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Letter to Editor

Ipsilateral Two Spontaneous Chronic Calcified Epidural Hematoma

Sir,

A 12-year-old child presented with a complaint of headache and vomiting following fall from bike, 2 days ago. Computed tomography (CT) head revealed acute on chronic calcified epidural hematoma (EDH) at the right frontal and parietal region with dilated ventricles and no midline shift [Figure 1]. The child improved on conservative treatment. His mental and neurological functions were normal, and there was no papilledema. He had a history of tubercular meningitis and hydrocephalus at the age of 4 years. Shunt surgery was advised then but refused by parents. There was no history of significant head injury or coagulation disorder. Magnetic resonance imaging brain confirmed the findings and showed blood of various stages [Figure 2a-d]. The maximum thickness of hematoma was 4.7 cm. He has been on a regular follow-up. At follow-up after 1 month, he showed neither any recurrence of previous symptoms nor of neurological deterioration. At follow-up after 3 months, the patient was not harboring any symptoms. His NCCT head [Figure 3] head revealed disappearance of smaller EDH (frontal) and reduction in the size of parietal larger EDH (size 2.4 cm).

The patient's parents gave informed consent for patient's data publication. We took approval from ethical committee at our institute.

Chronic EDH is a rare type of bleed. It has been mostly reported in the younger age group.

The probable hypothesis is the presence of lax adhesions between the dura and the calvarium.[1] The blood products cause inflammatory reaction that may be the probable cause of calcification.[1] In children, EDH is mostly of venous origin, and venous blood takes longer time to accumulate in adequate volume to cause significant mass effect. That is, why children present with chronic EDH and symptoms of headache and seizures rather than acute deterioration in consciousness.[2] The probable mechanism of calcification in chronic subdural hematoma (CSDH) is the persistence of blood product leading to fibroblasts activity and secretion of local factors which cause calcification.[3] The calcification usually takes around 6 months to form in a CSDH.[3]

The occurrence of two or more EDHs on the same side is quite rare, and there is a single case report of two chronic EDHs on the same side.[2] Our case is second such case of multiple EDH on the same side.

Furthermore, expansion of an EDH may also result from repeated bleeding from the inner table of the skull or due to oozing from the dural surface veins.[4] In our case, rebleed occurred after trauma. Such episodes may cause deterioration and needs surgical decompression. This case had no midline shift. Observation trial showed significant radiological improvement.

The management guidelines for chronic EDH are not defined due to lack of large cohorts. According to Sinha and Borkar, conservative management of EDH is not always effective in children and serial CT head is mandatory if planning conservative management.[5] Urgent evacuation of EDH should be considered for children with progressive neurological deterioration.[5] We think that the management strategy should be similar to chronic calcified subdural hematoma as both are chronic and calcified and have a membrane separating from the brain. That's why surgery may be considered if there are acute deterioration, mass effect, and no resolution of hematoma on conservative

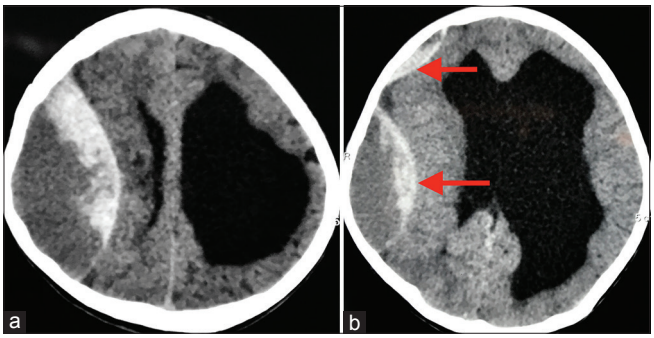

Figure 1: (a) Non-contrast CT head showing single chronic calcified EDH with some acute blood (b) NCCT head showing both chronic EDH at right frontal and parietal region, calcification and acute bleed in both

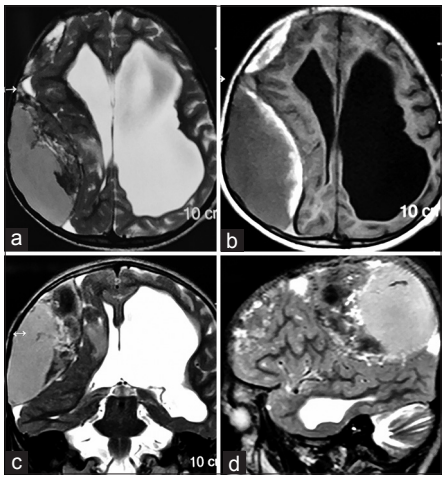

Figure 2: (a) T1 axial magnetic resonance imaging brain showing various stages of blood in chronic epidural hematoma along with compressed ipsilateral cerebral hemisphere and chronically dilated left lateral ventricle (old meningitic hydrocephalus sequelae); (b) T2 axial image showing various stages of blood in epidural hematoma and cerebrospinal fluid cleft at the edges of both epidural hematomas; (c and d) T2 sagittal and coronal cut showing degree of compression on the right hemisphere and no midline shift or tentorial herniation

Figure 3: Noncontrast computed tomography head after 3 months of conservative treatment showing disappearance of anterior smaller epidural hematoma and significant reduction of larger epidural hematoma

management. The conservative treatment and observation may be tried if there is no mass effect.

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Conflicts of interest

There are no conflicts of interest.

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