



On-line Case Report

Thoracic disc prolapse presenting with abdominal pain: case report and review of the literature

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ABSTRACT

We report the case of a patient presenting with abdominal pain as a result of a thoracic disc prolapse. The literature is reviewed, highlighting the associated morbidity by the often extensive and invasive procedures patients may undergo when a thoracic disc prolapse presents with abdominal pain.

Keywords: Abdominal pain – Thoracic disc prolapse

The incidence of thoracic disc prolapse is reported to be between 0.15% and 4% of all intervertebral disc prolapses.^{1,2} Due to the rarity of this condition, the presenting symptoms are often attributed to pulmonary, cardiac, gastrointestinal or genito-urinary causes.¹ This can lead to unnecessary investigations and procedures. Moreover, a missed diagnosis can potentially have a high morbidity.¹

We report the case of a 52-year-old woman, who presented with intermittent abdominal pain; for which she was initially investigated by the general surgeons and urologists. A careful review of her abdominal computed tomography (CT) scan revealed a calcified prolapsed thoracic disc. This is a rare cause of abdominal pain, but one which clinicians must be aware of when forming a differential diagnosis.

Case report

A 52-year-old woman presented to the casualty department with a 4-week history of left loin pain radiating to the left groin. The pain was described as having both sharp, intermittent 'colicky' nature, as well as a dull constant component. Initial

abdominal examination revealed only mild left iliac fossa tenderness with no other significant findings.

At the time, it was felt that her symptoms might be due to her irritable bowel syndrome and the patient was discharged from the department. She returned within 9 days, complaining of similar persisting symptoms.

She was admitted to the hospital by the surgical team with the provisional differential diagnoses of diverticular disease, renal colic or simple constipation. A plain abdominal radiograph, intravenous uretergram and CT of the abdomen failed to reveal any significant abnormality.

The symptoms failed to resolve with conservative measures and analgesia. She subsequently underwent a laparoscopy, colonoscopy and cystoscopy. No significant pathology was noted during these investigations, except for mild diverticular disease.

Following these investigations a neurosurgical opinion was sought to evaluate the patient for the possibility of an underlying spinal nerve root pathology.

The neurosurgeon reviewed the patient's history and on examination, was unable to elicit any abnormal findings.

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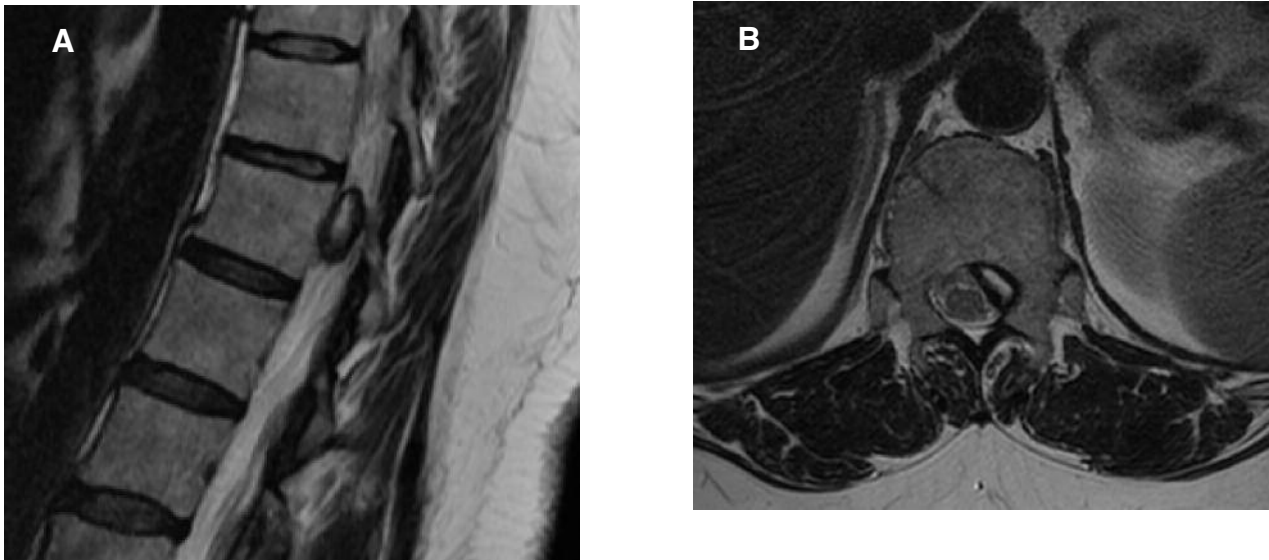


