

Intercostal Neuralgia due to Calcification of Ligamentum Flavum in DISH Patients

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Abstract

A report of intercostal neuralgia that is rarely caused by ossification of ligamentum flavum in two similar cases with diffuse idiopathic skeletal hyperostheosis (DISH syndrome).

Keywords: Intercostal Neuralgia; Ossification Ligamentum Flavum; DISH Syndrome

Abbreviations

DISH Syndrome: Diffuse Idiopathic Skeletal Hyperostheosis; OLF: Ossification of Ligamentum Flavum

Introduction

Thoracic ossification of ligamentum Flavum (OLF) is a slowly progressive disease that is usually recognised when the patients have advanced symptoms due to severe spinal cord compression, like serious neurological symptoms or even paraplegia. Thoracic OLF causing intercostal neuralgia without myelopathy like in our cases is extremely rare. To our knowledge there are just five reports in the literature [1-4].

Case Presentations

Case 1

A 57-year old woman has visited our department because of dorsalgia which was defined by the patient as “a localised, disturbing burning pain” exciting for seven months at the paravertebral right side of low thoracic vertebrae. There was no night pain, upper or lower extremity pain and gait disturbance. Examination revealed no neurologic deficit nor pathologic reflex.

X-rays showed osteophytes at lumbar vertebrae and mimicking osteophytes at the thoracic vertebrae. CT scanning manifested multiple osteophytes at thoracic and lumbar vertebrae and calcification at the right anterior of thoracic vertebral bodies. Mild hypertrophy of the facet capsules was seen at thoracic vertebrae MRI. The disc heights were preserved so all these signs suggested the diagnosis of diffuse idiopathic skeletal hyperostheosis (DISH syndrome). Analgesic drugs such as etodolac + fenyramidol were suggested.

After four months patient was admitted again and during this period she had physiotherapy (heat and ice therapy, exercises, massage) and spinal injections with no pain relief. The technique of spine injections were unclear. The pain has increased (VAS score 8) and started to “radiate” along right low cost as along posterior axillary line to anterior axillary line. New Magnetic resonance imaging (MRI) demonstrated thickening of the ligamentum flavum at the right T10-11 level that narrows the foramen and compresses the right T10 nerve root (Figure 1). Computed tomography (CT) demonstrated “beak like” ossification inside the ligament (Figure 2).



Figure 1: Axial MRI image demonstrating thickening of right ligamentum flavum compressing nerve root.

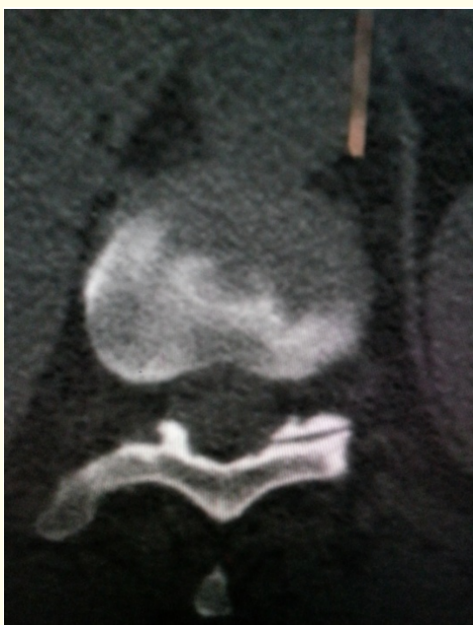


Figure 2: Axial CT image demonstrating beak like ossification of right ligamentum flavum.

Then an operation was scheduled. After dissection of the right paravertebral muscles partial laminectomy and facetectomy of the right T10-T11 and instrumentation were performed under general anesthesia (Figure 3). The intercostal neuralgia disappeared soon after the operation. CT and MRI after the operation demonstrated that decompression was enough (Figure 4A and 4B). A follow-up at 10 months showed no recurrence, and there was no pain.



Figure 3: Postoperative X ray.

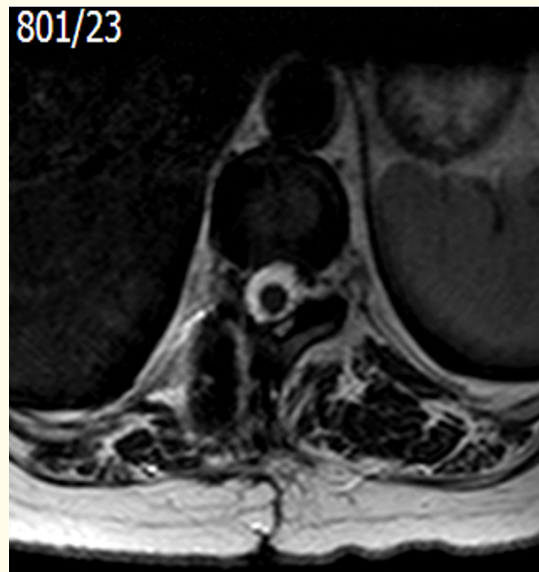
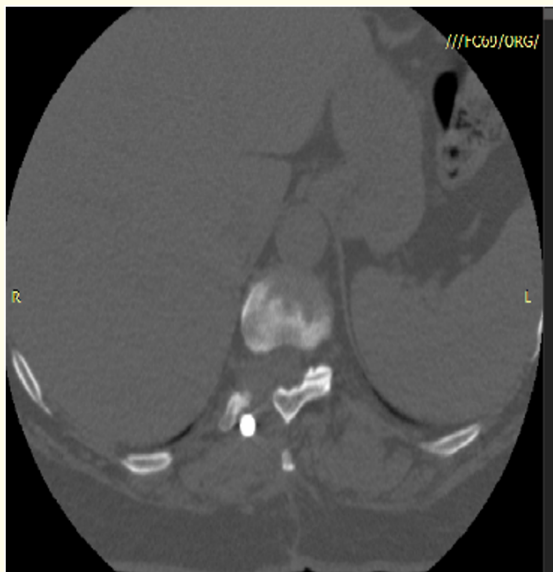


Figure 4A and 4B: Postoperative CT and MRI demonstrating adequate decompression of nerve root.

