

A Case of a Retained Intraorbital Wooden Foreign Body

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Report

Introduction

Penetrating orbital injuries are an uncommon occurrence that can result in significant morbidity. Especially rare are those that involve vegetative matter, with recent reviews noting 56 reported cases. Periocular trauma with vegetable matter in particular necessitates a detailed history and meticulous exam as it can be challenging to identify radiographically. Here we describe the case of a 4-year-old girl with a retained intraorbital wooden foreign body.



Figure 1. Wooden foreign body visualized in left lower eyelid before (A) and after removal (B). The base of the wound was unable to be visualized at bedside given the depth of the penetrating injury.

A 4-year-old girl presented to the emergency room after sustaining blunt trauma to the face. While playing in the backyard following dinner, her 6-year-old sister accidentally struck her in the face with a large branch. In the emergency room, a small foreign body was visualized in the left lower lid. The wound was found to be deep, as a 17 mm x 4 mm wooden foreign body was removed from the left lower lid (Figure 1). The patient was discharged on oral cephalexin with topical erythromycin ointment with follow up in approximately 36 hours.

At follow up, the child had developed left orbital cellulitis with chemosis and restriction of infraduction. Purulent material was spontaneously draining from the wound. The child was sent immediately back to the emergency room for intravenous antibiotics, imaging and surgical exploration. MRI was performed but did not identify a foreign body or abscess. The radiologist however did comment on a “pocket of air” inferiorly in the left orbit (Figure 2).

The child underwent an anterior orbitotomy which yielded an 18 mm x 8 mm retained intraorbital wooden foreign body. The child was maintained on broad-spectrum IV antibiotics for the polymicrobial infection with transition to levofloxacin for a 21-day course. The child continued to improve and had no further complications after 2 months.

