

Intraocular Cilia in Retinal Detachment

Dear Editor,

Retained cilia are an uncommon cause of retinal detachment. Most of the reported cases are associated with antecedent trauma.¹⁻³ We report 2 interesting cases of intraocular cilia associated with retinal detachment, one of which is in an adolescent in an atraumatic setting.

Case Report 1

A 13-year-old Indian boy presented with right eye redness, itch and loss of vision for 6 days. There was no history of trauma. Visual acuity was 20/400 in the right and 20/20 in the left. There was a 1 mm hypopyon in the right eye and intraocular pressure was 28 mmHg (Fig. 1a). The posterior segment could not be visualised but ultrasound B-scan was normal. Examination of the left eye was unremarkable. He was treated with intensive hourly steroids for presumed severe anterior uveitis. Five days later, he developed a 4 mm proptosis (Fig. 1b) and repeat B-scan revealed

moderately dense vitreous opacities, retinal detachment, with enlargement of the recti muscles and lacrimal gland (Fig. 1c). This was corroborated on computed tomography scans. The impression was panophthalmitis secondary to endogenous endophthalmitis and he was treated with topical, intravenous and intravitreal antibiotics and topical steroids.

He continued to deteriorate despite treatment and underwent a right trans-pars planar vitrectomy. Intraoperatively, a foreign body was found embedded in the retina with surrounding tractional retinal detachment, proliferative vitreoretinopathy and vitritis. Histopathological examination of the foreign body showed hair material (Fig. 1d). Microbiological cultures showed a scant growth of *Staphylococcus aureus*. He subsequently underwent 2 further vitrectomies for persistent retinal detachment, complicated by glaucoma. Three years after presentation, there was no perception to light in the eye despite retinal reattachment (Fig. 1e).

Case Report 2

A 31-year-old Indian man sustained a blast injury when a car tyre burst in his face. Visual acuity was perception to light in both eyes. There were multiple small sub-millimetre foreign bodies embedded in his face, eyelids, conjunctiva and cornea. He sustained a left full thickness corneoscleral laceration (Figs. 2a and 2b). B-scan showed 2 echogenic intraocular foreign bodies in the left globe, with a shallow ciliochoroidal detachment and moderately dense vitreous opacities (Fig. 2c). This was corroborated on computed tomography of the orbits. There was a gross hyphaema in the right eye but the globe was intact. He underwent primary toilet and suture of the left corneoscleral laceration. He subsequently developed an inferior retinal detachment in the left eye and underwent a combined procedure of keratoprosthesis insertion, cataract extraction, removal of intraocular foreign body, retinal reattachment surgery with penetrating keratoplasty.

Intraoperatively, there was an inferotemporal tractional retinal detachment with extensive proliferative vitreoretinopathy. Two metallic intraocular foreign bodies were identified along with 7 hair-like materials, which were confirmed to be fragments of hair shaft material (Fig. 2d). Microbiological cultures were negative. Six months after presentation, his vision remained at hand movements. There was a clear cornea graft in situ and retina was flat with

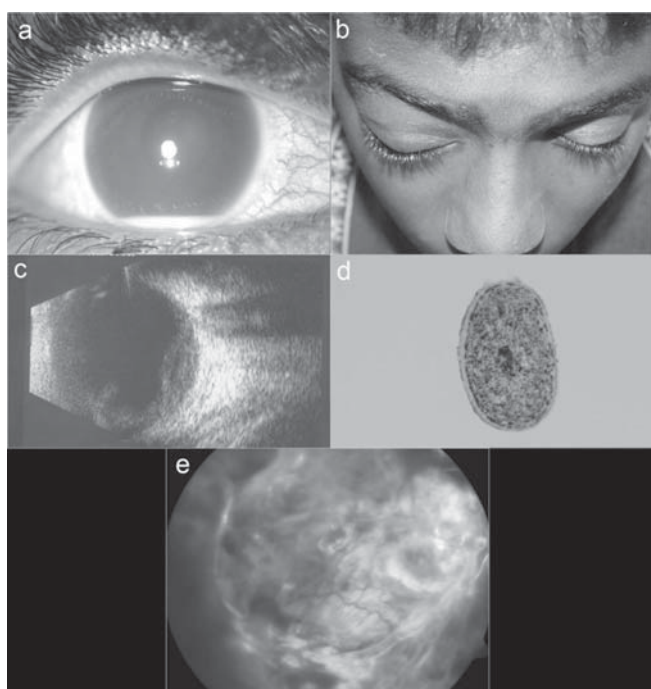


Fig. 1a. Appearance at presentation. Visual acuity 6/120 in the right eye. Fig. 1b. Clinical picture showing right proptosis 5 days after presentation. Fig. 1c. B-scan 5 days after presentation showing vitreous opacities and retinal detachment. Fig. 1d. Histopathological examination. Cross section of the intraocular foreign material revealing hair material (H&E, original magnification x400). Fig. 1e. Postoperative view of posterior segment 2 years after presentation. Visual acuity, no perception to light.

