Neurosurgical Forum
LETTERS TO THE EDITOR

Subdural collections and abusive head trauma

TO THE EDITOR: I read with interest the article from Tucker et al.⁵ that focuses on incidental subdural collections, which can be associated with benign enlargement of subarachnoid spaces (BESS) (Tucker J, Choudhary AK, Piatt J: Macrocephaly in infancy: benign enlargement of the subarachnoid spaces and subdural collections. *J Neurosurg Pediatr* 18:16–20, July 2016). The prevalence of incidental subdural collections among imaging studies of patients with BESS in this large retrospective series seems rather low (18 of 311, or 5.8%). The article also suggests that greater subarachnoid space depth is associated with an increased prevalence of such collections, which were found in 15% (7 of 46) of cases with Grade 2 BESS (depth of the subarachnoid space ≥ 1 cm).

I fully agree with the authors' conclusions.

I also approve of the authors' use of the term of subdural "collection," as opposed to "hematoma." As they point out, we do not know the exact composition of such incidental subdural collections, as they are rarely drained or punctured. While they are assumed to be a mixture of CSF and blood, there might also be a high protein content, as is found in aseptic empyema.

As the incidental subdural collections are not illustrated in the article, however, I would like to highlight some major features that need to be checked for:^{1,2}

- The collections show homogeneous density/intensity.
- The collections are located in anterior areas (frontoparietal).
- The collections never demonstrate hemosiderin clots at the vertex (the so-called "lollipop" or "tadpole" sign) on T2*-weighted (or susceptibility-weighted) sequences, which are sensitive to small hemosiderin deposits.^{3,4}
- The brain parenchyma looks completely normal.
- The collections are never associated with evidence of subdural hematoma (hyperdensity on CT or hyperintensity on MRI) in the tentorium or interhemispheric space.

- The collections are clinically silent (aside from the macrocephaly), i.e., without even mild neurological signs, such as vomiting, and without fontanelle bulging.¹

As the presence of subdural collections immediately raises the concern of nonaccidental trauma, should any of the above criteria not be met, the pediatrician should seriously consider the possibility of abusive head trauma. When available, the head circumference chart is also a key sign that a subdural collection may be related to a previous subdural hematoma and thus to a previous episode of shaking.¹

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Disclosures

The author reports no conflict of interest.

Response

We appreciate Professor Adamsbaum's interest in our paper.

Her comments about the limitations of our study are fair: We did not record the locations, volumes, or imaging characteristics of the collections that we detected. These factors deserve consideration for further study.

Her generalizations about issues that must raise suspicion of abuse are intuitive and consistent with experience. We note the gravity of the judgments that must be made based on these and other considerations and the challenge of collecting the data required to substantiate such clinical imaging correlations.

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