Case 8344

Non-dysraphic cervical cord lipoma
Published on 08.04.2010

DOI: 10.1594/EURORAD/CASE.8344
ISSN: 1563-4086
Section: Neuroradiology
Case Type: Clinical Cases
Authors: Arora A, Kumar Puri S, Upreti L, Kapur A, Gupta R
Patient: 35 years, male

Clinical History:
A 35-year-old male patient presented with neck and upper back pain during the last 6 years.

Imaging Findings:
A 35-year-old male patient presented with neck and upper back pain during the last 6 years. There was also history of tingling and numbness of all four limbs since the last 2 years. No history of bowel and bladder involvement was reported. On neurological examination, the patient was found to have mild atrophy of hand muscles with weak grip on both sides. There was hyperreflexia at triceps, knee and ankle jerk with plantar extensor. There was no spinal tenderness or spinal deformity. No neuro-cutaneous markers or spinal dysraphism was evident. MR imaging of the cervico-dorsal spine revealed eccentric subpial mass lesion that had high signal intensity on T1- and T2- weighted sequences and showed complete suppression on fat suppressed images. The mass extended, in a contiguous fashion, from C1 to C5 vertebral level. Subtle cord expansion and cord oedema was noted along the caudal margins of the mass at C5-C6 vertebral level. No evidence of segmentation anomalies of the cervico-dorsal vertebrae was seen. MR evaluation of entire spine did not reveal dysraphism at any level.

Discussion:
Intraspinal lipoma depending upon their location can be broadly classified into epidural and intradural lipomas. Intradural lipomas can be intramedullary, extramedullary, or a mixture of the two. Majority of the intramedullary lipomas are subpial and seldom completely enclosed by neural tissue. Intraspinal lipomas in children with spinal dysraphism are frequently encountered on imaging in contrast to the non-dysraphic spinal lipomas which are highly uncommon with occasional case reports mentioned in the literature. These non-dysraphic spinal lipomas account for less than 1% of spinal neoplasm.

A number of hypothesis pertaining to the genesis of intradural spinal cord lipomas have been proposed but still the pathogenesis remains unclear. Some authors believe that these lesions are due to developmental error with resulting from inclusions of embryonic rests of adipose cell during the formation of the neural tube whereas others feel that connective tissue metaplasia may lead to deposition of fat within the dura.

Non dysraphic lipomas are usually seen in young adults with a predilection for the cervical and thoracic region. Involvement of the entire length of the cord has also been reported with or without extension into the foramen magnum. There is no gender predilection. These are usually sited dorsally in the spinal canal causing ventral flattening of the cord. Non dysraphic lipomas have only a small space for expansion and thus present relatively early due to their mass effect and compression of the neural structures. The clinical course is characteristic, with sluggish evolution of initial symptoms and rapid worsening thereafter. Slow growth of the lipoma allows for adaptation of the cord in the initial stages without any significant functional change. A stage is eventually reached when there is no longer any physiologic reserve, and neurological dysfunction then rapidly progresses.

Clinically these patients present with symptoms of compressive myelopathy which may include non radiating back
pain, gait disturbance, ataxia, bowel or bladder incontinence or weakness of the limbs. Patients with cervico-thoracic lipomas usually present with a slow ascending spastic mono or paraparesis. Patients may also complain of sensory disturbances. MRI is the preferred imaging modality in these patients owing to high soft tissue contrast and its multiplanar imaging capabilities. T1-weighted, T2-weighted and fat suppressed sequences are valuable in demonstrating the characteristic signal intensity of fat. The longitudinal dimension as well as the infiltrative extension of these lipomas into the spinal cord is also well delineated on the MR images.

Adhesion of lipoma tissue to the adjacent neural parenchyma is common, and attempts to remove all of the mass can lead to parenchymal injury. Aggressive removal of this mass is not necessary. The main purpose of surgery in such cases is to decompress the adjacent neural structures. Early surgical decompression prevents irreversible spinal cord dysfunction. Laser surgery is especially useful for treating these tumours, and may be effective for gentle debulking.

**Differential Diagnosis List:** Non-dysraphic intradural cervical spinal cord lipoma

**Final Diagnosis:** Non-dysraphic intradural cervical spinal cord lipoma

**References:**


Description: A long segment homogeneous high signal lesion is seen extending from C1 to C5 vertebral level. Subpial nature of the mass is appreciated well along its caudal margins. Origin:
Description: There is subtle cord expansion and intramedullary signal alteration noted along the inferior margins of the mass at C5-C6 vertebral level. Origin:
**Figure 3**

*Description:* There is complete suppression of the lesion on the fat suppressed images. *Origin:*
Figure 4

Description: The lipoma appears to be lobulated and is compressing and displacing the cord anteriorly and to the left. No spinal dysraphic features are seen. Origin:
Figure 5

Description: The mass seems to be tethered to the cord parenchyma causing mild cord expansion.

Origin: