

SHOCK OF HIS LIFE

A case report of ossification of the posterior longitudinal ligament presenting with spinal shock after a trivial fall.

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Introduction

Ossification of the posterior longitudinal ligament (OPLL) is a condition of abnormal calcification of the posterior longitudinal ligament. The most common location is at the cervical spine region. Compression of spinal cord caused by OPLL may lead to neurologic symptoms and in the cases with severe neurologic deficit, surgical treatments are required.

Case Report

A 45-year-old man with no underlying illnesses was found unconscious after stumbling forward and landing flat in a prone position. Upon waking up, he complained of bilateral lower limbs weakness, numbness and bowel incontinence.

On examination, his GCS was full and there were only abrasions over his face. There was cervical midline tenderness with loss of power from C8 and below. Sensation was reduced from C6 to T3 and completely lost T4 downwards. He was areflexic over all 4 limbs, with absence of bulbocavernosus reflex and a lax anal tone. His blood pressure was normal but he was bradycardic.

CT cervical showed severe degenerative changes of the spine associated with ossification of the posterior longitudinal ligament with spinal canal narrowing at C3-C5. No fractures were noted. MRI revealed cervical posterior longitudinal ligament ossification (C2-T1 level) causing multilevel spinal canal narrowing, worse at C3/4 and C4/5 level with cervical cord myelopathy.

Patient underwent posterior spinal instrumentation and fusion of C3-T2. Post injury, he only regained full power over the C5, C7 myotome of the left side while the rest remained 0.

Discussion

Clinical Manifestation

Most OPLL cases are asymptomatic in the early stages but symptoms increase in severity as the disease progresses. This patient was asymptomatic and unaware of his underlying condition until a trivial fall caused devastating consequences.

About 80-85 % of OPLL patients experience a slow progression, but symptoms become suddenly aggravated or even quadriplegia may appear by mild injuries. A study in Japan concluded that most of cervical spinal cord injury associated with OPLL were incomplete, without bone injury, and caused predominantly by low-energy trauma as demonstrated in this case.

Detection

CT is the gold standard in detecting OPLL as it is sensitive to ligamentous ossification and calcification. MRI will be able to detect associated cord compression.

Radiological Findings



Figure A: CT cervical spine showing calcification of the posterior longitudinal ligament from C2 up to T1 (red arrows) vertebral level causing narrowing of the spinal canal from C3 up to C5 level.



Figure B: MRI of cervical spine showing multilevel spinal canal narrowing, worse at C3/4 and C4/5 level (red arrows) with cervical cord myelopathy.

Conclusion

OPLL is frequently undetected as the initial symptoms such as dysesthesia and tingling sensation in the hands are overlooked. However, neurological deficit including quadriplegia may develop following low impact injuries as evidenced in this case.

References

1. Chikuda, Hirota, et al. "Acute Cervical Spinal Cord Injury Complicated by Preexisting Ossification of the Posterior Longitudinal Ligament: a Multicenter Study." *Spine*, U.S. National Library of Medicine, 15 Aug. 2011, www.ncbi.nlm.nih.gov/pubmed/21240049.
2. Nagata, K., & Sato, K. (0AD). *Diagnostic Imaging of Cervical Ossification of the Posterior Longitudinal Ligament*. Opll, 127–143. doi: 10.1007/978-4-431-32563-5_19