



Surgical treatment for upper cervical myelopathy caused by partial aplasia of the posterior arch of the atlas: A case report

Koizumi M¹, Kato Y¹, Yamasaki T², Tanaka Y³

¹Department of Spine Surgery, Nara Prefecture General Medical Center

²Department of Orthopaedic Surgery, Nara Prefecture General Medical Center

³Department of Orthopaedic Surgery, Nara Medical University

Disclosures



The authors declare no conflicts of interest associated with this presentation.

Introduction & Background

Partial or complete defect of the posterior arch is rare among the anomaly of the atlas and is predisposed to various symptoms and neurological problems.

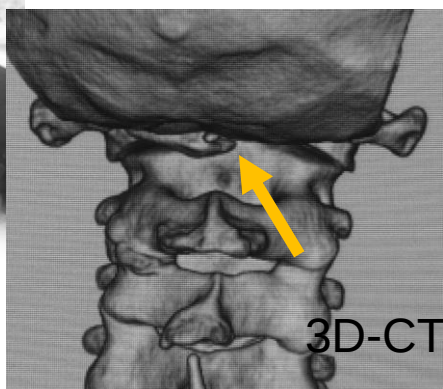
We report a case of cervical myelopathy caused by partial aplasia of the posterior arch of the atlas.

Case Presentation

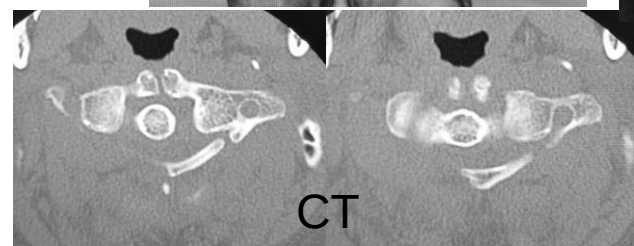
A 65-year-old male presented with numbness of both hands and weakness of right hand. Neurological findings were compatible to cervical myelopathy; clumsiness of both hands and gait disturbance. He reported he needed to hold to handrail while walking on stairs. Deep tendon reflexes increased bilaterally on upper and lower extremities, however sensory disturbance was unclear. He didn't suffer from urinary problem.



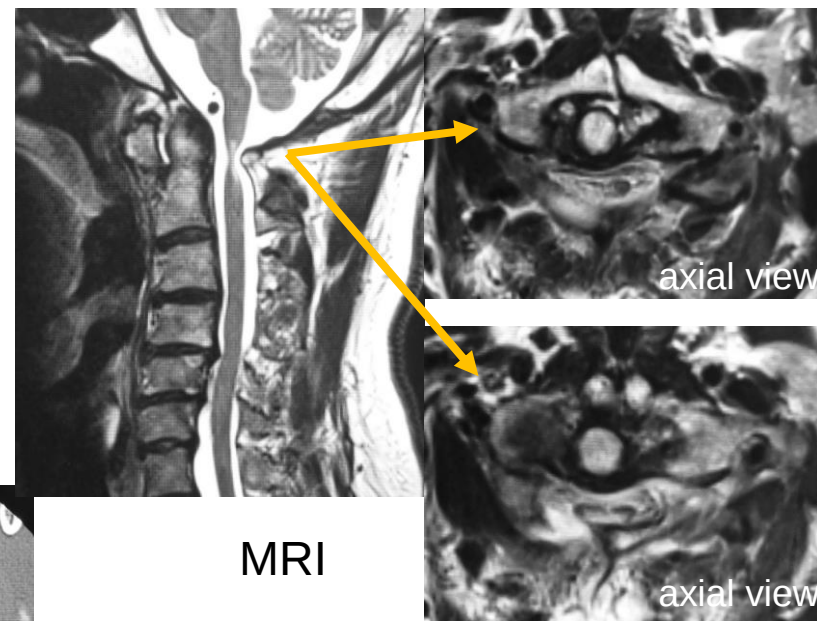
Radiograph shows no instability at upper cervical region.