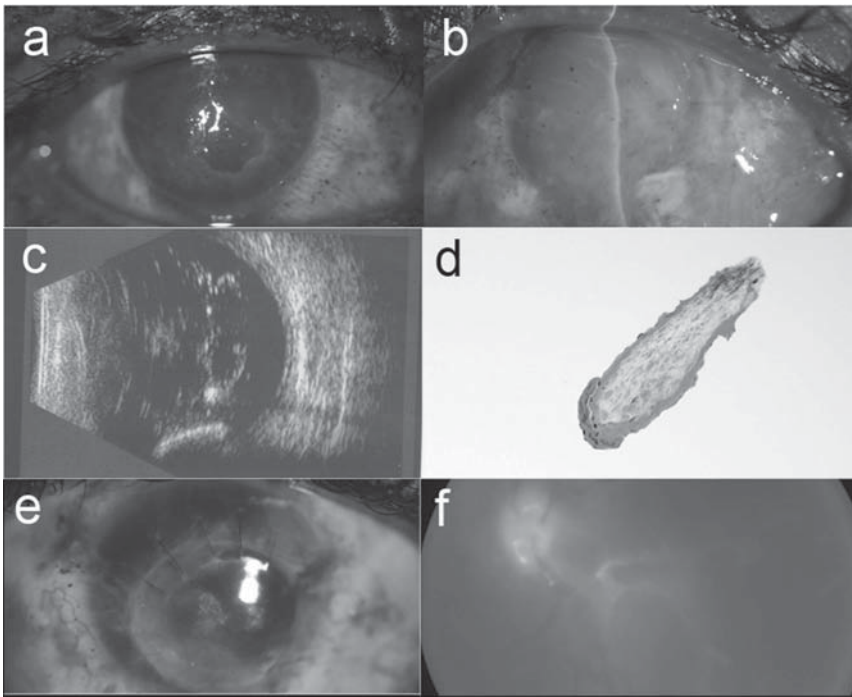


Fig. 2a. Appearance of right eye at presentation. Visual acuity perception to light in right eye. Fig. 2b. Appearance of left eye at presentation. Visual acuity perception to light in left eye. Fig. 2c. B-scan showing moderately dense vitreous opacities with a shallow ciliochoroidal detachment. Fig. 2d. Histopathological examination. A fragment of hair shaft material is identified. (H&E, original magnification x200). Fig. 2e. Postoperative view of anterior segment after penetrating keratoplasty. Fig. 2f. View of posterior segment 6 months after presentation. Visual acuity, hand movement.

dense macular fibrosis and scarring (Figs. 2e and 2f). No subsequent surgery was performed as the patient returned to his homeland in India.

Discussion

The clinical course of intraocular cilia can be very variable. It is usually introduced into the eye during penetrating injury or surgery.¹⁻³ However, there have also been reports of inoculated cilia in the absence of trauma.⁴ Case 1 is the first reported case of an intraocular cilia associated with retinal detachment in an adolescent in an atraumatic setting. We postulated that there could have been inadvertent introduction during eye rubbing⁴ or undetected trauma and migration of the hair shaft into the vitreous cavity from the external adnexa.⁴ This is especially suspected in a young patient who may not be able to provide a complete history.

These patients can present as an acute pyogenic,⁵ delayed granulomatous inflammatory reaction² or remain dormant in the eye for up to 32 years.^{1,6} In the anterior segment, it can form epithelial cysts^{1,5} or cause corneal decompensation.¹ In the posterior segment, vitreous fibrosis and retinal detachment can develop.^{1,7,8}

The clinical diagnosis may be difficult as the foreign body may not show up on computed tomography and magnetic resonance imaging. Seawright et al³ reported the detection of the cilia using B-scan ultrasonography. Upon picking up the echogenic focus of the cilia, they advocate ocular rotations that will reveal the tethered movement of the curvilinear opacity and tilting the probe at right angles to the long axis of the cilia that will enhance its shape. Decreasing the gain

will help distinguish between cilia from calcific or metallic objects. A high index of suspicion should be maintained at all times even in the absence of positive imaging results. The detection of a retinal detachment should prompt one to consider early surgical intervention to obtain intraoperative visualisation that may help to identify and remove the inciting agent to prevent disease progression.

In both cases, a tractional retinal detachment developed. This is in keeping with the proposed mechanism of vitreous fibrosis around the cilia with subsequent rhegmatogenous retinal detachment reported by Gottlieb et al.⁷ They do not advocate vitrectomy to manage the detachment, however, their cases were managed in the 1980s when vitrectomy instruments and techniques were not as advanced. In our experience, when there is a retinal detachment associated with the cilia, a vitrectomy will allow removal of the cilia and a chance to regain anatomical reattachment of the retina and hence, vision. In case 2, the patient had an extensive corneoscleral laceration that hampered the retinal surgeon's view of the posterior segment. With the advancement in surgical equipment and techniques, a combined procedure with a temporary keratoprosthesis allowed a vitrectomy to be carried out.

We suggest that clinical suspicion of intraocular cilia should be raised in cases of retinal detachment where investigations are inconclusive and the patient fails to respond to maximal medical therapy. With recent surgical advances, there is a role for vitrectomy to obtain visualisation and removal of an inciting agent to prevent disease progression.

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