Transitory paraplegia due to a calcified thoracic disc herniation
Paraplegia transitória devido à hérnia de disco torácica calcificada

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ABSTRACT
Thoracic disc herniation is rare and its clinical signs differ widely from those of cervical and lumbar disc hernias. The anterior approach is the classical treatment for these cases. We report a case of a 56-year-old man who presented a T11-T12 calcified thoracic disc herniation that rapidly progressed to paraplegia. The patient was submitted to spinal cord decompression using the Larson’s lateral extracavitary approach and completely recovered sensation and motor function.

Keywords: Intervertebral disk displacement/surgery; Paraplegia; Decompression, surgical; Case reports [Publication type]

INTRODUCTION
Thoracic disc herniation is rare and presents vague symptoms in most cases. It is difficult to determine its incidence but it may be estimated as ranging from 0.2% to 1.8% of all symptomatic disc hernias submitted to surgical treatment(1,2).

Nevertheless, thoracic disc herniation is one of the few causes of spinal cord compression that is reversible, if treated in an aggressive and appropriate manner as early as possible(3).

Since it is a rare condition and its differential diagnosis is usually difficult to make, we describe a case of paraplegia due to thoracic disc herniation that recovered after surgery.

CASE REPORT
We present a 56-year-old male patient seen at the Emergency Department, complaining of pain and paresthesia in the lower limbs for the past six hours with no history of trauma. He was medicated with analgesic and non-steroidal anti-inflammatory drugs, submitted to plain-film radiograph, computerized tomography with saggital (Figure 1), coronal (Figure 2) and axial sections (Figure 3) and magnetic resonance imaging in saggital (Figure 4) and axial sections (Figure 5), which showed thoracic disk herniation, at T11-T12, with signs of calcification and spinal cord compression.

Within 18 hours, he presented progressive loss of muscular strength up to severe paraparesia, with significant loss of motor function and sphincter control.

He was referred to emergency surgical intervention using the Larson’s lateral extracavitary approach(4), resecting the lamina, part of the rib and transverse process, pedicle and vertebral body, associated with fixation (Figure 6A, B) and arthrodesis of the segment, due to major decompression and instability caused by the surgical procedure.

Considering the disk herniation was calcified, its localization, as well as the use of intraoperative control with motor evoked potential, partial removal of the disk fragment was performed. The potential improved during surgery and it was necessary to run the risk of removing the full fragment, which was attached to the dural sac.

Within six hours the patient recovered sphincter control and, after two days, gradual muscular strength of the lower limbs.

Two months later the magnetic resonance imagining revealed significant reduction of spinal cord compression (Figure 7 and 8) and the patient completely recovered muscular strength, with mild spasticity in the right lower limb.
Transitory paraplegia due to a calcified thoracic disc herniation

Figure 1. Sagittal view of thoracolumbar spine computerized tomography showing calcified disk herniation at T11-T12

Figure 2. Coronal view of thoracolumbar spine computerized tomography showing calcification in the vertebral canal at T11-T12

Figure 3. Axial view of thoracolumbar spine computerized tomography showing calcified disk herniation at T11-T12, mainly on the right side

Figure 4. Sagittal T2-weighted magnetic resonance image of thoracolumbar spine showing extruded disk herniation at T11-T12
DISCUSSION
Thoracic disk herniation is uncommon. Its clinical picture is not very characteristic and may be misinterpreted as neoplasms or demyelinizing diseases\(^\text{(3,5)}\). The narrow space of the spinal canal in the thoracic region is considered by some authors as a limiting factor to perform laminectomy and remove the hernia, and may lead to consequences as well as to high risk of developing paraplegia\(^\text{(3-5)}\). The anterior, posterolateral and lateral extracavitary approaches are described as minimizing this risk and other neurological damage, but there is no consensus on the best procedure\(^\text{(3,5)}\).

Since the fragment was large and calcified, we chose a wider approach, based on Larson’s method, but extending it throughout the lamina in order to not over manipulate the spinal cord. Motor and sensory evoked potential
controls were also done and enabled checking spinal decompression.

One possible etiology for calcified disk herniation is deposition of calcium pyrophosphate crystals, also known as pseudogout, which is common in the cervical and lumbar regions. Some case reports in the thoracic region were described and associated with myeloradiculopathy[6-7].

Alcaptonuria, a rare hereditary disorder of the catabolism of the amino acids tyrosine and phenylalanine, is also associated with degenerative spinal alterations, and there is a report of thoracic disk herniation in one patient[8].

CONCLUSION

Thoracic disk herniations are not common and, in case of progressive and fast progression, require surgical treatment with early spinal decompression and arthrodesis, if necessary.

REFERENCES