

## CASE IMAGE

# Immediate improvement in GCS following needle aspiration of bilateral traumatic subdural effusion in a child in emergency room

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**Abstract**

A minor head injury can cause traumatic subdural effusion in a child. They often present to pediatric emergencies initially, and there is a delayed referral to neurosurgery. In the emergency room, they should undergo subdural effusion needle aspiration, which can result in an immediate improvement in GCS.

**KEYWORDS**

GCS, needle aspiration, subdural effusion, trauma

The collection of CSF fluid, xanthochromic or slightly blood-tinged fluid between the dura and the arachnoid membrane is known as traumatic subdural effusion (TSE). Mayo was the first to report it in 1894. TSE is a common occurrence but little is known about its pathogenesis, clinical relevance, management, or outcome after a small head injury. A minor trauma can cause the dura arachnoid interface to separate, which is the first step in the formation of a subdural effusion. Incidence varies from 0.81 to 13% regardless of the degree and site of brain injury.<sup>1</sup>

For 3 days, a 4-month-old child had been vomiting, having convulsions, and had an abnormal sensorium. He had previously fallen from his mother's lap 20 days prior. He had GCS = 11 (E2V4M5) with bilateral reactive pupils on examination. On a non-contrast computed tomography

(CT) scan of his brain, he had a traumatic subdural effusion on both sides. (Figure 1) In the emergency room, he had subdural effusion needle aspiration (100 ml from each side), which resulted in an immediate improvement in GCS. (Figure 2A,B).

TSE needs to be differentiated from other causes of subdural effusions in children, mainly external hydrocephalus, chronic subdural hematoma, effusions secondary to meningitis, intracranial hemorrhage, and cortical atrophy.<sup>1</sup> Antiepileptic medications and acetazolamide therapy can be used to treat the majority of children with TSE. Clinical symptoms improve, seizures become less frequent, and effusions fade away over time. In cases where there is a considerable mass effect, surgical decompression, such as drainage or shunting, is recommended.<sup>2</sup>