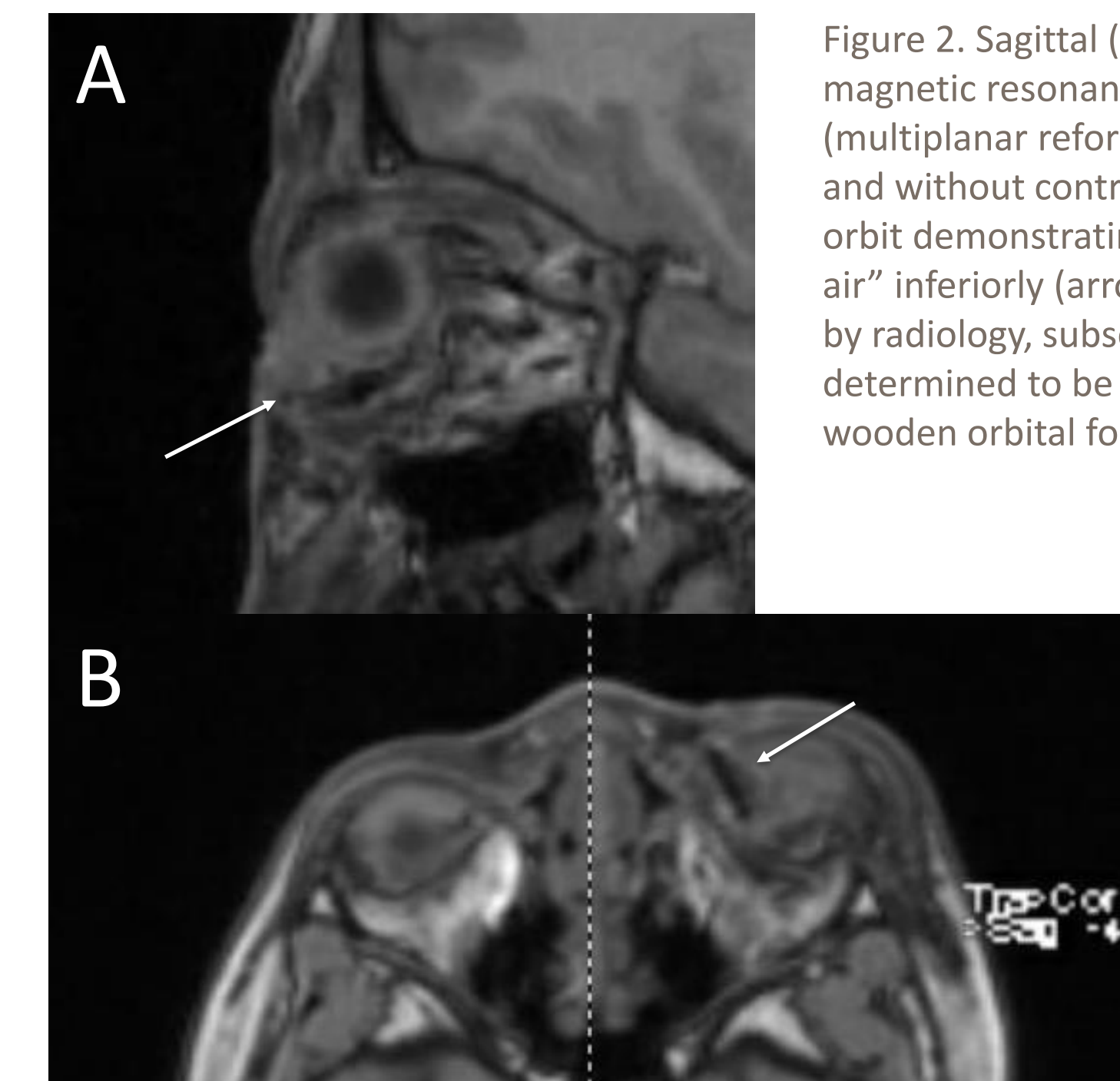


Figure 2. Sagittal (A) and axial (B) magnetic resonance imaging (multiplanar reformation) with and without contrast of the left orbit demonstrating a “pocket of air” inferiorly (arrows) as detailed by radiology, subsequently determined to be a retained wooden orbital foreign body.

Conclusion

In the setting of blunt trauma with wooden objects, a high index of suspicion is necessary to identify retained foreign bodies. Wooden foreign bodies can vary in radiographic appearance based on age and water content of the vegetable matter. As a result, retained vegetable matter is notoriously challenging to identify with classic forms of imaging.

For other body parts, ultrasound has been used to reliably identify wooden foreign bodies. Retained wooden foreign bodies are hyperechoic structures with acoustic shadowing when using ultrasound.

For cooperative patients, orbital ultrasound could be considered to assist in diagnosis and management. Surgical intervention remains as the definitive management for patients with potential retained organic foreign bodies.

While our patient did well despite delayed identification of the second wooden orbital foreign body, retained vegetable matter can result in significant morbidity and even mortality. Reported complications include cicatricial changes, damage to extraocular muscles, ptosis, panophthalmitis, orbital cellulitis, and CNS extension of infection. Although retained wooden foreign bodies are rare, a high index of suspicion is necessary given the associated morbidity of delayed diagnosis.

References

1. American Journal of Roentgenology. 2002;178: 557-562. doi:10.2214/ajr.178.3.1780557
2. Ho VT, McGuckin JF, Smergel EM. Intraorbital wooden foreign body: CT and MR appearance. AJNR 1996;17:134–136
3. Polat B, Atici Y, Gürpınar T, Polat AE, Karagüven D, Benli IT. Diagnosis and Treatment of Retained Wooden Foreign Bodies in the Extremities using Ultrasound. Acta Ortop Bras. 2018;26(3):198-200. doi:10.1590/1413-785220182603180345
4. Rupert, J., Honeycutt, J. D., & Odom, M. R. Foreign Bodies in the Skin: Evaluation and Management. American family physician. 2020; 101(12), 740–747.
5. Voss, J.O., Maier, C., Wüster, J. et al. Imaging foreign bodies in head and neck trauma: a pictorial review. Insights Imaging 12, 20 (2021). <https://doi.org/10.1186/s13244-021-00969-9>
6. You YY, Shi BJ, Wang XY, et al. Intraorbital wooden foreign bodies: case series and literature review. Int J Ophthalmol. 2021;14(10):1619-1627. doi:10.18240/ijo.2021.10.21