Case report

Orbital ‘pseudo-abscess’ in a patient with spontaneous subluxation of globe: A case report

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1. Introduction

Globe subluxation (GS) is characterized as a sudden anterior displacement of the globe anterior to the orbital rim.1 Spontaneous globe subluxation is a rare orbital complication, although the exact incidence might be underestimated in the literature because oftentimes patients are experienced in reducing the globe and resolving the subluxation on their own, without seeking medical attention. Kunesh et al. published a review and found 26 spontaneous globe subluxations reported between 1907 and 2002.2 Spontaneous causes of globe subluxation are known to include floppy eyelid syndrome, thyroid eye disease, and shallow orbit. Mechanical maneuvers like Valsalva, lid manipulation, general anesthesia, contact lens insertion or removal and trauma are known to precipitate globe subluxation in patients who are anatomically predisposed to it.3 Given the dramatic nature of globe subluxation, its clinical presentation can be anxiety producing to both the patient and physician. The clinical sequelae of GS can be traumatic optic neuropathy, corneal exposure/abrasion, retinal venous congestion, severe pain, and vision loss.4 Here we report a case of spontaneous globe subluxation that was initially thought to be caused by a very anterior orbital abscess which subsequently was discovered, in the operating room, to be a posterior collection of fluid from venous congestion.

2. Case report

A 58-year-old African American female with history of shallow orbits and a prior GS, was transferred to the emergency room of our (tertiary care hospital) from a local hospital with the concern for a right sided orbital abscess causing severe proptosis and globe subluxation. The patient arrived at the E.R. and refused a comprehensive ophthalmological exam due to pain. She was otherwise well with no systemic symptoms. The patient had no history of fever, and was not immunocompromised (she had diabetes but was managed on diet alone). Ophthalmology requested an MRI to help better delineate this lesion. However, a diagnosis of a retrobulbar fluid collection and possible abscess led to an attempt at drainage.

After the patient was anesthetized, the globe was reduced using digital pressure on the superior sclera and tenting the eyelids back over the globe. Immediately after the globe was reduced back to its normal anatomical location there was an efflux of clear fluid from...
underneath and around the palpebral fissure. An anterior orbitotomy through a lid crease incision revealed no abscess fluid. A temporary lateral tarsorrhaphy was completed at the end of the case to prevent reoccurrence of GS and a repeat CT orbits without contrast showed resolution of posterior globe fluid collection (Fig. 3).

3. Discussion

Globe subluxation is a rare event and there are currently no recorded reports in the literature of an orbital abscess causing globe subluxation. Given the low incidence of globe subluxation, the causes of globe subluxation are still being explored and detailed. Just recently, in 2012, a report of GS was determined to be caused by chronic obstructive pulmonary disease.\(^5\) Theoretically an abscess in a patient predisposed to infectious complications, with shallow orbits, could cause GS. We report here a case in which a posterior collection of fluid was the result of a spontaneous GS and was not an abscess but instead extravasated clear serous fluid from vascular congestion.

Past history of the patient presented here is important: she had a prior history of shallow orbits which lead to spontaneous globe subluxations some years previously. In response to the first series of globe subluxations, the patient had undergone bilateral eyelid tightening procedures to prevent future spontaneous globe subluxations. Since the original occurrences of GS and the tightening procedure the patient remained GS free for 3 years. On initial presentation this time, it was believed that an orbital abscess in an already predisposed patient could lead to GS. It is interesting to note that on the CT (non-contrast) there was no apparent fat stranding seen in the intraconal space, a finding usually consistent with inflammation/infection in the orbit. The patient also had clear sinuses on the CT scan which also goes against an intraorbital spread of infection from the paranasal sinuses. The patient was a diabetic but was being controlled with only dietary modifications. Radiologists at both the outside hospital and at the tertiary academic center, however, believed there was enough evidence on the non-contrast CT of the orbits to call this fluid collection an abscess.

We postulate that in the case here, the fluid collection posterior to the globe was in fact due to increase venous congestion and
decrease venous return posteriorly from the globe to the cone, leading to an efflux of clear serous fluid. After repositioning the globe in the correct anatomical position the fluid collection was cleared and was clear in nature. No purulent material or collection of fluid was seen during the orbitotomy and repeat non-contrast CT scan of the orbits showed resolution of the ‘abscess’. No sample of the clear fluid was submitted for pathology or microbiology during surgery. The patient never spiked a fever nor had any positive blood cultures, did not receive antibiotics and was eventually discharged home.

We present this case for future reference when it comes to imaging globe subluxation. In our case a non-contrast CT was obtained by a local hospital in the setting of acute globe subluxation. It is well known that IV contrast is needed to differentiate between orbital abscess vs phlegmon.6,7 In hindsight our patient, who could not get a timely MRI, should have been offered a repeat CT with contrast to help characterize this posterior globe collection of fluid. We postulate that in the case of GS without other clinical indications suggesting orbital abscess one can consider a posterior globe collection of fluid to be an extravasation of serous fluid, secondary to increased venous congestion. Management still consists of reduction of the GS and repeat imaging once the globe is back in its anatomical location. If clear fluid egress becomes apparent on reduction one can safely assume the fluid collection is benign.

4. Patient consent
Patient had given consent to publish de-identified images and CT scans of the case.

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Conflicts of interest

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Authorship

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