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LETTER-TO-EDITOR

Depressed Fracture Involving the Posterior Fossa in a Child

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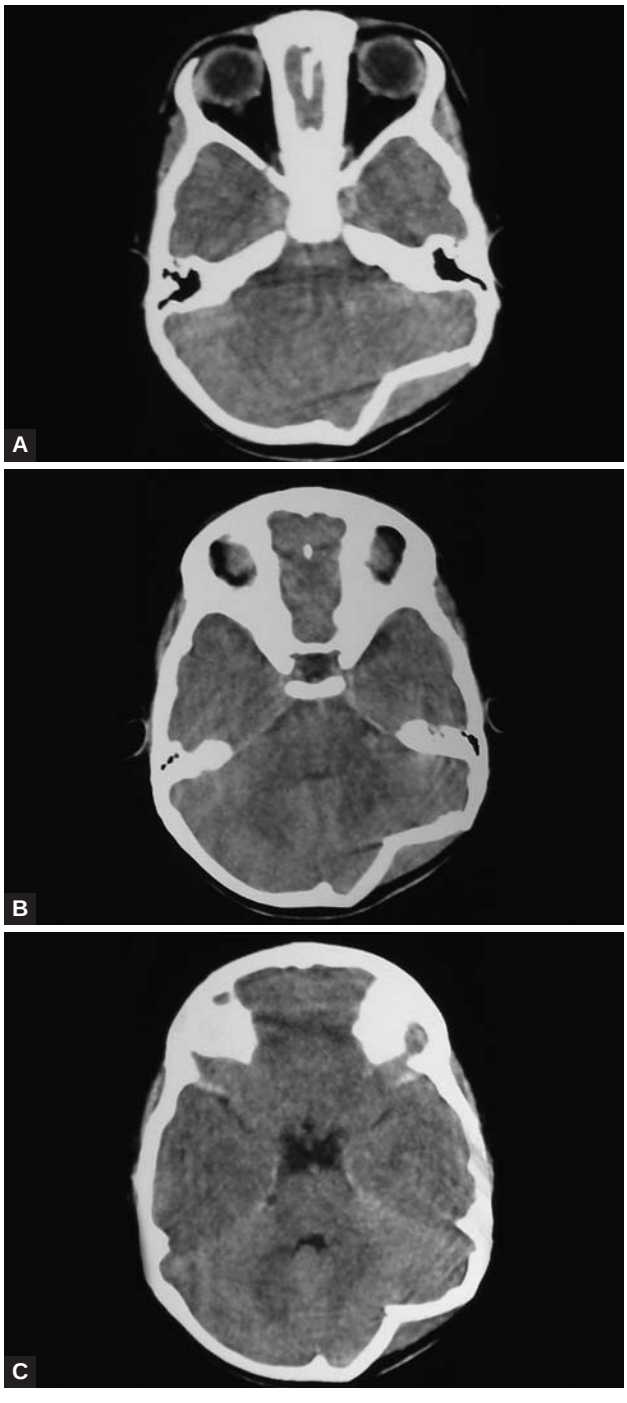
Depressed fracture involving the posterior fossa is an uncommon sequel of head injury.[1-4] A 4-year-old female child presented 8 hours after with the history of fall while playing from 4′ height at home on her back. She had loss of consciousness for 1 hour and multiple episodes of vomiting. There was no history of ear, nasal, oral bleed or seizures. Her general and systemic examination was unremarkable. The child was dull. Her glasgow coma scale (GCS) was E4, V5, and M6. Pupils were bilateral equal and reacting to light. There were no motor or sensory deficits. There was palpable depression over left occipital region with bogginess and tenderness. A computed tomography scan brain with bone window revealed significant depressed fracture of left occipital bone with mass effect (Figs 1 and 2). The patient underwent elevation of the depressed fracture (Figs 3A and B). She recovered completely.

The most common cause of posterior fossa fracture in children is fall followed by road traffic accidents.[1] In contrast to adults (because of multiple layers of muscle and soft-tissue covering the suboccipital region)[2,3] children have thin skull and relatively less soft-tissue in the suboccipital region which make them more vulnerable to sustain posterior fossa depressed fractures.[1] It has been estimated that 16% of children may have skull fractures and the presence of a skull fracture can increase the risk of an underlying intracranial injury by fourfold.[5] Brainstem and cerebellar compression can lead to brainstem dysfunction[2,6] which can be fatal.[6] In addition, these patients can have associated with cervical spinal cord injuries.[2] As for any given case of suspected head injury, the CT scan is the investigation of choice to investigate a case of suspected posterior fossa fracture.[7] We need to remember that the posterior fossa is a crowded space and has a relatively small volume and hence any lesion has the potential to further reduce its volume leading to rise in intracavitary pressure.[6] Most of the patients



Figs 1A to C: Axial CT sections of brain: showing depressed fracture of occipital bone on left side with inward displacement of the fracture fragments causing mild mass effect over the left cerebellar hemisphere and effacement of fourth ventricle on same side

