Case report

Occult intraocular foreign body presenting as squint

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Abstract

Background : We report a case of an occult retained intraocular foreign body detected four years after "forgotten" trauma. **Case** : A 23-year-old male presented with exodeviation and was referred as a case of epiretinal membrane. The anterior segment and adnexa were normal. Fundus examination revealed macular epiretinal membrane. An occult foreign body was localized in the retinal periphery. Imaging confirmed the diagnosis. **Observation** : Squint and epiretinal membrane may develop in cases of occult foreign bodies and may be the presenting sign years after trauma. **Conclusion** : A careful history of ocular trauma and thorough examination, complemented by radio imaging when needed, should be done in atypical cases.

Keywords: Retained intra ocular foreign body, squint, epiretinal membrane.

Introduction

Retained intraocular foreign bodies (RIOFB) can present within a diffuse spectrum of symptoms and signs like vision loss, pain, globe rupture, cataract, vitreous hemorrhage, siderosis and endophthalmitis (Yeh S et al, 2008). Tailored patient history and investigations like X- Ray, Sonography and Computerized Tomography Scans can change and improve management plans in patients with occult ocular foreign body. We report squint and Epiretinal Membrane (ERM) as unusual presenting signs of RIOFB.

Case Report

A 23-year-old boy presented to our squint clinic with the chief complaint of outward deviation of the right eye for about three months as noted by his family members. There was no history of any distortion in vision or loss of vision in either eye. The patient had a best spectacle corrected visual acuity of 6/12 in the Right eye and 6/6 in the left. There was a right exotropia for distance and near which he could overcome with effort (Fig 1). The anterior segment and ocular adnexa evaluation did not reveal any sign of abnormality. Applanation intra-ocular pressure of both the eyes was also normal. Because of a Grade 1 (Gass classification) epiretinal membrane (ERM) noted on an undilated fundus examination, the patient was referred to our retina clinic where a dilated fundus examination revealed a foreign body incarcerated in retina in the temporal periphery with surrounding pigmentary changes (Fig 2). The left eye was within normal limits. On leading questions, the patient gave a history of chisel hammer type of injury to the right eye four years back in which he reported to have had redness and dull pain for 3-4 days that resolved spontaneously after use of antibiotic drops on advice of a general practitioner. The patient never sought eye care after that as he was asymptomatic. An X-Ray of the orbits was performed in antero-posterior and lateral view to document the radio-opaque foreign body

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for medico legal purposes. The sonography (Fig 3) also confirmed the presence of a high spiking lesion, measuring 3x2 mm in the temporal region persisting till 40 db on decreasing gain, with corresponding acoustic shadowing. An electro-retinography (ERG) was performed which had normal wave forms with normal amplitudes and implicit time. Optical Coherence Tomography (OCT) also demonstrated a highly reflective lesion with corresponding optical shadow confirming the intra-ocular foreign body (IOFB) (Fig 4a). The OCT also revealed a macular ERM causing wrinkling of the inner retina with loss of foveal dip. The ERM reached upto the foveola but did not cross it and caused focal disruption of outer retinal layers (Fig 4b).

On being counseled and explained the risks of surgical complications as against those of siderosis and endophthalmitis, the patient opted for a close follow up (Neumann R et al, 1992). The patient was explained cardinal symptoms of ocular siderosis and endophthalmitis and planned for 3 monthly follow up to monitor for endophthalmitis and siderosis on fundus changes and ERG waveforms.

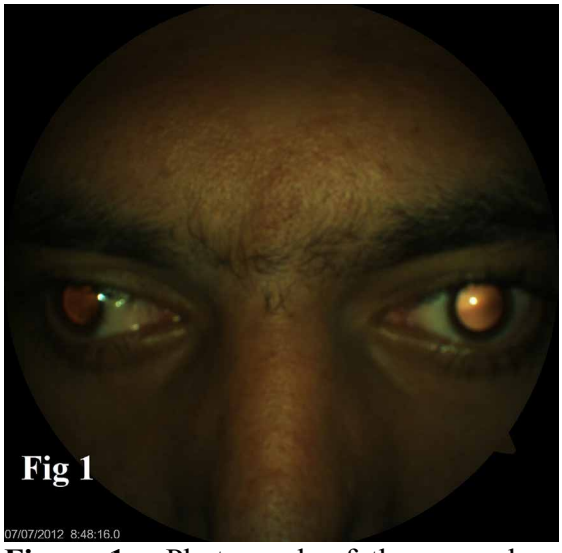

Figure 1: Photograph of the eyes showing exodeviation of the right eye

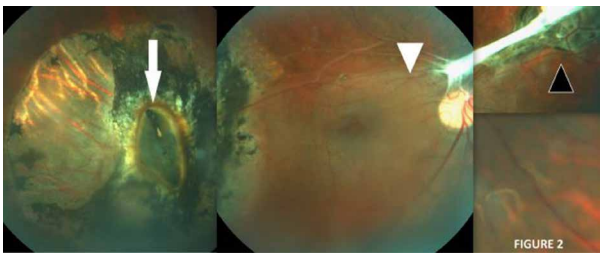

Figure 2: Montage of fundus photographs showing the primary impact site (Black arrowhead) with chorioretinal scar, Macular ERM (white arrowhead) and disturbed macular architecture, the Foreign Body (White arrow) incarcerated in retina along with pigmentary changes and surrounding scar

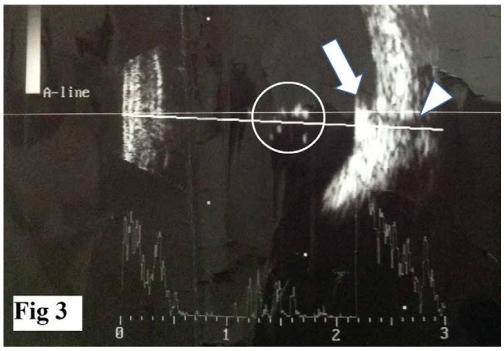

Figure 3: Sonography showing the intraocular foreign body (white arrow) with corresponding high spike on A Scan and acoustic shadow (white arrow head). Vitreous Debris are also seen in the centre (white circle).

