

Buckling of Cervical Yellow Ligament Mimicking Spinal Cord Tumor

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Introduction

Although commonly viewed in a static neutral position, increased spinal canal narrowing on neck extension due to buckled cervical yellow ligament may result in spinal cord signal change resembling intramedullary spinal cord tumor. Thus patients may undergo high-risk biopsy or resection of suspected spinal cord tumors when cervical decompression would be the appropriate treatment. This uncommon scenario has yet been described.

Methods

We describe our series of 12 patients erroneously diagnosed with intramedullary spinal cord tumor on imaging referred for consideration of spinal cord biopsy who were later found to have a structural abnormality causing spinal cord compression.

Results

All 12 patients presented with progressive myelopathy. On neutral neuroimaging, the patients appeared to have minimal to no spinal cord compression, yet fusiform T2 spinal cord hyperintensities were visualized. Linear axial gadolinium enhancement was seen prompting confirmatory extension MRI scan. Extension MRI scanning demonstrated previously unrecognized spinal canal compromise due to buckling of the cervical yellow ligament, with gadolinium enhancement localizing to the region of maximum compression.

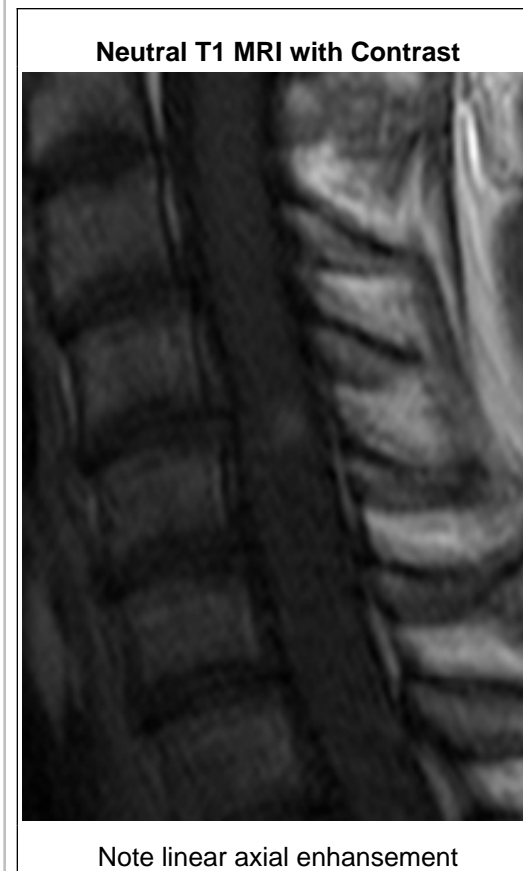
Of these 12 patients, 8 were offered a diagnostic spinal cord biopsy at an outside institution prior to referral.

All 12 patients were offered a cervical decompressive procedure at our institution, of which one declined, 8 underwent concomitant fusion, and 3 had simple decompressive procedures. Of the 11 patients who were operated, 9 improved, 2 remained stable, and none worsened. T2 signal decreased in all patients following decompression.



Conclusions

Unrecognized compressive myelopathy misdiagnosed as intramedullary spinal cord tumor can have disastrous consequences as patient may undertake high-risk spinal cord biopsy/resection procedures, when a lower-risk extradural decompressive procedure is indicated. The potential for ligament laxity in the face of spinal instability requiring intraoperative fixation is discussed in this rare disorder potentially requiring post-operative follow-up MRI imaging for conformation.



References

Compressive myelopathy mimicking transverse myelitis. Neurologist 2010
Dynamic changes in dural sac and spinal cord cross-sectional area in patients with cervical spondylotic myelopathy. Spine 2011

Learning Objectives

1. Unique imaging characteristics in progressive myelopathy may indicate dynamic spinal cord compression commonly mistaken for tumor
2. Utility of dynamic MRI scan to diagnose compressive myelopathy
3. Importance of avoiding open spinal cord biopsy on compressive myelopathy patients