3D-CT



CT



MRI

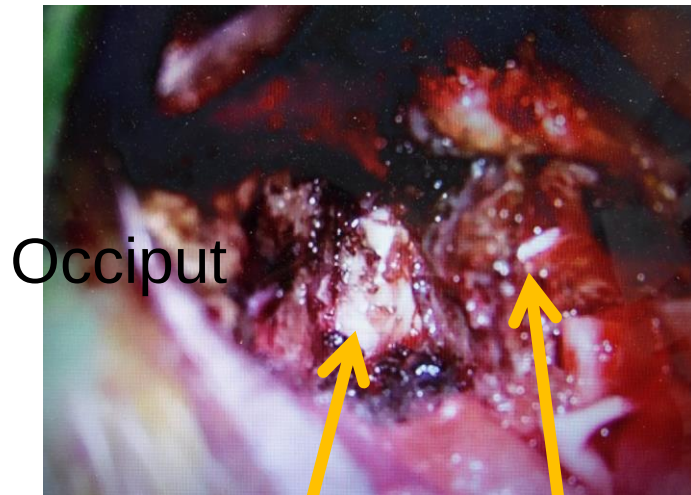
axial view

axial view

Surgical treatment for upper cervical myelopathy caused by partial aplasia of the posterior arch of the atlas: A case report

Results

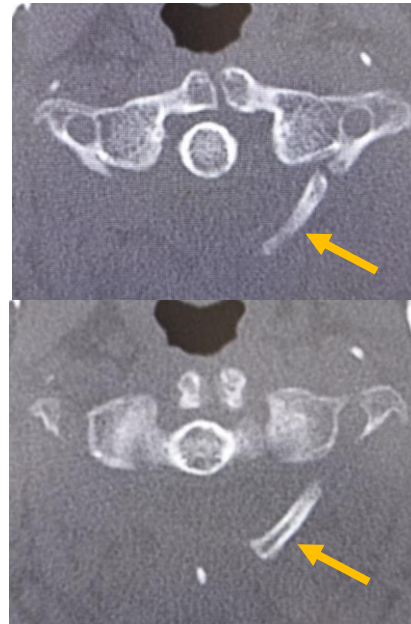
Progressive neurological deterioration led us to perform surgical treatment. Through posterior midline approach, dorsal aspect of bony tubercle of atlas was exposed. Right side of arch where bony element was absent was tightly covered by fibrous tissue which bridging between bony tubercle and left lateral mass area. Part of bony tubercle was removed at midline area and fibrous tissue was cut to the lateral side, which made the dural tube decompressed.



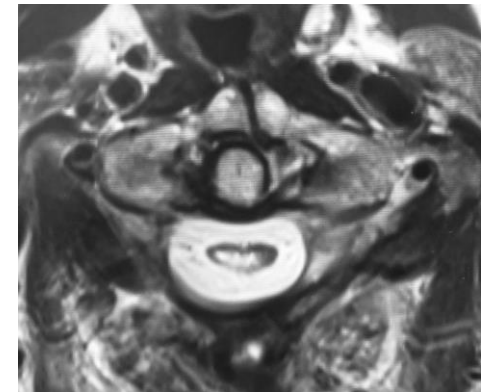
Occiput

C2 spine proc.

decompressed dural tube



Note the expanded residual arch



Postoperative CT and MRI

Surgical treatment for upper cervical myelopathy caused by partial aplasia of the posterior arch of the atlas: A case report

Disucussion and Conclusion

Postoperative course was unremarkable and his motor and sensory function recovered well soon after surgery.

Discussion: Partial or complete aplasia of the posterior arch of atlas is a rare abnormality and can cause spinal deficit. Previous reports described mainly patients aged pediatric, adolescent or up to 30s and unique inward movement of posterior tubercle in extension.

Current case did not show visible instability of atlas. Less dynamic motion of posterior element might have delayed manifestation of myelopathy although developmental stenosis due to fibrous band and dysplastic bony fragment existed.

36th ANNUAL MEETING

CERVICAL SPINE RESEARCH SOCIETY – EUROPE

