CASE REPORT

Pseudo retinitis pigmentosa in a case of missed intraocular foreign body

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SUMMARY

A 35-year-old man presented with history of painless, progressive loss of vision in the left eye for the past 7 years. There was history of trauma to the same eye with an iron object 7 years prior. Fundus examination revealed pigmentary retinopathy (unilateral advanced retinitis pigmentosa (RP)-like picture). X-ray orbits were suspicious of retained intraocular foreign body (IOFB). CT orbits confirmed the presence of IOFB. Electroretinogram revealed depressed responses. Right eye examination was within normal limits. A diagnosis of siderosis bulbi with unilateral pseudo RP-like fundus was made. No surgical intervention was planned for IOFB in view of poor visual prognosis.

BACKGROUND

Siderosis bulbi is a chronic degenerative condition seen in cases of retained intraocular iron foreign body. Pigmentary retinopathy is seen in late stages of siderosis. We report the occurrence of unilateral pigmentary retinopathy mimicking advanced retinitis pigmentosa (RP) in a patient with history of ocular trauma. Unilateral RP is an extremely rare occurrence and such cases should always be investigated to rule out a retained intraocular iron foreign body.

CASE PRESENTATION

A 35-year-old man presented to the ophthalmology outpatient department with painless, progressive loss of vision in the left eye for the past 7 years. No previous documents were available with the patient. On eliciting further, he gave history of trauma to the same eye with an iron object 7 years prior, following which the patient presented to a local physician and received conservative management. No investigations were done at that time according to the patient. On presentation to us, visual acuity was 6/6 in the right eye and hand movements close to face with inaccurate projection of rays in the left eye. Anterior segment examination of the left eye revealed a linear corneal scar, large inferonasal iris tissue defect along with iridodonesis and heterochromia (figure 1A). Patient was aphakic in that eye (probably due to a spontaneously absorbed lens). Pigment dispersion in the anterior chamber and anterior vitreous were also noted. The intraocular pressure was 14 mm Hg in the right eye and 32 mm Hg in the left eye. Fundus examination of the left eye revealed prominent pigmentary changes (bony spicules) from periphery to arcades

sparing the posterior pole. Other findings included presence of multiple sclerosed vessels, and a pale disc (figure 1B). Indentation indirect ophthalmoscopy revealed a small whitish deposit in the inferior quadrant near the ora serrata suspicious of an encapsulated intraocular foreign body (IOFB). Anterior and posterior segment examination of the right eye was within normal limits.

INVESTIGATIONS

Ocular ultrasound did not reveal any evidence of IOFB (probably due to anterior location of IOFB). X-ray of orbits (AP and lateral views) were suspicious of a retained IOFB (figure 1C). CT of orbits revealed a 1×1 mm round hyperintense object in the left vitreous cavity abutting the ocular coat at 5 o' clock position suggestive of a metallic IOFB (figure 1D). Electroretinogram, both photopic and scotopic revealed depressed responses in the left eye.

Widefield fundus colour imaging was obtained using Optos (Optos, Dunfermline, UK).

DIFFERENTIAL DIAGNOSIS

Before a history of trauma was actively elicited from the patient, a possible diagnosis of unilateral atypical RP was kept in mind.

TREATMENT

The patient was started on topical antiglaucoma medication (0.5% timolol maleate) for raised intraocular pressure in the left eye. No surgical intervention was planned for IOFB in view of poor visual prognosis.

DISCUSSION

IOFBs account for 18%–41% of all open globe injuries and a majority (58%–88%) of these are found in the posterior segment.¹ They may be either metallic or organic in nature, with the former being more common. Our case highlights the devastating sequelae of missing a metallic IOFB. A retained iron IOFB can lead to siderosis bulbi, a chronic degenerative process induced by chemical reactions from the released iron content. Typically iron has affinity for epithelial linings of ocular tissues and this manifests as iris heterochromia, pupillary mydriasis, cataract, secondary glaucoma and retinal pigmentary degeneration.² On probing, our patient revealed a history of trauma 7 years back. An IOFB was missed at the initial presentation. This led to changes of siderosis and

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Figure 1 (A) Anterior segment view of the right eye showing large inferonasal iris tissue defect with a faint corneal scar and aphakia. (B) Wide field fundus imaging showing pigmentary retinopathy, disc pallor and sclerosed vessels. (C) X-ray orbit depicting a suspicious foreign body (arrow). (D) CT scan (axial section) showing an intraocular foreign body abutting the coats.

progressive vision loss. Zhu *et al* reviewed and retrospectively analysed 24 eyes of 24 patients diagnosed with siderosis bulbi. The average age of the patients in their series was 39.9 ± 12.2 years and the majority (83.33%) gave a history of trauma. The period between the ocular injury and the diagnosis of ocular siderosis ranged from 1 month to 240 months (43.55 ± 68.74 months). Delayed presentation by patients (54.17%), missed diagnosis or delayed referral (25.00%), no history of trauma (16.67%) and undetected IOFB by CT (4.17%) prolonged the interval from ocular trauma to IOFB discovery and led to siderosis bulbi.³

In our patient, history of trauma was actively elicited from the patient after noticing obvious signs of trauma, heterochromia of iris and pigmentary retinopathy. The fundus findings were similar to that seen in RP, but owing to rarity of unilateral RP, a CT scan was obtained which revealed the presence of an IOFB. Another possible differential diagnosis of pseudo-RP-like appearance in cases of trauma can be a spontaneously settled retinal detachment.^{4,5}

With the availability of advanced vitrectomy techniques, early removal of IOFB is the preferred treatment modality. Early removal prevents vision-threatening complications like endophthalmitis and siderosis.⁶ Since our patient presented at an advanced stage with poor vision with irreversible retinal changes, no surgical management was planned for IOFB removal.

This case highlights the importance of investigating for a retained IOFB in a case of unilateral RP-like changes.

Learning points

- ▶ A detailed history and examination is a must in all cases of ocular trauma.
- ▶ High index of suspicion of retained intraocular foreign body (IOFB) should be maintained in clinical scenarios suggestive of penetrating ocular trauma and should be investigated appropriately (X-ray orbit in all cases or CT scan in highly suspicious cases).
- ▶ Early intervention is essential to prevent vision-threatening complications of retained IOFB.

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REFERENCES

- 1 Loporchio D, Mukkamala L, Gorukanti K, *et al*. Intraocular foreign bodies: a review. *Surv Ophthalmol* 2016;61:582–96.
- 2 Duke-Elder S, ed. System of ophthalmology. Vol. XIV: injuries. Part 1: mechanical injuries. St Louis: Mosby, 1972:525–44.
- 3 Zhu L, Shen P, Lu H, *et al*. Ocular trauma score in Siderosis Bulbi with retained intraocular foreign body. *Medicine* 2015;94:e1533.
- 4 Carr RE, Siegel IM. Unilateral Retinitis Pigmentosa. *Arch Ophthalmol* 1973;90:21–6.
- 5 Grisanti S, Diestelhorst M, Lebek J, *et al*. Unilateral pigmentary degeneration of the retina associated with heterochromia iridis. *Graefes Arch Clin Exp Ophthalmol* 1998;236:940–4.
- 6 Wickham L, Xing W, Bunce C, *et al*. Outcomes of surgery for posterior segment intraocular foreign bodies—a retrospective review of 17 years of clinical experience. *Graefes Arch Clin Exp Ophthalmol* 2006;244:1620–6.

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