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Video

Three year retained orbital plant material☆,☆☆

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ABSTRACT

Purpose: The diagnosis of retained intraorbital organic foreign body can pose significant challenges without corroboration from a detailed patient history even when presented with clear and accurate imaging.
Observations: We present a case of a 65-year-old woman with an upper lid lesion that she noticed 1.5 years ago which subsequently became inflamed four weeks before evaluation. A one cm-long green plant stem was removed from a superior orbital tract, leading to symptom resolution. The patient recalled a fall three years prior, during which the initial embedding occurred. Following the fall, she experienced binocular diplopia for two months which spontaneously resolved.
Conclusions and Importance: We believe this is one of the first cases of a retained intraorbital organic foreign body that initially presented with symptoms, resolved, and subsequently presented years later with different symptoms, leading to the discovery of the foreign body. This case serves as an important reminder to physicians that retained organic foreign bodies can have long quiescent periods and delayed clinical presentations.

Acute presentations of a retained organic foreign body typically involve purulent inflammation, abscess formation, gangrene, or tetanus.[1] Delayed or chronic presentation, while less common, may result in granulomatous tissue reaction, fistula formation, and osteomyelitis.[1] Those delayed presentations described in the literature typically present within weeks to months of the initial injury.[1–3] We present a case of retained intraorbital plant material that went undetected for approximately three years.

1. Case presentation

A 65-year-old Caucasian female presented with a 3–4 week history of increasing inflammation of a lesion of her left upper lid just inferior to her brow (Fig. 1A). She reported that the lesion had been present for about 1.5 years but only recently had become tender and erythematous. The lesion was not readily apparent until the left brow was raised after which there appeared a 1.5 cm × 1.0 cm mobile, non-tender lesion with mild purulent discharge (Fig. 1B). She was started on oral clindamycin with plans for excision once the purulent discharge improved. The patient returned several days later with increased inflammation of the lesion. The lesion was presumed to be an infected or inflamed sebaceous cyst based on appearance. An office excision was planned for the same day.

During surgical removal, the skin was incised and the area of the lesion appeared significantly abnormal and extended into the anterior superior orbit (Fig. 2). Careful dissection was continued around the area of abnormal tissue and during dissection a 1.0 cm length green plant stem emerged from what appeared to be a tract in the superior orbit. The tract was only partially removed as the remaining tract was invested near the trochlea (Fig. 2). The pathology report eventually confirmed foreign plant material and granulation tissue with acute and chronic inflammation.

The patient was initially quite surprised by the appearance of plant material and denied any recent gardening accident or trauma. She did note that 3 years earlier she had fallen while exiting a vehicle, striking her left superior orbital rim. Immediately following the injury she noted a small abrasion just superior to her left brow which did not develop into any cellulitis or infection and healed without intervention. She

☆ Claim Of Priority: After conducting a literature review on 05/24/2024 utilizing PubMed, Google Scholar, and Scopus using the key words "retained orbital material", "retained foreign material", "ocular trauma", "intraorbital foreign body", we found one similar study of a retained intraorbital organic foreign body with a long quiescent period, however, the presentation of our case is unique in that the organic foreign body may have traveled from its initial embedment to its ultimate presentation through an intraorbital tract.☆☆ Presented at the 2020 Annual Spring Meeting of the American Society of Ophthalmic Plastic & Reconstructive Surgery.

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developed binocular diplopia that lasted for about 2 months following the injury that resolved on its own. Following the injury, she had presented to another provider and an MRI at that time demonstrated an extraconal soft tissue lesion in the superiomedial quadrant of the left orbit between the superior oblique and the superior rectus that was isointense to T1 and hypointense to T2 (Fig. 3). It was thought to be a hematoma. Because her symptoms resolved, other than a small scar just superior to her left brow, no further imaging or intervention was initiated at that time.

After removal of the plant material, the patient did well and did not develop any further symptoms (Fig. 4). Follow up imaging immediately after excision and six months following her surgery demonstrated inflammatory material surrounding the trochlea and superior oblique without progression (Fig. 5).

2. Discussion

While inert foreign bodies, such as glass or metallic fragments, may cause little inflammation, organic intraorbital foreign bodies most commonly present acutely with significant inflammatory or infectious sequale.[1] Intraorbital foreign bodies are particularly dangerous, potentially leading to globe rupture, optic neuropathy, brain abscess, and cerebral abscess.[2] Delayed or chronic presentation, while less common, usually present weeks to months after the initial injury and may result in granulomatous tissue reaction, fistula formation, and osteomyelitis.[1–3] One other report recently published details a similar case of intraorbital retained material with a long quiescent period, however, the organic material did not traverse an intraorbital tract as the presentation in this case suggests.[4]

The diagnosis of retained intraorbital organic foreign body can pose significant challenges without corroboration from a patient history. Because plant material has a similar density to fat and air, organic foreign bodies can be difficult to differentiate from soft tissue on CT imaging.[4,5] MRI, while more sensitive to detecting organic foreign bodies, can still be misinterpreted without a high degree of suspicion.[6,7] Clinicians, therefore, should consider the possibility of retained foreign body when presented with a symptomatic lesion that does not improve on an antibiotic regimen.

