Horizontal fractures of the atlas are uncommon fractures associated with instability of the craniocervical junction. Most commonly associated with high-speed motor vehicle accidents, these fractures need to be identified and treated appropriately. Due to its relatively benign presentation on bony imaging, magnetic resonance imaging to look for ligamentous instability is important. We present two such cases which were managed by occipitocervical fusion at our institute [1)].

This is the first report of traumatic combined vertical atlanto-occipital dislocation (AOD) and atlanto-axial dislocation (AAD) with 2-part fracture of the atlas.

Patient concerns: The first case was of a 31-year-old woman admitted to the emergency room comatose after a traffic accident. The second case was of a 21-year-old woman admitted to the emergency room comatose after a fall.

Diagnoses: Traumatic combined vertical AOD and AAD with 2-part fractures of the atlas was diagnosed using plain radiography, 2-dimensional computed tomography, and/or magnetic resonance imaging of the cervical spine.

Intervention: The first patient received immediate intubation and cardiopulmonary resuscitation in the emergency room. The second patient also received immediate intubation in the emergency room. After her vitals stabilized, she underwent occipitocervical fusion with instrumentation.

Outcomes: The first patient died 2 days after the accident. The second patient remained quadriplegic in a ventilatory-dependent state at 1 year after surgery. She continues to receive comprehensive rehabilitation [2)].

A 4-year-old child in whom a penetrating trauma to an immature atlas led to an unusual disjunction of the posterior synchondrosis with atlas fracture displacement of the posterior “hemiarch” that plunged into the dura, resulting in a cerebrospinal fluid fistula.

Praneeth et al. discussed the possible mechanism and considerations in the management of this unique presentation. Such an atypical fracture pattern involving the posterior hemi ring of the pediatric atlas is previously unknown [3)].

1)
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2)
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3)
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