

Scalp Haematoma in Cerebral Palsy Case due to Unknown Cause - A Rare Case Report

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ABSTRACT

Incidences of cerebral palsy (CP) in children are not quite common even though it is the most common motor disorder in children. Further quality of life in CP cases is not so good in young adult stages and has to face certain problems. However scalp haematoma formation in CP patient without injury to head is rarely been reported. The case is being reported for the first time from Malaysia.

We report on a unique case of scalp haematoma in an 18-year-old girl of known CP patient with unknown cause. No history of trauma or fall with any of the focal neurological signs or symptoms was found. Clinical examination showed soft boggy swelling of 8 x 10 cm size, involving most of scalp and upper face. CT - scan showed scalp haematoma with right orbital extraconal lesion. She underwent incision and drainage of scalp lesion; consequently around 100 ml of clotted blood came out. At follow-up she was doing well.

Keywords: CT scan, Involuntary movements, Mother

CASE REPORT

An 18-year-old girl, known case of cerebral palsy (CP) since birth presented to the Department of Surgery with gross generalized swelling of head including her face of 3 days duration accompanied by her mother. The mother initially noticed a solitary swelling of 2x2cm size, soft, non-tender over the left tempo-parietal region and was not much bothered about it. The following day she noticed an increase in size of the swelling, occupying most of the girl's scalp region. It was softer to touch than earlier. Without alarming much she just dabbed the swelling with warm water. On the 3rd day she was surprised to see the whole head to be swollen with face and presented to us as described above.

No symptoms such as pain, fever, bruising or fits was noted by the mother. Neither history of fall or trauma was noted. But the mother admitted that the girl used to roll around on the floor when she is not around even for a short duration. Clinical examination revealed a large, soft boggy swelling of 8 x 10 cm size, occupying the whole of the scalp extending into the right side of the face. No focal neurological signs or a sign of inflammation or tenderness was seen. The head never stayed still and was moving from side to side. Her physical examination and other organ system evaluation were completely normal.

With a clinical diagnosis of scalp haematoma, the patient was investigated. Her blood investigations showed an increased neutrophil count ($8.10 \times 10^3/\mu\text{l}$) while haemoglobin (7.3g/dl) was significantly decreased and blood glucose (6.2mmol/l) was within normal limit. On further evaluation with urgent CT - scan showed

features of diffuse scalp haematoma [Table/Fig-1] with maximum thickness of 2.3cm at left temporal region along with right orbital extraconal lesion.

She underwent emergency incision and drainage (I&D) and around 75 – 100 ml of clotted blood was drained. Corrugated rubber tube [Table/Fig-2] was placed bilaterally over the dependent areas. The postoperative course was uneventful. She was also given physiotherapy and speech therapy for her CP ailment. At follow-up patient was doing well with regard to haematoma.

DISCUSSION

Cerebral Palsy (CP) is alternatively known as Spastic paralysis; Paralysis - spastic; Spastic hemiplegia; Spastic diplegia or Spastic quadriplegia [1]. CP cases have been reported from both the developed countries like USA and Low & Middle Income Countries (LMIC) like Bangladesh and Nepal as well [2]. Recent reports show high prevalence rate of 3-4 cases per 1000 school age children [3].

CP is a group of disorders occurring in children due to damage to brain that controls movement, balance and posture. Mostly these occur during childbirth as in our case [1]. CP symptomatology is very diverse. Symptoms may change as a child gets older. The classical symptoms are spasticity, spasms, involuntary movements (e.g., facial gestures) and problems with balance [1] similar to the girl in the presented case showed change of the position of head now and then. In most cases of children with CP, either of the parents is heavily involved in life-care activities. Co-morbidities such as sleep disorders, malnutrition, intellectual abilities, scoliosis, behavioral problems and mental disorders are associated with CP [1] [Table/Fig-3]. So assistance should always



[Table/Fig-1]: CT - scan showing scalp haematoma.



[Table/Fig-2]: Drainage site & placement of corrugated tube.

[Table/Fig-3]: Scoliosis in patient.

be provided to patients with CP to optimize the quality of life [4]. In the presented case mother was taking care of the patient.

Virtually most children diagnosed of CP would survive into adulthood [5] as in our case the girl was 18-year-old. But the condition is poorly understood as the child moves through the phases of adulthood. Brain damage causing CP does not worsen through the lifetime, but the effect of CP manifests differently throughout the life span [5]. No single studies have shown the effects of CP into adulthood. Recent studies have shown that CP patients with higher motor impairment have more behavior disturbances and emotional difficulties at home which was as similar to the case presented here [5].

Children and adults with head trauma present vastly different scenarios. In order to determine the severity of head trauma, detailed history about the mechanism of injury, loss of consciousness, seizures and amnesia should be obtained [6]. But there was no history suggestive of any of the above features except for involuntary movements of head when the mother was away from the patient. Probably the girl would have accidentally injured / hit her head repeatedly while rolling down on the floor or to the edges of objects lying around the floor due to irregular posture and continuous involuntary movements of head, characteristic feature of CP leading to the formation of scalp haematoma. Of course, the issue of child abuse is always raised in children who have signs of head trauma [6]. That diagnosis is number one on the differential when there is no history of trauma and a scalp haematoma miraculously appears. But certain features on history and examination are essential to categorize as child abuse or Non-accidental injury (NAI) [7]. Considering these markers for NAI, this is her first admission being brought to the hospital by the mother and the history given by the mother is the only reliable source in this case. Moreover other siblings were normal and no other external injury was noted. Obviously from the way the mother was nursing the girl and the strong bond the girl had for the mother never made us to pick up an obvious case of child abuse under such circumstances. Lastly in our opinion, humanitarian concern should be a last resort in coming to final diagnosis taking into consideration of girl affected with Cerebral palsy than considering her as a normal child.

However complications seen in cases of CP include - bowel obstruction, learning and speech disabilities, pneumonia due to choking, urinary and fecal incontinence, injuries to bones and seizures [1], but no studies have shown the formation of scalp haematoma in CP cases. Scalp haematomas are graded as barely perceptible, moderate, or large. Large haematomas have obvious swelling and boggy consistency extending on to face similar to the presented case. A scalp haematoma is a surrogate marker for skull fractures, abnormalities that are frequently associated with intracranial injury. Parietal and temporal haematomas conferred a high risk for skull fracture (SF) [8]. A significant scalp haematoma is a firm indication for radiographic imaging. Computed Tomography (CT) provides indispensable information that guides patient's management as in present case [9]. Apart from CT, various biomarkers such as S100 calcium-binding protein B or S100B

and Neuron-Specific Enolase (NSE), have been evaluated recently in the diagnosis of brain injury in children [10]. Certain studies show close association of serum glucose levels with Traumatic Brain Injury (TBI) in children considering the prognosis [11], so was in our case most of the reports were normal except for reduced haemoglobin predicting good prognosis.

On diagnosing scalp haematoma with CT, I&D was done and clotted blood drained out. Counter drainage was kept in dependent areas. Apart from proper treatment of scalp haematoma, appropriate care was given to CP as well.

CONCLUSION

Scalp haematoma formation in cerebral palsy patient without injury to head is a very rare entity. One should be familiar with the co-morbidities and possible complications of CP. CP cases need close and keen assistance to lead a good quality of life and to avoid such trivial traumatic brain injury. Even though many biomarkers are currently used to diagnose TBI, CT scan is the key imaging method in diagnosing and guiding effective treatment of TBI in children. More research works are needed to portrait the effects of CP into adulthood.

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