

Imaging Sciences Interesting Cases

CASE 479

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CLINICAL PRESENTATION: Patient is a 4-month-old girl presenting with apnea and lethargy,

IMAGING FINDINGS: See below.



Figure 1: Subdural blood at the right frontal lobe, right temporal lobe and posterior falx (arrows). Loss of gray white differentiation secondary to cerebral edema.

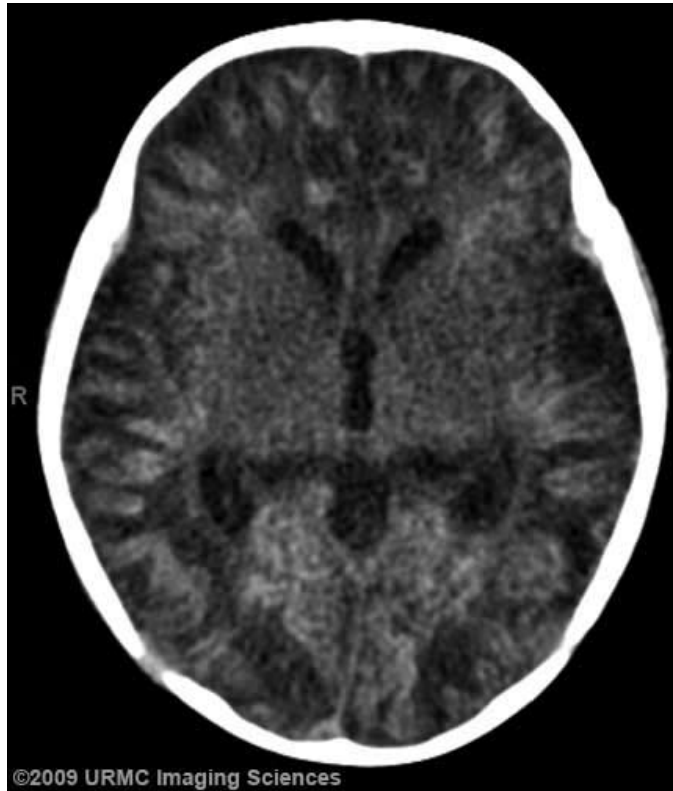


Figure 2: Gyriform high density and low density in the cerebral white matter. Lateral, third and fourth ventricles are dilated.

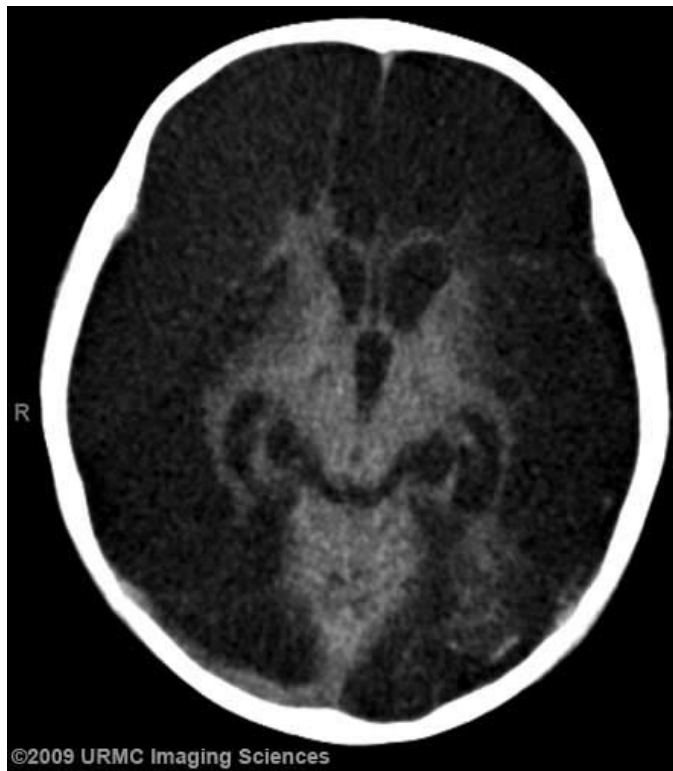


Figure 3: Diffuse encephalomalacia of bilateral cerebral hemispheres. Basal ganglia and cerebellum is preserved. Ventricles continue to be prominent.

DIAGNOSIS: Shaken baby syndrome

DISCUSSION: Shaken baby syndrome is an extreme form of child abuse that is due to extreme cranial acceleration from violent shaking. Shaken baby syndrome is unlikely to be an isolated event, as there is usually prior evidence of abuse. Infants are very susceptible to shaking because their neck muscles are not strong enough to support their relatively large head, and because their brains are not completely myelinated. Subdural hemorrhage, due to disruption of bridging cortical veins, is the most common finding due to this method of abuse. Cerebral edema and subarachnoid hemorrhage are also seen, as well as retinal hemorrhages which are due to an abrupt rise in intracranial pressure. Although cerebral contusions are not as frequent, diffuse axonal injury is often demonstrated. Encephalomalacia is a typical late finding. There is a significant morbidity and mortality with this type of abuse, as 60% will either die or have severe mental retardation, spastic quadriplegia or severe motor dysfunction after initial presentation. The severely brain injured children that survive may suffer with cortical blindness or seizure disorders.

REFERENCES:

1. American Academy of Pediatrics: Committee on Child Abuse and Neglect. Shaken baby syndrome: rotational cranial injuries-technical report. *Pediatrics*. 2001 Jul;108(1):206-10. PMID: 11433079 [PubMed]
2. Lee Y, Lee KS, Hwang DH, et al. MR imaging of shaken baby syndrome manifested as chronic subdural hematoma. *Korean J Radiol*. 2001 Jul-Sep;2(3):171-4. PMID: 11752989 [PubMed]