Case Report:

**Atalantoaxial dislocation after hyperextension of neck: Rare case report**

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**ABSTRACT:**

24 yrs female patient had sudden onset quadriparesis without any significant trauma, so the diagnosis of Guillain-Barre syndrome was considered. On repeated questioning, she told that, she was taking clothes off the rope when she suddenly lost her power. After investigation it turned out to be a case of sudden onset quadriparesis secondary to fracture dens due to hyperextension of neck. Patient was operated for surgical decompression and stabilization. Atlanto-axial dislocation (AAD) is an injury involving a dislocation between the first two cervical vertebrae which may result from the rupturing of the stabilizing ligaments, a fracture in one of the vertebrae or a combination injury.

**Key words:** Atlanto-axial dislocation, craniovertebral junction.

**INTRODUCTION**

Atlanto-axial dislocation (AAD) is an injury involving a dislocation between the first two cervical vertebrae which may result from the rupturing of the stabilizing ligaments, a fracture in one of the two vertebrae or a combination injury. Atlanto-axial joint (AAJ) is the most complex joint of the body and includes four joints. As this joint is kept stable by only joint capsule and ligaments, it is more prone to dislocation. Ventral translatory atlantoaxial dislocation and rotational atlantooccipital dislocation are two types of dislocation. Acquired AAD commonly develops following acute cervical trauma or due to slow erosion around the joints in diseases like tuberculosis arthritis, rheumatoid arthritis, ankylosing spondylitis. Congenital atlanto-axial dislocation (CAAD) is the commonest craniovertebral junction (CVJ) anomaly encountered in clinical practice.

**CASE REPORT**

24 years female came to casualty with complaint of sudden onset of weakness of all four limbs with neck pain, painful & restricted neck movements and urinary incontinence. She had no history of insect or unknown bite, fever, breathlessness, similar episodes in past, no history of tuberculosis in past. Pt got admitted to medicine ICU as case of acute onset quadriparesis. Her provisional diagnosis was Guillain-Barre syndrome. On physical examination, her vitals were stable and power was grade III in both upper limbs and grade II in both lower limbs, reflexes were normal and Babinski’s sign was positive. Rest of systemic examination was normal. On investigation complete blood count and electrolytes were within normal limits. On imaging, x ray neck true lateral view was suggestive of widening of the predentate space, disruption in the smooth curve of the imaginary line connecting the spinolaminar white
lines of the vertebral bodies, Congenital fusion of bodies of C5,C6,C7. CT SCAN showed fracture of base of odontoid process at its junction with body of axis with mild anterior displacement of fracture fragments. Patient was operated for surgical decompression and stabilization. Post operatively her power has improved.

DISCUSSION
Congenital atlanto-axial dislocation (CAAD) constitutes an important group of craniovertebral junction (CVJ) anomalies frequently requiring emergency decompression and stabilization of joint to prevent morbidity and mortality resulting from compression of neurovascular structures at CVJ. Although present at birth it often manifests at a later date (usually by the third decade) often following trauma. The injury at times may be minor and hence forgotten by the patient as well as doctors. When present, the severity of neurological symptoms and its progression have no relation to the degree of injury sustained by the patient. Rupture of the transverse ligament allowing anterior atlanto-axial dislocation without fracture could be diagnosed only indirectly from radiographs showing an atlantodental interval of 5 mm or more. These radiographic measurements may be misleading because they depend on head position; flexion/extension views are not advisable in a patient with an acute neurological injury. This patient had sudden onset quadriplegia without any significant trauma, so the diagnosis of Guillain-Barre syndrome was considered. On repeated questioning, she said, she was taking clothes off the rope when she suddenly lost power in all four limbs and had a fall. High index of suspicion is needed for the diagnosis of acute onset quadriplegia due to cervical trauma.

CONCLUSION
High index of suspicion is needed for the diagnosis of acute onset quadriplegia due to cervical trauma.

PHOTOGRAPHS

Photograph 1: CT scan showing fracture dense with anterior displacement
Photograph 2: MRI cervical spine—showing small hematoma of size 8mm thickness seen along side of dens, cervical cord edema (from lower medulla to C3 level) about 4cm.

Photograph 3: post operative neck X ray (lat. view) shows significant reduction in predental space.

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