Author's response to reviews

**Title:** Thrombosed Traumatic Aneurysm of the Occipital Artery: Case Report and Review of the Literature

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**Author's response to reviews:** see over
Dear Editor/Reviewers,

Thank you very much for your insightful comments to our submission, "Aneurysm of the occipital artery: case report and review of the literature" (5170372766785560). We have attempted to modify the manuscript and address the queries from the reviewers as best we could. Please find below our responses to the reviewers comments.

Reviewer #1:

1. T2 MRI scans show a heterogeneous appearance of this pathology is not completely thrombosed. This should be explained or corrected.

   a. The heterogenous appearance of the mass on T2 MRI suggests either a partially thrombosed lesion or hematoma of differing ages. This was added to our manuscript.

2. Auscultation prior to surgery performed?

   a. We palpated the aneurysm on examination and did not appreciate a thrill, but we did not auscultate for a bruit. We have also added this to the text.

3. Is micro-Doppler examination was performed during the surgery?

   a. Unfortunately we did not Doppler the aneurysm. We were not expecting an aneurysm upon dissection and encountered significant bleeding that prohibited careful examination and inspection with a Doppler. This has also been added to the text.

4. Excision of the macroscopic cross section for publication should be done if you have a photograph of the structure of the thrombosed.
a. Unfortunately, we did not section the excised scalp mass before submitting it to pathologic examination. Therefore, we do not have any corresponding photographs.

5. Intraoperative photograph also demonstrated the link between mass arteries.

a. Unfortunately, we do not have any other intraoperative photographs to show the scalp mass in situ, other than Figure 2. The reviewer is correct that a closeup photograph of the lesion may have shown the association between the lesion and the parent artery.

6. These types of cases, surgery is there another way in the differential diagnosis. A rare phenomenon, and the differential diagnosis should be treated surgically, the article emphasized that the discussion section.

a. We agree that this is an unusual case and is important to include in the differential. We also concur that these should be treated surgically. Thank you very much for the insightful feedback.

Reviewer #2:

1. The Authors emphasize the importance of considering a traumatic aneurysm in their differential and how important this is in order to avoid important bleeding in the pediatric population, could they please add some more information in regards to the arterial bleeding they had during surgery, what happened and why? Was the aneurysm unexpected, was there a problem with the dissection?

   a. We had not anticipated the lesion being an aneurysm and encountered significant bleeding early in the exposure. We had to occlude the feeding artery in a less than ideal situation. Blood loss can be critical in young infants secondary to blood volume and could therefore unnecessarily increase the risk. We have attempted to add this to the text.

2. The Authors emphasize the role for duplex scanning, CT angio and DSA in the work up, could they explain in what situations MRI is sufficient to take the patient to OR?

   a. With these extracranial lesions that may represent an aneurysm, MRI may be sufficient when the surgeon anticipates an aneurysm and obtains proximal control early. However, if the aneurysm is not thrombosed or a palpable thrill is felt, the surgeon may consider a CTA or DSA to assist in pre-op planning and to rule-out any intracranial communication. Ultimately, it is left to the discretion of the surgeon as there is insufficient evidence to make any recommendations.
3. This is a very interesting case and well documented and has the potential to become a good reference especially for residents and young surgeons. Could the Authors give some more information in regards to the pathogenesis of a traumatic aneurysm but also traumatic pseudoaneurysm?

   a. Any theories that we may propose would simply be speculation given the infrequent nature of this pathology. Certainly collagen disorders has been associated with a higher incidence of true aneurysms where all three layers are involved and inflammation from trauma or infection is often related to pseudoaneurysms which has been more frequently reported in this location. However, aside from the anatomic differences and layers involved, no clear pathophysiologic differences have been identified.

Thank you very much for your time and consideration of our submission. We hope that our revisions sufficiently improve our manuscript and that it is acceptable for publication. Please notify us of any other questions or concerns.

Sincerely,

Andrew Jea MD

Steven Hwang MD