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LETTER TO EDITOR

Decompressive laminectomy for thoracic ossification of the posterior longitudinal ligament

Dear Editor,

Ossification of the posterior longitudinal ligament (OPLL) of the thoracic spine occurs less frequently than OPLL of the cervical spine, but requires surgical treatment when complicated by myelopathy.[1] Myelopathy of compressive origin is best dealt with surgical decompression, at the earliest. The surgical procedure employed can be either an anterior, anterolateral, or a posterior decompression.[2]

A 48-year-old female patient presented with progressive spastic weakness and paresthesias of the lower limbs for over 4 months and gait disturbances for 3 months. On examination, tone was increased in both lower limbs (MAS Score-2), power in both lower limb 3/5, exaggerated knee and ankle reflexes, extensor plantar reflexes, loss of joint position sense bilaterally with graded sensory loss to pin prick and temperature from D4 below. MRI of the cervico dorsal spine showed hypo intense lesion on both T1 and T2W compressing the cord from C7 to D3 anteriorly, suggestive of OPLL [Figure 1]. Decompressive laminectomy from C6 to D4 was performed using high speed drill. There was not much improvement in the immediate post-operative period, however the patient came walking at 6 months time with reduced spasticity (MAS grade-1), and was independent for activities of daily living.

OPLL is commonly noted in the cervical region though occurrence in thoracic region been sparingly reported. Aim of surgery in compressive myelopathy is to provide adequate space to the cord, either through an anterior or a posterior approach. Of the various factors influencing the approach, lordotic curve is thought to be an important prerequisite for posterior decompression. However, thoracic spine is kyphotic and hence the advantage offered by natural fall of the cord away from the compressive force is lost as in lordotic cervical spine. The canal expansion of 4-5 mm in the sagittal diameter correlates approximately with 50% increase in canal area and facilitating a 3-mm dorsal shift of the spinal cord,[3] thus contributing to clinical improvement is well described for cervical decompression. However, the same procedure is ridiculed in the absence of lordotic curve.

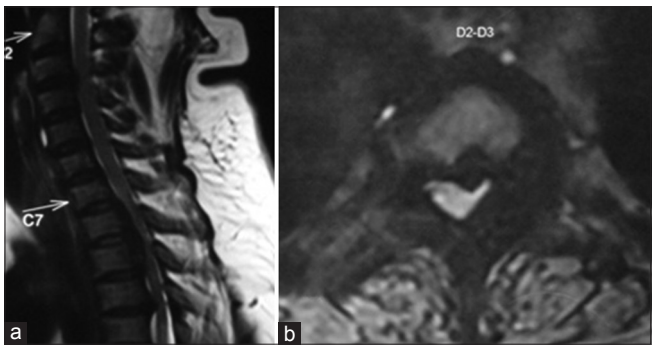

Figure 1: MRI showing OPLL extending from C7 to D4 level in sagittal section (a) and axial section at D2-D3 level showing OPLL compressing the cord anteriorly (b)

Tsuzuki *et al*.,[4] have described anatomical factors that inhibit shift of spinal cord after posterior decompression which include longitudinal and axial factors. The anterior pulling effects of spinal cord segments above and below OPLL restrain the dura which could be overcome by extensive decompression with or without durotomy. Axial factors are anterior adhesion of dura to OPLL, dural ossification, and an anterior tethering effect of thoracic roots and dentate ligaments which can be eliminated by root release with total laminofacetectomy and anterolateral dural release with or without OPLL resection. The dynamic forces on the thoracic cord are small, as the thoracic spine is anatomically stabilized due to the presence of the rib cage.[5] Beak-type OPLL has higher risk of neurological deterioration after posterior approach surgery than flat-type OPLL.[6]

Our patient had OPLL in the cervico dorsal region; decompressive laminectomy was performed from C7 to D5 level. In the post-operative period patient neurological status improved. Usually short segment OPLL in the thoracic spine are managed with anterior or anterolateral decompression;[7] in case of long segment OPLL at cervicothoracic junction anterior approach may be hindered anatomically by great vessels, and hence is technically difficult, where posterior decompressive laminectomy can be an alternative.

Alugolu Rajesh, Pavankumar Pelluru, Aniruddh Kumar Purohit

Department of Neurosurgery, Nizam's Institute of Medical Sciences, Punjagutta, Hyderabad, Telangana, India

Address for correspondence:
Dr. Alugolu Rajesh,
Department of Neurosurgery, Nizam's Institute of Medical Sciences, Punjagutta, Hyderabad - 500 082, Telangana, India.
E-mail: drarajesh1306@gmail.com

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