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CASE REPORT

Subacute Subdural Hematoma mimicking Epidural Hematoma in Infant Patient

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ABSTRACT

Subacute subdural hematoma (SDH) is one of the most common clinical entities encountered in daily neurosurgical practice. The imaging of computed tomography (CT) has made a major impact on the diagnosis of subacute SDH. Although unilateral chronic lesion of SDH as a result of a space-occupying lesion is usually easily recognizable on CT scan, subacute SDH appearing in lenticular form may cause considerable difficulty, particularly when its appearance mimics the classic CT scan appearance of an epidural hematoma (EDH). Pathognomonic findings on CT scan are usually sufficient to establish a correct diagnosis, though the presence of such appearance can also be a misleading finding, especially in an infant patient.

Keywords: Computed tomography scan, Epidural hematoma, Subacute subdural hematoma.

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INTRODUCTION

Subacute subdural hematoma (SDH) is one of the most common clinical entities encountered in daily neurosurgical practice. Subacute SDH is a thin encapsulated collection of old blood, mostly liquefied and located at the dura–arachnoid interface.[1-3] We describe here an interesting case of hyperdense intracranial lesion that has never been reported previously; its lenticular form was diagnosed as an acute epidural hematoma (EDH) preoperatively, but was revealed to be an encapsulated subacute SDH intraoperatively.

CASE REPORT

Clinical History

A 5-month-old baby girl presented with a history of fall on her back head, focal seizure on left side of her extremity, and mild headache. Her general and systemic examination was unremarkable. Higher mental functions were normal. She had mild bilateral papilledema. There was grade III/V weakness involving the left upper and lower limb with exaggerated ipsilateral deep tendon reflexes and extensor plantar. There were no other neurological deficits. Her computed tomography (CT) scan imaging revealed right parietooccipital lenticular form (convex) hyperdense lesion with mass effect (Fig. 1).

Preoperative working diagnosis of parietooccipital EDH was made. A craniotomy evacuation from a supine position was performed. Intraoperatively, there was no clotted blood above duramater, but the duramater was tense and bluish (Fig. 2A). We decided to open the dura with a horseshoe incision to reveal an encapsulated SDH covered with a thin fresh hematoma (Fig. 2B). This was easily removed *en bloc* because the capsule had not adhered to the brain cortex. The capsule was smooth, firm, and filled with solid fresh blood. Histopathological report revealed fibrinous structural membrane that was thicker on the dural side (Fig. 3). Her Glasgow coma scale score improved to 15 soon after surgery and her postoperative course was uneventful. She left our hospital with slight left hemiparesis.

DISCUSSION

An EDH occurs infrequently among the large population of infants and children seen in emergency departments

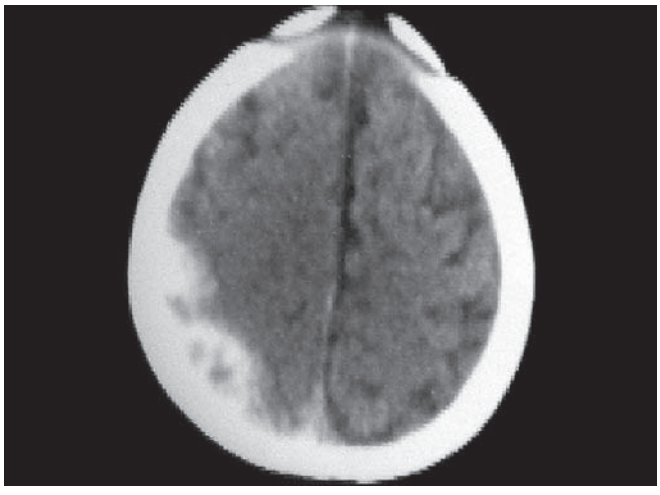

Fig. 1: Noncontrast axial CT scan showed a hyperdense lesion lenticular (convex) in shape in the right parietooccipital region as a classic CT scan appearance of EDH

