Managing a dislocated intraocular lens

A70-year-old male patient is referred from the optician with a history of onset of double vision and examination shows a dislocated / subluxated IOL. How will you manage this patient?

If the double vision is causing serious concern to the patient, depending on the degree of dislocation and the type of intraocular lens (IOL) implanted, the options would be as follows:

- If the IOL is a three-piece implant, I would consider tucking one or both haptics of the IOL in the scleral tunnel(s).
- If it is not a three-piece IOL and the above technique is not feasible, I would consider vitrectomy and removal of the dislocated IOL.

Following removal of IOL, the options to treat the aphakia would be: non surgical – glasses (if one-eyed) / contact lens.

Most patients in this age group would want a more permanent solution. In that case, depending on the situation, the choices for secondary IOL would be:

- Scleral fixated IOL. A three-piece IOL is either sutured to the scleral surface or implanted in scleral tunnels. For scleral suturing, specially designed IOLs with eyelets on the haptics are usually used. Long-term complications of scleral suturing include the possibility of IOL tilt, IOL dislocation and prolene suture exposure. The current trend therefore to implant three-piece IOLs such as Alcon MA50BM in scleral tunnels. Incarcerating the haptic in the scleral tunnel stabilises the axial position of the IOL, which should decrease the incidence of IOL tilt. This technique is relatively safe and is less technically demanding as it stabilises the IOL without difficult suturing procedures.
- Iris-claw IOLs. These IOLs (e.g. Artisan lens) can be implanted either anterior or posterior to the iris surface. Anterior iris-claw lens – my personal preference is to use the Vacufix vacuum enclavation sytem for anterior fixation of the iris-claw lens. This system creates a perfect iris bridge thereby allowing for optimal positioning and centration of the IOL. The A-constant used for an anterior Artisan lens is 115 (if an A-scan is used to measure the axial length) or 115.7 (if the IOL Master is used).
- Retro-pupillary iris-claw lens. In post-vitrectomy patients, retro-pupillary iris-claw lenses are easy to implant but very difficult to reposition. If implanting these implants posterior to the iris surface, it is important to exclude any significant iris atrophy along the 3 and 9 o'clock meridian. There have been reports of post-op dislocation of these implants on the side where there has been pre-existing iris atrophy due to inadequate gripping of the iris tissue with the IOL haptic. No surgical peripheral iridectomy is needed for retro-pupillary iris-claw lens implantation. The A-constant that we use for retro-pupillary Artisan IOL is 116.8.
- Anterior chamber IOL. These IOLs are time-tested, easy to implant and relatively safe for those who have a good endothelial cell count.
- Iris-sutured IOL. These IOLs can cause cat-like pupil and iris chafing, leading to complications such as chronic inflammation and secondary glaucoma and therefore this technique is rarely used.

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TAKE HOME MESSAGE

Appropriately managing these patients with the correct choice of surgery and management of the complications is rewarding, as they get good results with relief of their symptoms.

This man's symptoms are likely to be caused by the edge of the (IOL) optic crossing the visual axis giving a simultaneous phakic and aphakic image on the retina, which is usually very disturbing. An operation to correct the problem is usually indicated. Reassure the patient that this is a recognised late complication of cataract surgery and can usually be sorted with surgery.

History:

- Exclude risks of capsular zonule weakness, like complicated surgery, pseudoexfoliation or Marfan syndrome.
- Has a capsular tension ring been inserted (you may need to remove it)?

Examination:

- Directed to find the IOL position and type, the state of the vitreous and capsule integrity.
- Ultrasound imaging of the anterior segment to confirm slit-lamp examination findings.
- Check retinal periphery for tears or breaks.

Preoperative factors:

- Is a vitrectomy required?
- Anterior chamber (AC) vitreous?
- Retrieve a posterior segment IOL?
- Is a lens exchange procedure required?
- Manipulate existing IOL.
- Exchange IOL.

Operation:

- I perform the simplest procedure that will place a well-positioned and correctly powered IOL optic over the visual axis. If a vitrectomy is required, I place the trocars first, followed by the corneal incisions. I use a reverse-bevelled corneal incision if it is greater than 3mm and suture the wound with a 10/0 polyglactin absorbable suture, avoiding the need for suture removal. A paracentesis at 45 degrees to the main corneal incision allows easier manipulation

of the IOL.

- The state of the eye determines the type of lens used. If possible, I reposition the original lens in the sulcus in front of an intact AC. If the capsule only supports one haptic it may be possible to suture the unstable haptic into the sulcus transclerally under a partial-thickness scleral flap. If the capsule is unstable, I remove it and implant either an AC IOL, or a retropupillary 'Worst type' iris clip IOL. The choice of lens depends on the age of the patient, the corneal endothelial count and if there is any ocular hypertension or glaucoma. Though both types work equally well, the AC IOL is easier to implant, but may compromise both the endothelium and trabecular meshwork in susceptible individuals. The retropupillary lens is a good alternative, but is more difficult to centre in the eye. I no longer perform intrascleral haptic capture and have replaced the technique with retropupillary iris clip lens implantation, because of the potential increased haptic extrusion and endophthalmitis risk with scleral capture.

Postoperative considerations:

- The results from surgery are good with a rapid recovery of vision. I have found that, occasionally, secondary AC and sulcus IOL implantation can be associated with prolonged iritis and cystoid macular oedema. I use topical NSAIDs for around five days and steroid / antibiotic drops for four to six weeks postoperatively to prevent this. Overall, managing these patients is rewarding, as they get good results with relief of their symptoms.

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