Case 2

65 years old lady complaining burning pain (VAS score 7) that is localised on the right midaxillary line at low cost as for three years. Before visiting us the pain did not reduce with pregabalin and application of spine injections. Like in our first case the technique of spine injection also unclear. Radiologic examination diagnosed DISH syndrome and showed bilateral OLF at T9-T10 with narrowing of right foramen (Figure 5A-5E). Accompanying OLF was asymptomatic at right T5-T6 level. Patient refused surgery.

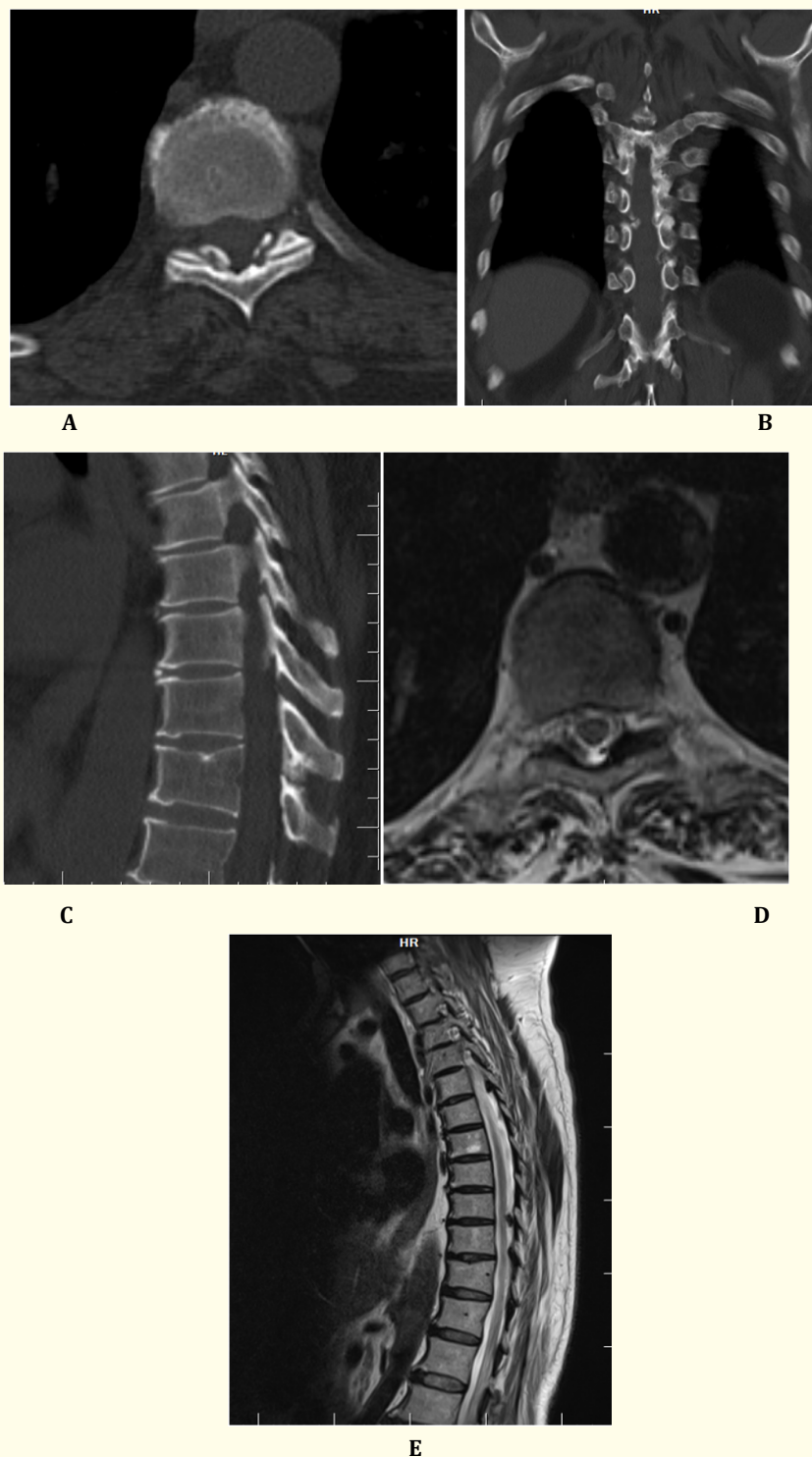


Figure 5A-5E: Radiologic images of second case.

A: Axial CT views showing ligamentum flavum ossification.

B: Coronal CT plane demonstrating ossification between pedicles at the right side of vertebrae.

C: Sagittal CT images showing calcified beak.

D and E : MRI images demonstrating ligamentum flavum hypertrophy.

Discussion

Intercostal neuralgia is often related to herpes zoster infection, diabetic polyneuropathy, major breast surgery and vertebral tumors. In addition it can be a symptom of ossification of ligamentum flavum. According to the literature it is extensively reported that thoracic OLF causes progressive myelopathy in adults [5]. But thoracic radiculopathy or intercostal neuralgia are very rare symptoms of OLF.

Conclusion

Clinicians should be aware of thoracic ossification of ligamentum Flavum causing “ burning, disturbing, persistent local or radiating pain at cost as that is entitled as intercostal neuralgia/radiculopathy in DISH patients.

Acknowledgements

None.

Conflict of Interests

There are no conflict of interests.

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