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Case Report

Post Traumatic Cerebellar Ataxia – A Least Pondered Diagnosis: A Case Report

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Abstract

Ataxia means impaired co-ordination of voluntary muscle movement. It is a physical finding, not a disease and the underlying etiology needs to be investigated. It can be the patient's presenting complaint or a component among other presenting symptoms. Cerebellar dysfunction or impaired vestibular or proprioceptive input to cerebellum can cause ataxia. Though there are several etiologies post infectious ataxia is the most common one in children. But other rare etiologies of ataxia should also be considered based on the clinical presentation. We try to emphasise on this point by presenting a case of post traumatic cerebellar ataxia – a rare entity in children.

Introduction

Ataxia means impaired co-ordination of voluntary muscle movement. The onset is either acute, subacute or insidious and chronic. It can be either inherited or acquired. Acute cerebellar ataxia in children is most commonly post infectious etiology, and the most common infectious etiology is varicella.[1] The MRI Brain findings in case of post infectious cerebellar ataxia is a homogenous mass due to cerebellar swelling. It is usually caused by cerebellar dysfunction or impaired vestibular or proprioceptive afferent input to the cerebellum.[2] It can be the patient's presenting complaint or a component of the presenting symptom but not a disease and the underlying etiology needs to be investigated.

Case report

A one year old boy born to non consanguineous parents was brought with complaints of unable to stand, walk and difficulty in sitting without support. The child was apparently normal a day ago after which he had an accidental fall from staircase of ten steps high following which there was loss of consciousness for ten minutes with history of two to three episodes of vomiting which was non- bilious and non- projectile. Then the mother noticed that the child was not able to walk but stand with support. The child was taken to a nearby hospital where initial assessments were done, the child was stabilised and sent home. The child had lassitude for two days. The ataxia episode was increasing over these two days and the child was not able to sit or stand or walk without support. Then the child was brought to our hospital in view of worsening of symptoms and got admitted for further evaluation. The past history was of no significance. Antenatal and birth history was uneventful. He was a developmentally normal child and his anthropometry was appropriate for age. On examination GCS was 15 / 15, vitals were stable. On CNS examination, higher mental function, bulk, tone, reflexes were normal. Power was 3 / 5 in all four limbs. The child could neither sit without support nor stand on his own and gait was ataxic. Language domain couldn't be assessed. Other systemic examinations were normal. Based on the gross motor findings and trauma history we suspected traumatic brain haemorrhage or injury especially affecting the cerebellum causing ataxia. Baseline investigations like complete blood count, serum

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electrolytes, renal function test, serum calcium were done which were normal. MRI brain was done which revealed the presence of traumatic non- haemorrhagic contusion of left middle cerebellar peduncle with laminar cortical necrosis of left cerebellum and bilateral tonsils [Figure – 1]. So, the child was finally diagnosed to have post traumatic cerebellar ataxia. Neurosurgeon opinion was sought and advised to continue conservative management. The child improved clinically, vitals were stable; hemodynamically stable hence discharged after four days of admission with advice to review in OPD after two weeks but the child came for follow up only after one month and he was able to walk, sit and stand without support. Power improved to 5 / 5. Thus, the ataxia was confirmed to be of post - traumatic in nature.

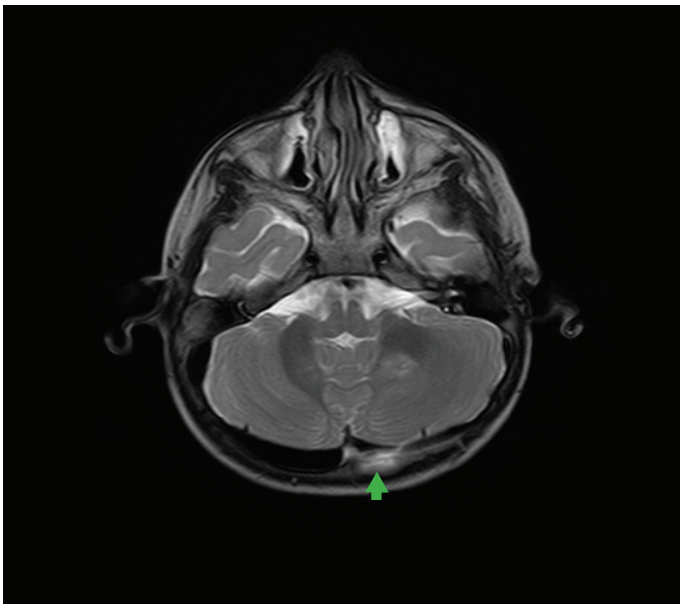

Figure 1. MRI Brain – green coloured arrow mark shows contusion of left middle cerebellar peduncle.

Discussion

Ataxia is a term for a group of disorders that affect co-ordination, balance and speech. In cerebellar ataxia, dysarthria, dystonia, titubation, tandem gait, rebound phenomenon, intentional tremor, inability to stand, dysdiadochokinesia, positive Romberg sign will be seen.

In our case the child was one year and presented with complaints of unable to stand, walk and difficulty in sitting without support along with a history of trauma. Based on these histories post traumatic cerebellar ataxia was suspected and an MRI brain imaging was done which revealed features suggestive of the same. Thus, based on the history and MRI findings the provisional diagnosis of post traumatic cerebellar ataxia was confirmed.

Post infectious cerebellar ataxia was the most common cause of ataxia. It shows a complete recovery within two weeks without any neurologic sequelae. Imaging studies are required only in atypical presentation or if there is no improvement after one to two weeks.[1] Jayendra RG has reported a post concussion ataxia in a two year old girl following a fall from a two feet high bed who presented with unsteadiness of gait, shaking of head and neck, became bedridden seven days later due to severe ataxia. The child had intentional tremor of hand, hypotonia, vision and speech were normal. MRI brain showed oedema at C1- C2 junction. Cervical traction and steroids were started, the child improved clinically and hence discharged after twenty days. On follow up after six months, the gait had improved; tone, power and reflexes were normal but the child had shaking of head with no other clinical sequel.[3] Fenichel has described a post-concussion syndrome which presents as ataxia or only unsteady gait that resolves within one to six months in children.[4] Lalitha S has briefly mentioned about the potential etiology for ataxia based on history, age wise common etiologies and also algorithm for workup of ataxia. The most common etiology in pre – school age group is acute post infectious ataxia – varicella being the most common infective agent.[5]

Conclusions

Post traumatic ataxia is not very common in children; most common cause is post infectious type. So, considering the least common cause of ataxia as a differential diagnosis is very important to narrow down to the proper diagnosis from all the differential diagnosis and also pivotal in the timely management.

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