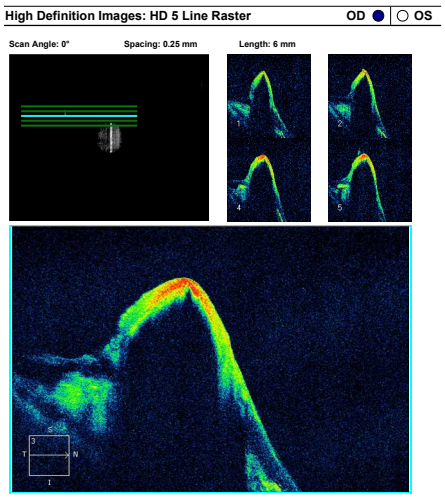

Figure 4a: Optical coherence tomography image showing highly reflective (red coded) foreign body (white arrow) with corresponding optical shadow

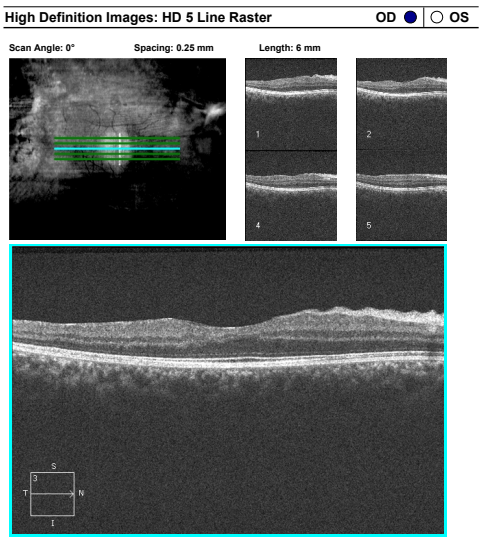

Figure 4b: OCT image showing Macular ERM causing wrinkling of inner retina (white arrowhead) with loss of foveal dip. The ERM is reaching up to the foveola but not across it. ELM is intact with minimal disruption of IS/ OS junction and distortion of outer nuclear layer.

Discussion

Intraocular foreign bodies usually present acutely either with open globe injury warranting immediate repair or with dreaded complications like retinal detachment, endophthalmitis, vitreous hemorrhage, siderosis amongst others (Yeh S et al, 2008). Our case brings to light some valuable points.

Firstly though Epiretinal membrane (ERM) has been described in IOFB with retinal detachment as Proliferative Vitreoretinopathy related changes and after vitrectomy for IOFB's removal (Slusher MM et al, 1982), isolated macular ERM as a revealing sign of IOFB has not been reported. The superonasal chorioretinal scar represented the primary impact site of the foreign body which then went to rest in the temporal periphery. Consequently the microbreak that had formed in that region allowed RPE cells / fibrocytes / astrocytes to migrate and proliferate along the disturbed vitreo-retinal interface resulting in an ERM over the most dependent macular region (Kampik A et al, 1981). Although on the basis of the montage photo, entry point of IOFB could have been in superonasal quadrant anterior to equator, there was no visible sub conjunctival scar.

This ERM disturbance caused the drop in visual acuity thus decompensating the fusional abilities of the patient. Minimal disruption of subfoveal Inner Segment/ Outer Segment junction (Fig 4) along with distortion of the outer nuclear layer may have led to loss of visual function. This brings us to the second unusual scenario of ocular deviation as the presenting symptom of IOFB, that too four years following trauma.

Thirdly, our case highlights why a careful history of past "forgotten" ocular trauma should always be acquired on leading questions along with a complete and focused examination in atypical cases. Chisel-hammer ocular injury, in particular, should never be left without thorough examination and investigation for ruling out the possibility of ocular/orbital foreign body. ERMs should be thoroughly evaluated for etiology and in doubtful cases ocular imaging like X-Ray of orbits, Sonography and Non Contrast Computed Tomography Scan should be done to localize, document and confirm the foreign body.

To the best of our knowledge, this is a very unique presentation and has never been reported earlier in contemporary literature. Focused history taking should be incorporated into clinical practice and ocular imaging performed in atypical cases of suspected occult ocular foreign body.

References

Kampik A, Kenyon KR, Michels RG, Green WR, de la Cruz ZC (1981). Epiretinal and vitreous membranes. Comparative study of 56 cases. Arch Ophthalmol;99:1445-54.

Neumann R, Belkin M, Loewenthal

E, Gorodetsky R (1992). A long-term follow-up of metallic intraocular foreign bodies, employing diagnostic x-ray spectrometry. Arch Ophthalmol;110:1269-72.

Slusher MM, Sarin LK, Federman JL (1982). Management of intraretinal foreign bodies. Ophthalmology;89:369-73.

Yeh S, Colyer MH, Weichel ED (2008). Current trends in the management of intraocular foreign bodies. Curr Opin Ophthalmol;19:225-33.

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