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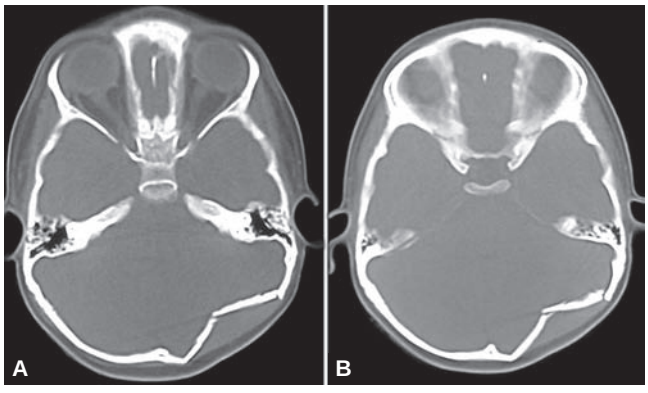
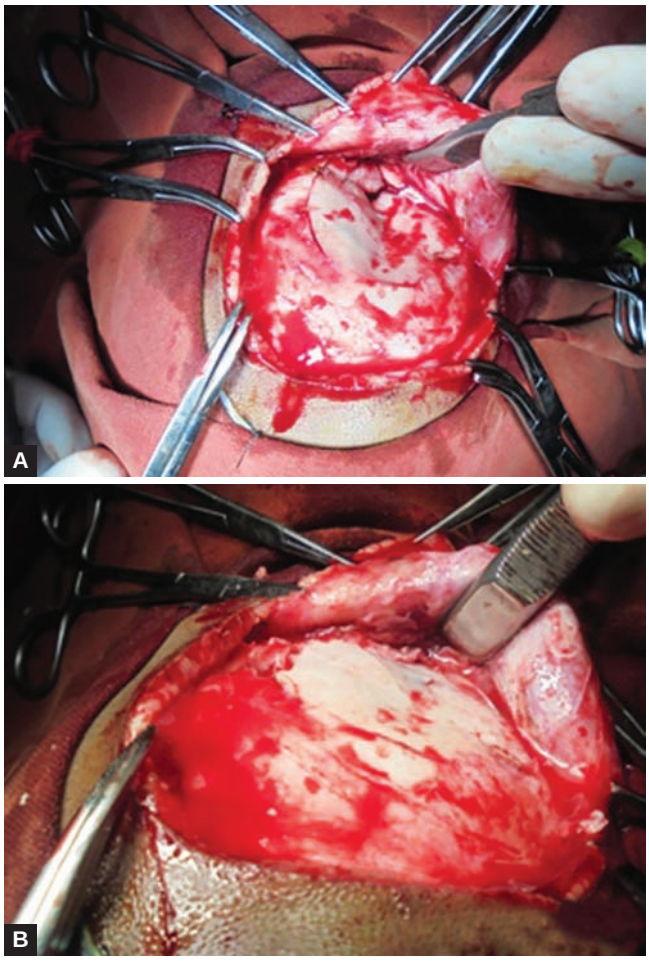


Figs 2A and B: Axial CT scan sections bone window showing segmental inward depressed fracture involving the occipital bone on left in detail



Figs 3A and B: Intraoperative photographs: (A) communized depressed fracture fragments involving occipital bone and (B) occipital bone after elevation of the fractured fragments

with posterior fossa depressed fractures can be managed conservatively.[4] The indications for neurosurgical intervention are neurological deficit (s) due to mass effect and compression of the underlying neural structures, compound injuries or cosmetic deformity.[6] Usually in neurologically well preserved and uncomplicated cases the outcome is excellent,[1,4] however significant compression of the brainstem structures is associated with poorer outcome.[6]

REFERENCES

1. Colak A, Berker M, Ozcan OE. Occipital depression fractures in childhood. A report of 14 cases. Childs Nerv Syst 1991;7(2): 103-105.
2. Motozaki T, Otsuka S, Sato S, Nakao S, Ban S, Fukumitsu T, Yamamoto T. [Unusual case of depressed fracture of the posterior cranial fossa associated with the syndrome of acute central cervical spinal cord injury]. No Shinkei Geka 1986; 14(8):1005-1008.
3. Motozaki T, Yamamoto T. Unusual case of depressed fracture in the posterior cranial fossa associated with the syndrome of acute central cervical spinal cord injury. Neurosurgical Review 1989;12(Suppl 1):595-599.
4. Karasawa H, Furuya H, Naito H, Sugiyama K, Ueno J, Kin H. Acute hydrocephalus in posterior fossa injury. J Neurosurg 1997;86(4):629-632.
5. Quayle KS, Jaffe DM, Kuppermann N, et al. Diagnostic testing for acute head injury in children: when are head computed tomography and skull radiographs indicated? Pediatrics 1997; 99(5):E11.
6. Bharath R, Arivazhagan A, Pruthi N, Bhat DI. Rare case of closed depressed fracture of the posterior fossa in an adult causing brainstem dysfunction: management dilemmas. Neurol India 2011;59(5):778-779.
7. Schutzman SA, Greenes DS. Pediatric minor head trauma. Annals of Emergency Medicine 2001;37:65-74.