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CASE REPORT

Traumatic Pontomesencephalic Junction Contusion Masquerading As Sixth And Seventh Nerve Palsy

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ABSTRACT

We report a rare case of pontomesencephalic contusion following a motorbike accident in a 4 yr old boy. Depending on the location of the injury in the brainstem, the clinical presentation varies across a spectrum, ranging from the patient being comatose, to almost undetectable or subtle neurological deficits.

In the case that we report, the patient had a contusion in the junction between pons and midbrain, and we were able to identify it on a CT scan in a retrospective manner after a radiological correlation was sought with the mode of clinical presentation.

Key Words: Facial palsy, head trauma, brainstem, midbrain

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The baseline investigations showed haemoglobin to be 10.9gm/dl, WBC to be 9.7×10^3 gm/dl and PCV to be 35.2%. The electrolytes were within normal limits. Chest X-ray PA view and X-ray cervical spine were within normal limits.

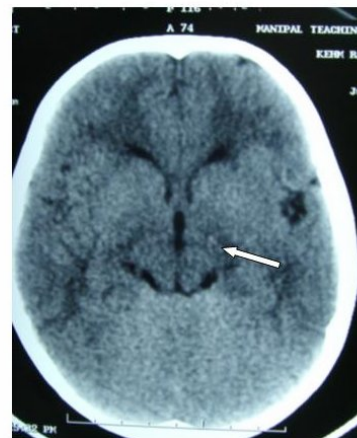
CT Plain Head showed left pontomesencephalic contusion with cerebral peduncle bleed.

Case Report

A 4 yr old male child presented to our emergency room with altered sensorium for four days after being hit by a motor bike. He had altered sensorium from then on. He also had one episode of bleeding from both nostrils, and continuous headache. However, there was no history of loss of consciousness, seizures or vomiting.

On examination, the patient was drowsy. However, the blood pressure and the pulse rate were stable. The Glasgow coma scale was 14/15.

Local examination revealed multiple abrasion marks and bruises over the lateral aspect of thigh. CNS examination revealed left sided 6th cranial nerve palsy on the day of admission.



(Table/Fig 1) Shows The Hyper Density Seen In The Midbrain Peduncle.



(Table/Fig 2) This Shows The Child Having A Lateral Rectus Paresis On The Left Side. Parental Consent Taken For This Photograph.

The patient was admitted for observation. On the third day of admission, he developed left sided lower motor neuron facial nerve palsy. Also, there were features like diplopia with compensatory head turn, suggesting abducens nerve palsy. The patient was managed conservatively, was discharged on the 6th day of admission and was advised to follow up after a month.

Discussion

Acute traumatic mid brain haematoma is an uncommon finding in patients, following head trauma[1],[2],[3]. Nevertheless, a primary brainstem lesion after a closed head trauma due to coup injury, which was initially demonstrated by Lindenburg in 1964, has been increasingly reported[7]. Some authors have described it as a discrete entity, attributable to a hyper extension mechanism of injury in persons who have sustained an impact on the forehead along the rostrocaudal axis[1],[3],[4] This often renders the patient to a severe (vegetative) state with a poor disease prognosis. Studies of primary brainstem injury indicated mortality rates of 83%, with up to one-half of the surviving patients confined to a persistent vegetative state[9]. In some cases however, an isolated type has been described, with unexpectedly good recovery[4],[1],[3] Schneider reported two cranial nerve 6 (abducens) injured patients, following traumatic neck hyperextension in a motor vehicle accident, who had suffered cervical vertebral fracture but no craniofacial fractures[5]. He hypothesized that the injury was secondary to upward and posterior displacement of the brainstem, causing stretch injury to the sixth cranial

nerve as it passes through the dorello's canal under the rigid petro-sphenoidal ligament. However, in a young patient with isolated lateral rectus palsy and no vascular risk factors, close observation is all that is required, followed by further investigations, only if there is an event of failure to recover within three months [6].

In a country like Nepal, an MRI in an acute setting is almost impossible. Here, the CT scan is what is available to a neurosurgeon to evaluate the posterior fossa, even though this may not be the ideal investigation. Before the introduction of the CT scan, many reports suggested that primary brainstem injury indicated a poor prognosis[7],[8] This case throws light on the importance to look for very subtle signs in the CT scan, and to try and correlate the clinical picture with the imaging.

Differential Diagnosis of Lateral Rectus Palsy

The differential diagnosis is broad, in part, reflecting that the long course of the abducens nerve although the trochlear nerve is three times longer. But in our case, the differential diagnosis has to be from the perspective of a traumatic injury. The various differential diagnoses which can be considered in such a case, would include injury to the abducens nerve nucleus, injury to the abducens nerve in the sub-arachnoid space, injury to the abducens in the superior orbital fissure and injury to the abducens in the cavernous sinus, which can happen with the dissection of the cavernous carotid or with a traumatic carotico-cavernous fistula.

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