

## Post Concussion Ataxia Following Minor Head Injury

Cerebellar syndrome either idiopathic or following major head injury with coma and neurological deficits has been reported(1,2). However, here we present a case of 'post-concussion ataxia' or cerebellar syndrome, after only minor head trauma, normal neuro-imaging and no other cause for ataxia.

A 2-year-old girl presented with history of fall from a 2 feet high bed, 20 days back. There was no alteration of consciousness immediately but four hours later parents noticed unsteadiness of gait and shaking of head and neck. These progressed and she became bedridden due to ataxia 7 days later. There was no pain or restriction of neck movement. There was no preceding viral illness, vaccination or cerebellar symptoms. Birth history and development was normal and she had no similar family history.

On examination, she was conscious, had severe ataxia, intention tremors of hands, no nystagmus, vitals stable, speech normal, hypotonia and flexor plantars. Two radiologists reported MRI brain as normal and one reported edema at C1-C2. There was no cranio-vertebral junction anomaly. Cervical traction was applied and steroids were started. After 7 days, her tremors decreased and she could walk with support and the traction was removed. She was discharged 20 days after admission. She could walk without support with broad based gait 16 days after discharge.

On follow-up during next 6 months her tone, power and reflexes were normal. Only complaint was shaking of the head, on awakening in morning, lasting for 10-15 min. The gait has improved 7 months after the fall but is not normal. She can walk without support, plays with other children, and the

duration of morning tremor has decreased to 2-3 min. Speech is normal but she has not acquired any new words.

The interesting feature is the occurrence of severe, prolonged cerebellar ataxia only, following minor head trauma with no other clinical sequele. Only Fenichel has described in children, a 'post concussion syndrome' presenting as ataxia or only unsteady gait that clears in 1-6 months(3). There is no other report in pediatrics literature. Axonal shearing in the superior cerebellar peduncle due to sudden acceleration/deceleration forces following head injury (in adult) has been suggested as the pathology(2,4). If axonal shearing is unaccompanied by hemorrhage it will be invisible on MRI(4). Other possibility can be a congenital defect in the brain/skull-spine that makes some individuals prone for the cerebellar post concussion syndrome-ataxia, unexpectedly following minor head trauma.

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