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Traumatic posterior atlanto-axial dislocation: grand round presentation of an atypical C1-C2 dislocation with an anterior arch fracture of C1

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Introduction: The combination of posterior atlantoaxial joint dislocation and anterior arch fracture of C1 is uncommon: an epidemiological review found no case out of 116 was upper cervical spine injuries. A review of the English literature found one similar case but with posterolateral dislocation and managed by closed reduction followed by Magerl C1-C2 transarticular screw fixation coupled with modified Brooks fusion. We report an atypical case of a traumatic posterior C1-C2 dislocation with an anterior arch fracture treated conservatively.

Materials and method: An 89-year-old male, with no history, was admitted to our unit and was managed following a domestic accident. Upon examination, we found no loss of consciousness or respiratory difficult. The rest of the neurological physical examination was strictly normal. Cervical spine radiography and Two-dimensional reconstructed computed tomography (CT) scans demonstrated Posterior dislocation of the atlantoaxial joint with anterior arch fracture of C1. The distance between two fragments of anterior arch of C1 is less than odontoid diameter, these findings suggest that, the odontoid is passed just below the anterior arch of C1. Under general anesthesia, the patient was treated conservatively by a moderate traction in hyperextension with a halo frame while a second senior orthopedic surgeon pushed the odontoid via trans-oral method in hyperextension position then flexion of the tracted neck under C- arm fluoroscopy

Results: At two months follow-up, the clinical picture was accepted, and cervical spine radiography and two-dimensional reconstructed CT found a well-reduced atlantoaxial articulation, dynamic X-rays demonstrated good range of motion in flexion and extension; the patient had no major functional trouble

Conclusion: Based on the Grand Round case and relevant literature, we present a first case of an unusual lesion of the upper cervical spine

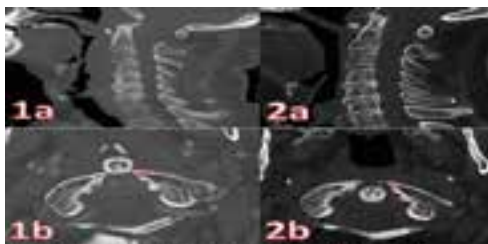


Fig.1. 1a-1b shows the sagittal and axial views before the reduction of atlantoaxial articulation; 2a-2b post reduction.

Biography

Mohammad Alsofyani is a faculty member at college of Medicine - University of Hail in Kingdom of Saudi Arabia (KSA). He is a graduate of Taif University School of Medicine in KSA. He is in scholarship program for orthopedic residency in France since November 2014. Currently he is 5th year resident at Bordeaux University Hospital, Department of Spine Surgery (Professor Jean-Marc Vital and Professor Olivier Gille).