Figure 1 (A) Sagittal and (B) axial T2 images show an intraspinal lesion lying in an epidural left paracentral location at the upper T12 level. It consists of T2 high signal with a thick rim of T2 low signal. It causes distortion of the theca and potential impingement of the left T12 nerve root. The T11/12 disc is noted to be slightly reduced in height.

Magnetic resonance imaging (MRI) of the thoracolumbar spine was performed. This revealed an extradural lesion at the T12 level, with both signal and morphological characteristics that were most in keeping with a calcified disc fragment. The disc had extended inferolaterally into the left lateral recess where it was causing impingement of the left T12 nerve root (Fig. 1). Retrospective review of the CT scan confirmed a calcified lesion emanating from the T11/12 disc and extending inferiorly within the spinal canal, consistent with a calcified disc extrusion (Fig. 2).

The patient underwent a thoracic hemilaminectomy and microdiscectomy. Intra-operatively, calcified degenerative disc

fragments were removed from below and around the affected nerve root, allowing for adequate nerve root decompression.

Postoperatively the patient's pain dissipated immediately and she was discharged 2 days later. At her follow-up appointment, she reported no further complications or recurrence of her symptoms.

Discussion

Symptomatic thoracic disc prolapse is a rare pathology, reported to occur in 1 per million per year,^{2,3} accounting for 0.15–4% of all symptomatic disc prolapses.^{1,2} It occurs more