The scar noted on the patient's left superior orbital rim suggests that the plant material may have embedded above the patient's brow and coursed through the soft tissue of the patient's brow to eventually cause inflammatory symptoms in her left upper eyelid. This course is supported by Hansen et al., who posited that the horizontal pyramidal shape of the orbit tends to direct foreign bodies towards the apex where they can settle in the superior orbital fissure.[8]

We believe this is one of the first cases of a retained intraorbital organic foreign body that initially presented with symptoms, resolved, and subsequently presented years later with different symptoms, leading to the discovery of the foreign body. This case serves as an important reminder to physicians that retained organic foreign bodies can range in their quiescent periods and clinical presentations.

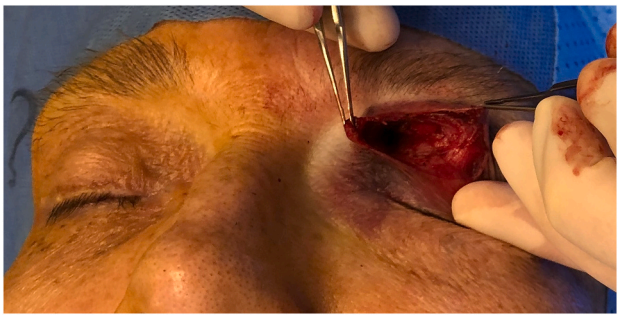

Fig. 2. Clinical appearance after excision of the plant material and the superior orbital tract.

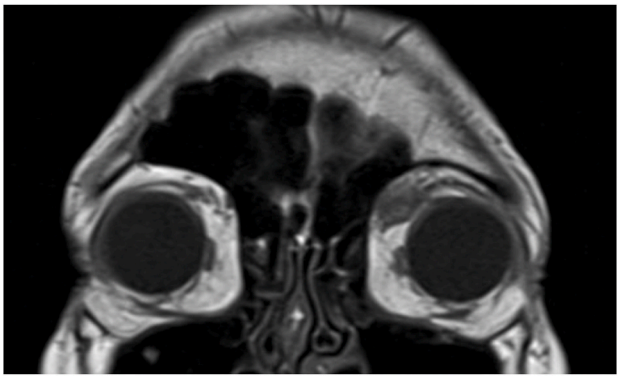

Fig. 3. MRI at the time of the patient's initial fall 3 years prior to presentation. The MRI demonstrates an extraconal soft tissue lesion in the superiomedial quadrant of the left orbit between the superior oblique and the superior rectus that was thought to be a hematoma. The lesion was isointense to T1 and hypointense to T2.

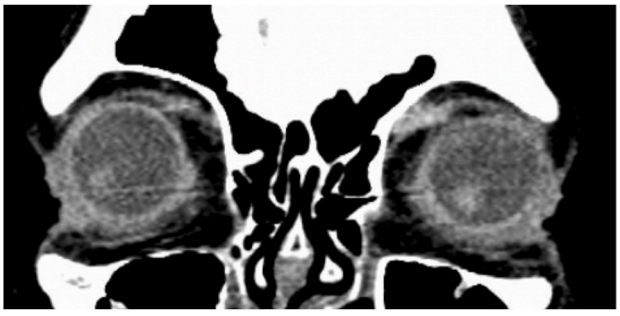

Fig. 4. MRI at 6 months postoperatively. The MRI demonstrates inflammatory material surrounding the trochlea and superior oblique without progression.

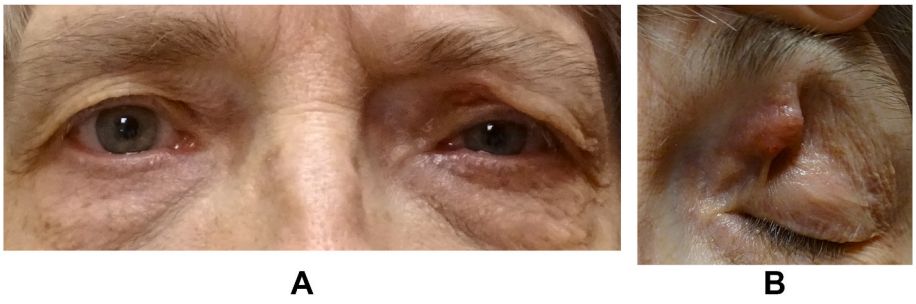

Fig. 1. Clinical appearance at presentation. **(A)** The lesion was not readily evident when looking at the patient straight on. **(B)** When the left brow was raised, however, a 1.5cm × 1cm mobile, nontender lesion with mild purulent drainage was appreciated.

Fig. 5. Clinical appearance postoperatively. Well healed without complication.

Patient consent

Patient consent to publish identifiable photographs was obtained in writing, and the collection and evaluation of protected health information was compliant with the Health Insurance Portability and Accountability Act as well as the Declaration of Helsinki.

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Authorship

All authors attest that they meet the current ICMJE criteria for Authorship.

CRediT authorship contribution statement

Dylan G. Raikar: Writing – original draft, Visualization, Data curation. **Kathryn P. Winkler:** Writing – review & editing, Validation, Supervision, Methodology, Investigation, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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