



TETRAPLEGIA AFTER TRAUMA BECAUSE OF OSSIFICATION OF POSTERIOR LONGITUDINAL LIGAMENT

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SUMMARY:

Ossification of the posterior longitudinal ligament (OPLL) is the new bone development and thickening of the posterior longitudinal ligament within the spinal canal. The clinical symptoms of OPLL appear mostly after 40 years of age. Patients complain of pain in the neck and the occipital area, and this is followed by paresthesia and weakness in the upper and lower extremities. We report a case with sudden tetraplegia after trauma because of cervical OPLL.

Key words: Ossification of the posterior longitudinal ligament, Tetraplegia, Cervical trauma

Level of evidence: Case report, Level IV

INTRODUCTION

Ossification of the posterior longitudinal ligament (OPLL) is the new bone development and thickening of the posterior longitudinal ligament within the spinal canal. When OPLL compress the spinal cord or nerve roots neurological deficits, motion problems and voiding difficulties could be seen. We report a patient with OPLL in the cervical spine who developed an almost complete tetraplegia after traffic accident.

CASE REPORT

A fifty-five year old male patient apply to emergency service after trauma with sudden tetraplegia. Neurological deficit recovered in hours. Only distal upper extremities muscle strength was 3/5. Radiological diagnostic test made with computed tomography and magnetic resonance imaging (Figure-1,2,3). Ossification of posterior longitudinal ligament (OPLL) was reported on diagnostic images.

Surgery suggested for OPLL. Surgery was performed with C₃₋₄₋₅₋₆ total laminectomy and lateral mass instrumentation (Figure-4,5,6,7). Postoperatively upper extremities muscle strength was 1/5. MRI performed and spinal cord contusion reported. After 1 week of follow up, muscle strength recovered to 5/5 and patient referred to physiotherapy.



Figure-1. Preoperative MRI sagittal T2 image

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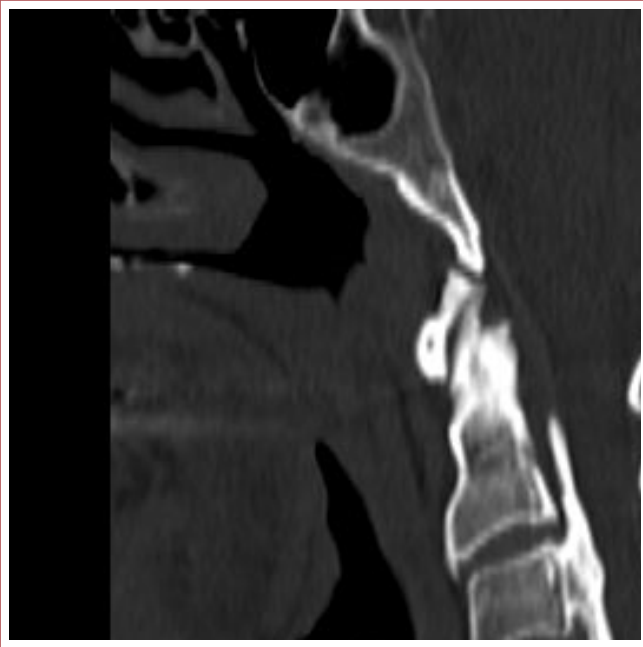


Figure-2. Preoperative CT sagittal image



Figure-4. Postoperative MRI sagittal image



Figure-3. Preoperative sagittal CT axial image



Figure-5. Postoperative CT sagittal image

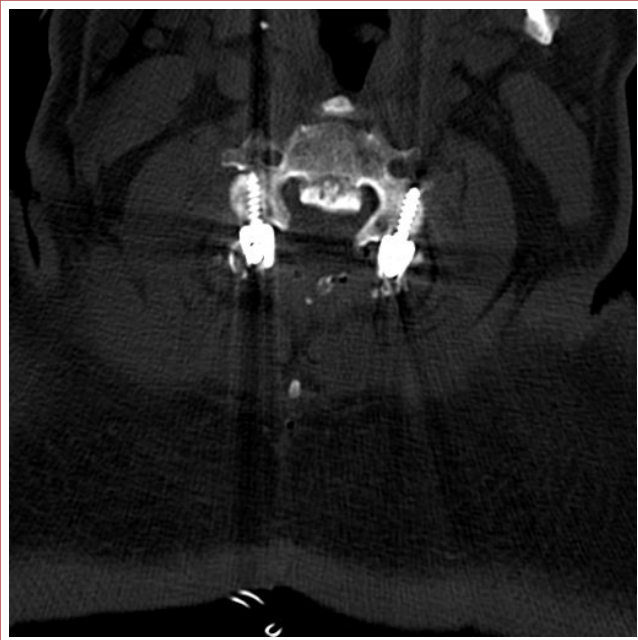


Figure-6. Postoperative CT axial image



Figure-7. Postoperative cervical vertebral X-ray

DISCUSSION

The clinical symptoms of OPLL appear mostly after 40 years of age. Patients complain of pain in the neck and the occipital area, and this is followed by paresthesia and weakness in the upper and lower extremities. Paresthesia is the most common clinical symptom with a 70% ratio of patients ⁽¹⁾. OPLL patients can live without serious problems till spinal canal compression become symptomatic. Conservative treatment could be suggested for patients with mild paresthesia and no evidence of muscle weakness ⁽⁵⁾.

Surgical treatment is generally indicated when symptoms progress in spite of conservative treatment or when there is obvious compression of the spinal cord with neurological deficit. Laminectomy and lateral mass stabilization is considered the best method for treating OPLL involving more than 3 segments. Patients over 65 years of age with serious clinical symptoms for more than 2 years are generally known to have a bad post-operative prognosis because of spinal stenosis ⁽⁴⁾. As an increase of OPLL has been observed in 89% of cases after laminectomy, and in 34% after cervical canal laminoplasty ⁽³⁾.

Complications for simple laminectomy and stabilization could be exemplified as infection, stabilization failure, post-operative scar formation in the extra-dural space, post-operative spinal instability and an abnormal post-operative curvature ⁽⁶⁾. In some reports, traction of a cervical nerve root by a backward shift of the compressed cord followed by injuries to the radicular artery have been noted after operation ⁽⁶⁾.

We report a case with sudden tetraplegia after trauma because of cervical OPLL. Spitzer also reported a similar case after a minor hyperextension injury ⁽⁷⁾. Cruzeiro et al and Cho et al also reported similar cases that occurred spontaneously without any trauma ⁽¹⁻²⁾. OPLL must be followed up because serious results could be seen spontaneously or after traumatic injury.

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