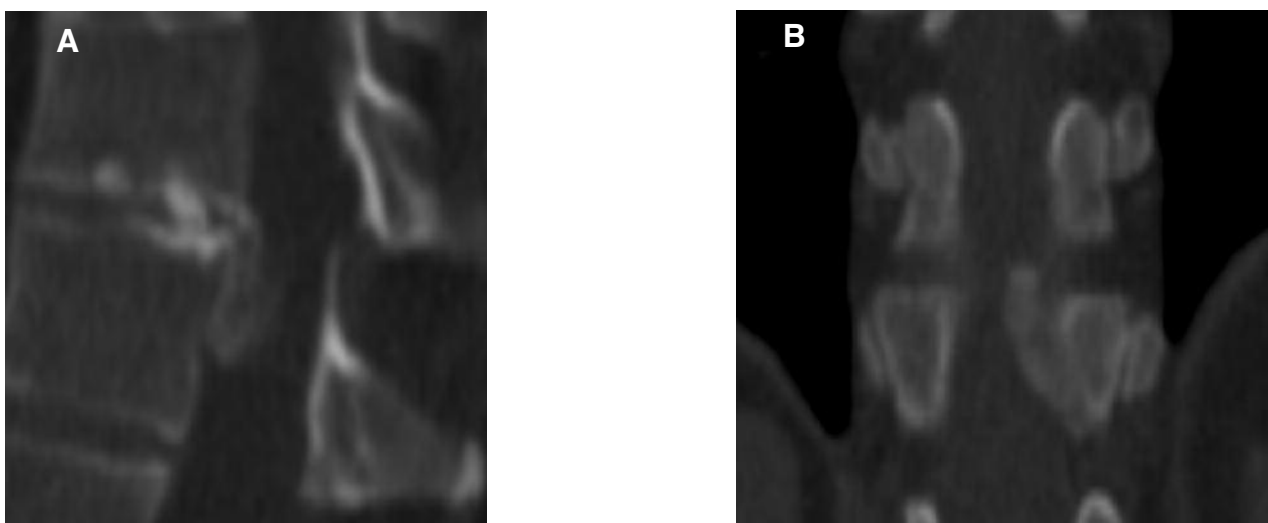


Figure 2 (A) Sagittal and (B) coronal CT reformats show that the abnormality is contiguous with the T11/12 disc and is consistent with an extruded disc, emanating from the T11/12 level. It shows heavy calcification of its periphery (corresponding to the T2 low signal shown on MRI).

commonly in those aged 30–50 years, with a male:female ratio ranging from 1.5:1 to almost equal.^{1–3} Wood *et al.*⁴ reported 37% of the subjects in their study to have asymptomatic thoracic disc prolapse evident on MRI.

Up to 75% of thoracic disc prolapses occur below T8, with T11/12 being the commonest level.^{1–3} Disc calcification is common and is reported to occur in up to 65% of cases.² As in our case, calcified discs can fragment with migration of these fragments resulting in compression of the nerve roots.

Pain is the commonest symptom associated with thoracic disc prolapse.^{1,2} Typical thoracic spinal pain can be unilateral, bilateral or radicular.^{1,2} Its nature can be variable – sharp, cutting, shooting, constant or intermittent.^{1,2} Pain can also present as non-spinal pain including abdominal pain, testicular or groin pain, upper limb and cardiac pain.^{1,5–9}

Abnormal neurological symptoms are the second most common presentation.^{1–3} These include, sensory (paraesthesia, dysaesthesia and numbness), motor and bladder or bowel disturbance.^{1–3}

There are few case reports describing abdominal pain, resulting from a thoracic disc prolapse.^{5–9} These indicate that there is no consistent mode of presentation of the pain in its nature, site or duration. In the case we have described, the site (left iliac fossa) and nature of the pain (intermittent or ‘colicky’) has, to our knowledge, not been previously reported.

As demonstrated in the case, many of these patients undergo unnecessary invasive procedures and surgery for suspected intra-abdominal or pelvic pathology, before a thoracic disc prolapse is diagnosed (e.g. endoscopic retrograde cholangiopancreatography,⁸ laparoscopy,⁹ laparotomy,⁵ thoracotomy,⁵ hysterectomy and salpingio-oophorectomy,⁵ appendicectomy,⁶ cholecystectomy⁷ and Roux-en-Y pancreaticojejunostomy³).

MRI is currently considered to be the most informative method of investigation, though plain X-ray and CT scanning or myelography may also be used to aid diagnosis and treatment.^{3,4,10}

The management of thoracic disc prolapse may be determined by the symptoms. Pain without any neurological abnormalities may initially be amenable to non-operative management, with non-steroidal analgesia and physiotherapy.^{2,11} Brown *et al.*¹¹ reported that over 75% of their case series returned to normal activity with conservative management alone.

In patients with severe intractable pain and neurological symptoms, surgical management is advocated.^{2,11} Early studies reported the use of laminectomy for excision of thoracic disc to be suboptimal.^{1–3,8,12} Following

these results, alternative safer approaches have been used. These approaches include the posterior and posteriolateral lateral (lateral extracavitary and costo-transversectomy)^{1,2,10} and the anterior transthoracic (trans- or extrapleural) approaches via thoracotomy or thoracoscopy.^{1–3,10} Minimally invasive techniques for these approaches are being increasingly employed and actively investigated.^{2,10} The unilateral interlaminar laminotomy (a variation of the transpedicular approach) was successfully used in the case we have described.¹²

Conclusions

Symptomatic thoracic disc prolapse presenting with abdominal pain is rare and can easily be misdiagnosed, leading to unnecessary investigations, procedures and morbidity. Clinicians should, therefore, consider thoracic disc prolapse when forming a differential diagnosis and investigating the cause of unexplained abdominal pain.

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