3 cm off the midline) muscle-splitting microscopic approach was used. Drilling of the medial part of the Th9-Th10 facet and removal of the lateral aspect of the ligamentum flavum allowed perfect exposure of

the 9th thoracic nerve root. The hernia consisted of a soft degenerative material, harbouring harder calcified aggregates. Microscopic dissection allowed complete removal of the disc fragments, release of the nerve root, exploration of the neuroforamen with a hooked dissector and partial exploration of the disc space. No exposure of the dura was necessary. As most of the facet joint was left untouched, there was no need for osteosynthesis. A postoperative CT-scan confirmed the minimal resection of the facet joint and the complete removal of the extruded fragment (fig 3). Pathological analysis of the disc fragments confirmed severe degenerative changes and multiple calcifications (fig 4). Postoperatively, the recovery was uneventful, and the pain disappeared completely, without neurological complications. The patient was allowed home three days after surgery.

DISCUSSION

In contrast with median thoracic disc herniations, which usually present with symptoms of spinal cord compression, the clinical picture of far-lateral thoracic disc herniations in the lower thoracic spine may be misleading, due to the common absence of neurological findings. Patients have been reported



Fig. 3. — Postoperative axial CT-scan of the lower thoracic spine : note the minimal resection of the facet joint, and the complete removal of the extruded fragment.

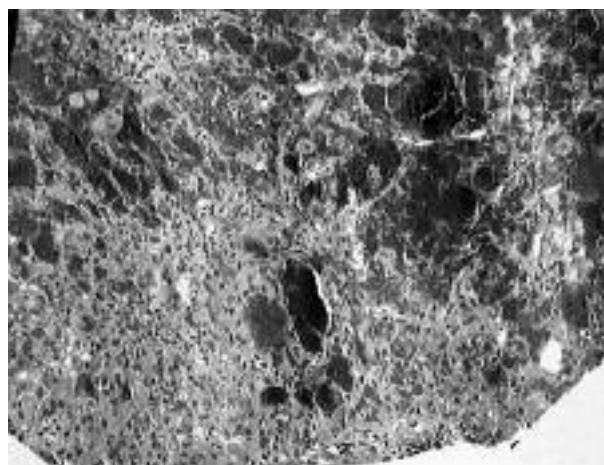


Fig. 4. — Degenerative discal tissue showing multiple dark and dense calcifications (haematoxylin-eosin stain).

with Th11-Th12 thoracic herniations mimicking acute lumbar disc disease (9) ; or with Th10-Th11 herniations, mimicking an acute ureteric colic, or causing flank pain (1,11). This polymorphic presentation may cause delay in diagnosis. In the present case, the pain was at first thought to be urological, then pancreatic, and a diagnosis was only reached after 5 months. Lower thoracic spine disc herniations should therefore be considered in the differential diagnosis of non-spinal conditions, especially if early assessments do not reveal the cause of the pain.

Radiologically, intradiscal calcifications have been reported in 65% of patients presenting with thoracic disc herniation (15). In this case CT-images of the thoracic spine showed a very hyperdense disc herniation that could be interpreted as a *hard*, calcified, possibly adherent, “old” structure. This contrasted strikingly with the intraoperative findings of *soft* degenerative debris mixed with calcium crystals which were not adherent, so that they could easily be removed. This phenomenon has been previously reported by Paolini *et al* (12) who reported two intraforaminal thoracic disc herniations, which appeared to be densely calcified on the preoperative imaging studies, but were found to be soft herniations intraoperatively. This may allow the surgeon to choose a simpler approach.

Sekhar and Janetta (14) already reported in 1983 that being familiar with various surgical approaches is important to treat the possible locations of thoracic disc herniations. Median dorsal laminectomy approaches should be avoided as they carry a significant risk of paraplegia (2,8). Larson’s lateral extracavitary approach (or costotransversectomy) includes removal of transverse process, articular facet, pedicle and rib (4,7,10). Imaging-guided costotransversectomy has been reported to aid visualisation of dura and disc during surgery (6). A paravertebral retropleuric microsurgical approach may allow less bone resection (3). This vast choice of surgical approaches nowadays enables a tailor-made surgery depending on the size, location and aspect of the disc herniation (5). The authors chose a very minimal paramedian (3 cm off the midline) muscle-splitting microscopic approach preserving the pedicle and most of the facet joint. A similar alternative could have been the posterolateral microendoscopic discectomy described by Perez-Cruet *et al* (13). More recently, thoracoscopic discectomy has been advocated (2).

If further reports, like the study of Paolini *et al* (12), confirm that lateral disc herniations in the lower thoracic spine are likely to be *soft*, even if appearing calcified on the preoperative CT, this should be taken into consideration in choosing the

least invasive approach, saving transthoracic approaches for median intracanal lesions, and costotransversectomy or retropleuric approaches for far lateral *hard* calcified herniations.

CONCLUSION

This report stresses that an intraforaminal disc herniation may present with misleading symptoms mimicking pain from abdominal origin. Although often calcified, these lesions may be *soft*, not adherent and easily resectable. In the current case, complete resection through a microscopic transfacet approach allowed immediate and definitive disappearance of a 5 months lasting pain.

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