CASE REPORT

Recurrent uveitis and pigment dispersion in an eye with in-the-bag acrylic foldable intraocular lens

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Accepted 10 February 2016

SUMMARY

Phacoemulsification with in-the-bag intraocular lens (IOL) implantation is the standard procedure for cataract surgery. Pigment dispersion and uveitis can result when an IOL is placed in the sulcus. We report a case of a 64-year-old woman, with pigmentary glaucoma, who developed recurrent uveitis following uneventful cataract surgery and an in-the-bag hydrophobic acrylic IOL implant. Recurrent uveitis did not subside despite use of topical steroids over 3 months. Dilated examination revealed capsulophimosis with anterior dislocation of the IOL haptic. The mechanical trauma to the iris due to the displaced haptic was implicated as the cause of recurrent uveitis, which completely resolved after capsular excision and IOL repositioning. This case illustrates a rare cause of recurrent uveitis due to IOL haptic dislocation following severe capsulophimosis.

BACKGROUND

Uveitis-glaucoma-hyphaema (UGH) syndrome is a post surgical condition caused by mechanical chafing of anterior segment structures by an intraocular lens (IOL). It has a wide range of clinical manifestations, including anterior chamber inflammation, pigment dispersion, increased intraocular pressure (IOP), hyphaema or microhyphaema, and vitreous haemorrhage.^{1,2} The syndrome was originally described for anterior chamber IOLs but has also been associated with single piece acrylic IOLs placed in sulci.³ UGH is also rarely reported with in-the-bag single piece acrylic IOLs, which can be challenging to diagnose.³ We report a case of recurrent uveitis and pigment dispersion in a case with and in-the-bag hydrophobic IOL, due to capsulophimosis with anterior flexing of the IOL haptic causing iris chafing.

CASE PRESENTATION

A 64-year-old woman, a known case of pigmentary glaucoma, had trabeculectomy in both her eyes 15 years earlier. IOP was under control with a fixed drug combination of timolol maleate 0.5% and latanoprost 0.005% eye drops once at bedtime in both eyes. She had undergone uneventful phacoemulsification with foldable intraocular lens implantation in both her eyes 5 months apart (right eye followed by left eye).

Preoperatively (before left eye surgery), her right eye corrected visual activity was 20/40 for distance and N6 for near. The left eye had a distance vision of 20/50 and near vision of N12 with correction. Her IOP was 16 and 10 mm Hg, in the right eye and left eye, respectively. Anterior segment

examination of both the eyes showed diffuse blebs superiorly, posterior chamber intraocular lens in the right eye and nuclear sclerosis grade II in the left eye. Gonioscopy revealed open angles with increased trabecular meshwork pigmentation in both eyes, with patent superior osteum. Fundus examination showed 0.8 cup-disc ratio (CDR) with thin inferior rim in the right eye and 0.7 CDR with superior and inferior excavation in the left eye, with corresponding visual field defects. The patient underwent an uneventful topical temporal clear corneal phacoemulsification with foldable (Acrs of IQ SN60WF, 16.5D) posterior chamber intraocular lens (PCIOL) implantation in the left eye. Postoperatively, topical β -blocker (timolol maleate 0.5%) twice daily was continued along with topical steroids in tapering doses, topical antibiotics and cycloplegics for 1 week. She was referred back to the treating physician again after 1 week for further follow-up. At a 1-month postoperative visit with her physician, her left eye had best corrected vision of 20/25. IOP was 18 and 12 mm Hg in the right eye and left eye, respectively. She had minimal inflammation in the left eye, treated with low dose steroids, which were stopped after 1 week. However, she presented again with recurrent inflammation and needed continued steroid eye drops for 3 months in tapering doses, but the inflammation came back each time. In view of recurrent uveitis, she had a dilated examination, which revealed capsulophimosis with anterior flexing of the IOL haptic into the visual axis (figures 1 and 2). The IOL was in-the-bag. The treating ophthalmologist stepped up the steroids and referred the patient to us for further management. When she presented to us, the vision in the

Figure 1 Slit-lamp photograph after dilation, red arrow showing flexed haptic and white arrow showing capsulophimosis.

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To cite: Thakur M, Bhatia P, Chandrasekhar G, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2015-213968

Figure 2 Retroillumination showing optic margin (red arrow) due to displacement of IOL, and white arrow showing IOL haptic in visual axis. IOL, intraocular lens.

left eye had further dropped to 20/100 with an IOP of 10 mm Hg on a topical β -blocker. Anterior chamber showed 1+ cells with IOL haptic seen in the pupillary area, even without dilation ([figure 3](#)).

INVESTIGATIONS

Optical coherence tomography was performed, which did not reveal any cystoid macular oedema.

DIFFERENTIAL DIAGNOSIS

It would be prudent to rule out any retained lens matter. There was no evidence of retained lens matter in our case. Since IOL was implanted in-the-bag, the possibility of the IOL in the sulcus causing mechanical trauma to the iris tissue was ruled out.

DIAGNOSIS

Owing to severe capsulophimosis, there was anterior flexing of the haptic of the in-the-bag IOL, which was visualised in the pupillary area. This anteriorly displaced edge was causing mechanical trauma to the iris and thereby recurrent inflammation.

A diagnosis of uveitis secondary to mechanical trauma to the iris status post cataract surgery in the left eye was made.

TREATMENT

The patient underwent left eye capsule excision and IOL repositioning under local anaesthesia. Two paracenteses were performed; the anterior chamber was filled with high viscous dispersive viscoelastic (viscoat). With the help of 23 gauge microscissors, the thick capsular margin was cut and the fibrosed capsule was excised. The IOL haptic gradually receded into the bag, and was dialled into place. The excised capsular material was removed and the anterior chamber cleared of the viscoelastic.