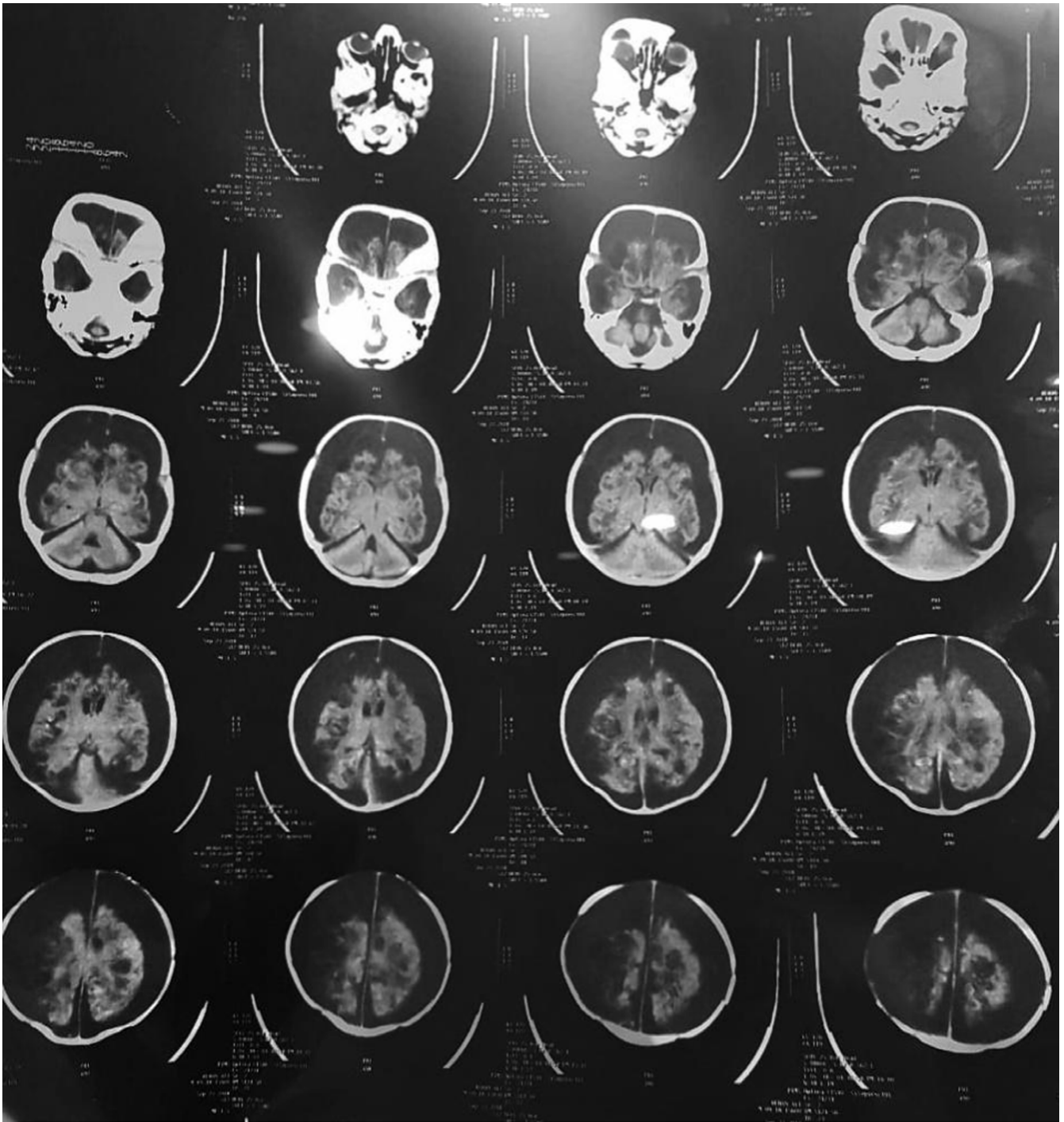
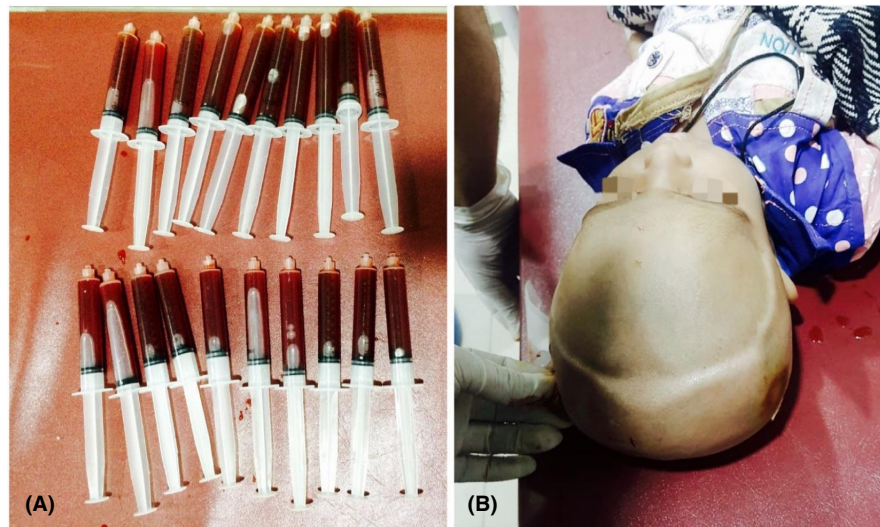


FIGURE 1 Non-contrast axial computed tomography (CT) brain showing bilateral traumatic subdural effusion

**FIGURE 2** (A) showing 20 syringes of 10 ml size each with aspirated traumatic effusion. (B) post-aspiration appearance of head



### AUTHOR CONTRIBUTIONS

AK was involved in the management of the patient. AK wrote the manuscript while PKY analyzed the data. Both the authors read and approved the final manuscript.

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### CONFLICT OF INTEREST

The authors declare no conflict of interest.

### DATA AVAILABILITY STATEMENT

All the data is available within the article.

### CONSENT

Written informed consent was obtained from the father of the child for publication of images.

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### REFERENCES

1. Kumar R, Singhal N, Mahapatra AK. Traumatic subdural effusions in children following minor head injury. *Childs Nerv Syst.* 2008;24(12):1391-1396. doi:10.1007/s00381-008-0645-1
2. Tsuang FY, Huang AP, Tsai YH, et al. Treatment of patients with traumatic subdural effusion and concomitant hydrocephalus. *J Neurosurg.* 2012;116(3):558-565. doi:10.3171/2011.10.JNS11711

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