Dislocated IOL Levitation With a Sleeveless Extrusion Cannula

An effective technique for a dropped IOL of any type.

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Dislocation of an IOL into the posterior chamber is a dreaded complication. It leads to a continuous tussle to optimize visual outcomes and meet the expectations of a highly demanding patient. Below we explain how to use a sleeveless extrusion cannula to reposition a dislocated IOLatraumatically.

Flynn et al.\(^1\) described the technique of using a soft-tipped extrusion cannula to drain posterior subretinal fluid. In this commonly used procedure, flexible silicone tubing is attached to the end of a tapered extrusion needle and advanced into the subretinal space, through a preexisting open peripheral break or a retinotomy performed during vitreoretinal microsurgery, in order to allow atraumatic drainage of posterior subretinal fluid.

In complicated cataract surgery, using a sleeveless extrusion cannula to address a dislocated IOL provides a large contact area with the IOL. With application of adequate suction, the IOL can be lifted and brought into the pupillary plane, from whence it can be grasped by forceps and removed.

**SURGICAL TECHNIQUE**

Under local anesthesia, standard 23-gauge three-port pars plana vitrectomy incisions are created. After releasing all vitreolenticular adhesions, complete vitrectomy with careful separation and removal of the posterior hyaloid face is performed prior to lifting the IOL. This prevents traction on the retina in subsequent maneuvers. The IOL gently floats to the posterior pole of the eye once it is freed from all attachments (Figure 1A).

The sleeveless extrusion cannula is then connected to the vitrectome, and the vacuum is set to 300 mm Hg with the cutting function turned off. As the IOL rests flat on the retina, the sleeveless extrusion cannula is connected to the vitreotome, and suction is activated.

**Figure 1.** An IOL is lying flat on the retina (A). The sleeveless extrusion cannula is introduced into the eye, and the bore of the cannula is positioned facing the surface of the IOL; suction is generated with the footpedal in position 2, and the IOL is lifted (B). Once the IOL is brought into the mid-pupillary plane, it is grasped with end-opening forceps (C). The IOL is brought into the anterior chamber and explanted or repositioned, depending on the presence or absence of sulcus support and the type of IOL (D).
**In complicated cataract surgery, using a sleeveless extrusion cannula to address a dislocated IOL provides a large contact area with the IOL. Removing the silicone sleeve exposes a wider access of the bore of the cannula, which helps to create effective suction around the IOL.**

**BETTER ACCESS, EFFECTIVE SUCTION**

Various methods of IOL levitation have been described in the literature. Retinal forceps are a mainstay of treatment in vitreoretinal surgery; however, an accidental iatrogenic retinal tear while lifting an IOL from the surface of the retina is possible with use of these instruments. Often IOLs are sneaky, slippery, and difficult to grasp, especially those with plate haptics.

The flexible silicone sleeve fits snugly within the rigid outer shaft of the vitrector cannula, preventing leakage of air or fluid and providing good access into the sub-retinal space. Removal of the silicone sleeve exposes a wider access of the bore of the cannula, which helps to create effective suction around the IOL.

**CONCLUSION**

The technique described above and in a video at eyetube.net/?v=uheni is safe, reliable, and reproducible. Moreover, it is an effective solution for a dislocated IOL of any type, including plate-haptic IOLs, which are often difficult to grasp with retinal forceps. Other advantages are that no additional device is required and availability of an extrusion cannula is not an issue, as these instruments are included in virtually all vitreoretinal set-ups.

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