OUTCOME AND FOLLOW-UP

In the left eye, there was significant visual improvement to 20/30 on first postoperative day with an IOP of 18 mm Hg. The IOL was in place and the pupil was round ([figure 4](#)). The patient was prescribed routine postoperative topical antibiotics and tapering dose of steroids in the operated eye, and was asked to continue the combination of topical β -blocker and prostaglandin analogue in the right eye and only β -blocker in the left eye.

DISCUSSION

UGH syndrome occurs due to mechanical trauma to the uveal tissue secondary to sulcus-placed or anterior chamber-placed IOLs.² Our case highlights a rare cause of incomplete UGH syndrome caused by IOL haptic displacement in an eye with in-the-bag IOL with severe capsulophimosis.

Acrysof IQ, is a single piece, hydrophobic acrylic IOL with a flexible optic-haptic junction. The severe capsulophimosis seen in our case could have led to progressive anterior flexing of the IOL haptic with resultant trauma to the uveal tissue and inflammation.

Boutboul *et al*⁴ described a case with pigmentary glaucoma following uneventful phacoemulsification and in-the-bag implantation of an Acrysof SA60AT (Alcon) intraocular lens. Ultrasound biomicroscopy (UBM) revealed the in-the-bag IOL, but with a deformed inferior haptic causing a localised elevation and proximity to the posterior iris surface. They hypothesised that the inferior haptic was damaged during IOL loading and insertion, and the deformed haptic caused localised trauma to the uveal tissue. Glaucoma filtering surgery and repositioning of

Figure 3 Slit-lamp photograph showing anterior flexing of IOL haptic (white arrow) into the visual axis. IOL, intraocular lens.

Figure 4 Dilated postoperative slit-lamp photograph showing clear visual axis with IOL in place. IOL, intraocular lens.

IOL haptic was needed to control the intraocular pressure, which was performed 1 year after cataract surgery.⁴

Zhang *et al* proposed two mechanisms for UGH syndrome in two patients with in-the-bag IOL implantation. In the first case, pseudophacodonesis secondary to weak zonules in a case of pseudoexfoliation syndrome caused anterior displacement of the IOL bag complex and chafing of the posterior iris by the square-edged haptic. In the second case, focal capsular fibrosis around the square-edged haptics along with anteriorly rotated ciliary processes in the plateau iris configuration caused chafing of the iridociliary tissue. In the first case, a capsular tension ring was used to stabilise the bag and decrease IOL iris contact. In the second case, endoscopic cyclophotocoagulation of the anteriorly rotated ciliary processes decreased the IOL and iridociliary tissue contact, and resolved the condition. They concluded that in-the-bag square-edged haptics of single-piece acrylic IOLs are a potential source of iridociliary chafing when the IOL bag complex is displaced anteriorly in the presence of weak zonules.³

The flexibility of the AcrySof haptics explains their instability and possible movement in the anteroposterior plane. Micheli *et al*⁵ and LeBoyer *et al*⁶ described cases in which one haptic was displaced from the bag to the sulcus, leading to pigmentary glaucoma and, in the case reported by LeBoyer *et al*,⁶ it led to hyphaema with intravitreal haemorrhage. These authors emphasise the importance of performing a small capsulorhexis to prevent IOL displacement and pigmentary glaucoma with these types of IOLs. Hydrophobic acrylic PCIOLs are uniplanar, highly flexible and have low compressive force. All these would allow decentration or displacement when they are not placed well in the capsular bag. Managing these IOL-related complications early would be safer and also would prevent problems related to long-term pigment dispersion and recurrent inflammation.⁷

In our case, the flexibility of the IOL combined with severe capsulophimosis resulted in anterior flexing of the IOL haptic displaced into the visual axis resulting in diminution of vision.

The anteriorly displaced thick square-edged haptic was causing recurrent mechanical trauma to the posterior iris surface leading to pigment release and inflammation. Moreover, the patient was a known case of pigmentary glaucoma, with possible anatomical predisposition with posterior iris bowing, which could have aggravated the condition. In our case, UBM was not performed, since slit-lamp examination revealed the IOL haptic in the pupillary plane. The possible cause being an improperly placed IOL with folded haptic over the optic cannot be ruled out. However, the patient was on routine cycloplegics post-operatively and this complication was not noted during the first week after surgery.

Although rare, the displacement of a haptic of the IOL even when the lens is placed in the capsular bag should be looked for

in a case of recurrent post operative inflammation. Posterior chamber IOL-related recurrent inflammation or pigment dispersion with secondary increase in IOP when undetected or inappropriately treated can lead to serious vision-threatening complications. Hence, prompt recognition and appropriate treatment is necessary.

Learning points

- ▶ Recurrent uveitis can occur even after implantation of an in-the-bag intraocular lens (IOL).
- ▶ Severe fibrosis of the anterior capsule can cause displacement of the IOL optic or haptic and can contribute to mechanical iris trauma presenting as recurrent uveitis.
- ▶ Dilated examination and/or ultrasound biomicroscopy can be of good clinical assistance to assess IOL and iris relationship post cataract surgery with persistent inflammation.
- ▶ Prompt recognition of the condition and appropriate intervention in the form of capsular excision and IOL repositioning can avoid serious complications.

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Contributors SS, MT, PB and GC contributed to conception, design, acquisition and interpretation of data. SS and MT contributed to drafting the article and revising it critically for important intellectual content to get the article published.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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