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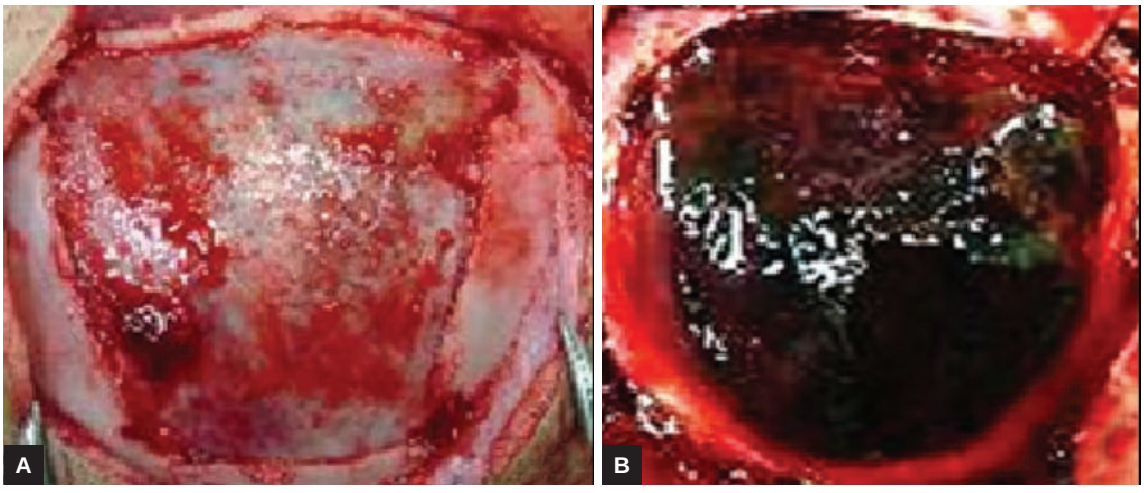

Figs 2A and B: (A) Intraoperatively, there was no clotting blood above duramater, but the duramater was tense and bluish in color; and (B) the encapsulated SDH was covered with thin fresh hematoma and it was easily removed

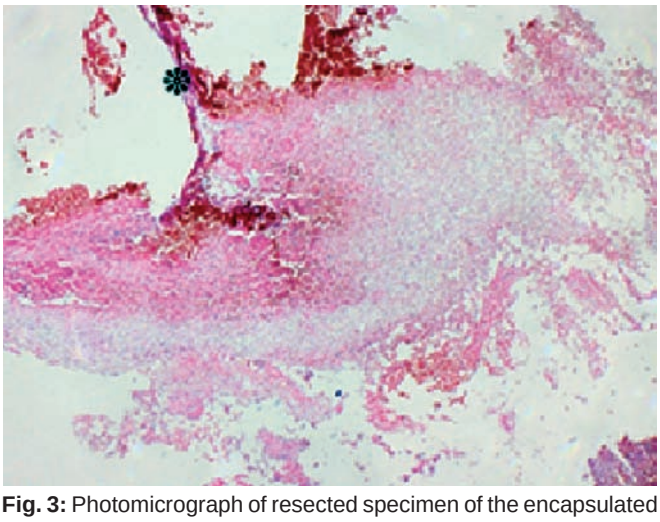

Fig. 3: Photomicrograph of resected specimen of the encapsulated hematoma (hematoxylin and eosin stain, loupe) showing a fibrinous single structural membrane that was thicker on the dural side (asterisk)

and physician offices for head trauma. It is present in ±1 to 3% of pediatric closed head injury admissions, with a male predominance of 2 to 2.5:1.[4-6] Most of the cases are diagnosed on cranial CT scan. A specific finding resembling subacute SDH is the displacement of the brain parenchyma away from the skull and the usual crescent shape. Also, several other indirect features occur due to the displacement of the brain, e.g., effacement of the sulci, compression of the ipsilateral ventricle leading to midline shift, deformity of the normal ventricular anatomy, and obliteration of the basal cisterns.

Magnetic resonance imaging (MRI) is generally considered superior to CT scan 48 to 72 hours after injury. Although CT scan is better at detecting bony pathology and early intracranial bleeding, it misses approximately 10 to 20% of abnormalities seen on MRI, especially in the subacute and chronic settings.[7] Most authors would agree surgical candidates should undergo evacuation as soon as possible, if the delay in obtaining an MRI could delay care.

Photomicrograph of resected specimen of the encapsulated hematoma (hematoxylin and eosin stain, loupe) shows a fibrinous single structural membrane that was thicker on the dural side (asterisk) (Fig. 3). To avoid this confusion, if available, MRI would be better than CT scan in identifying these lesions.[8-10] Coronal MRI might be useful for discriminating lenticular form of subacute SDH from EDH since the relationship between the duramater, hematoma, and subarachnoid space can be clarified.[11]

CONCLUSION

Special attention must be given when CT scan shows lenticular form of hematoma in an infant patient. Its unusual imaging characteristics might lead to confusion between extra- or intradural hematoma. We highly recommend to confirm differential diagnosis by using MRI for better diagnosis before surgery.

CONSENT

Informed consent was obtained from the patient's family for publication of this case report and any accompanying images. The patient's family was present at the time.

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