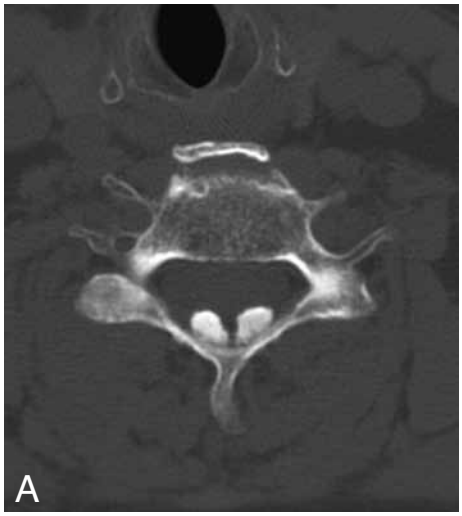
JBR–BTR, 2011, 94: 219.

IMAGES IN CLINICAL RADIOLOGY



Ossification of the ligamentum flavum in the cervical spine

L. Dewachter, D. Violon, I. Crevits[1]

A 67-year-old Caucasian woman with no medical history was referred to the hospital with severe neck pain radiating to the left arm.

A plain X-ray and non enhanced CT scan of the cervical spine was performed.

CT scan (Fig. A, B) revealed a dorsolateral V-shaped hyperdensity in the spinal canal at the level of the ligamentum flavum at C6 level with narrowing of the vertebral canal and compression of the spinal cord.

In retrospect the plain X-ray (Fig. C) showed two nodular opacities projecting posterior on the cervical canal.

These imaging findings were diagnostic for an ossification of the ligamentum flavum.

Comment

Ossification of the ligamentum flavum (OLF) usually occurs in the lower thoracic and lumbar spine and is uncommon in the cervical spine. The relative incidence of OLF in the cervical spine is approximately 0.9%. It is usually seen in East Asian populations and exceptionally reported in Caucasian people.

OLF can be isolated or it can be associated with degeneration of other osseous ligaments of the vertebral column such as ossification of the posterior longitudinal ligament (OPLL) and diffuse idiopathic skeletal hyperostosis (DISH).

The etiopathogenesis remains unclear. Some have correlated it to systemic diseases (diabetes mellitus, haemochromatosis, fluorosis and disorders of calcium and phosphorus), others have highlighted the importance of repeated mechanical stress causing degeneration and ossification.

Symptomatology involves neck or back pain, sensory disturbance of upper and lower extremities, numbness, gait disturbance and tetraparesis.

CT remains the investigation of choice to demonstrate ossification as a "V" shaped hyperdensity.

MRI and particularly T2-weighted images are useful in showing the degree and extent of spinal cord compression. On MRI the ossified ligamentum flavum appears as a linear or nodular hypo-intens lesion posterior to the thecal sac on both T1 and T2-weighted images.

It is therefore indicated to combine CT and MR imaging.

The treatment of choice is a posterior decompressive laminectomy with removal of the thickened, ossified ligament.

Prognosis is good, depending on the severity of myeolopathy, with a neurological improvement in most operated patients.

This is an exceptional case because our patient is Caucasian, the ossification is present at cervical level and is symptomatic.

References

1. Kim K., Isu T., Nomura R., Kobayashi S., Teramoto A. Cervical Ligamentum Flavum Ossification. Two case reports. *Neurol Med Chir*, 2008, 48, 183-187.
2. Kruse J.J., Awasthi D., Harris M., Waguespack A. Ossification of the Ligamentum Flavum as a Cause of Myelopathy in North America: Report of Three Cases. *J Spinal Dis*, 2000, 13: 22-25.

1. Department of Radiology, Heilig-Hart ziekenhuis, Roeselare-Menen, Belgium.