Managing iris prolapse

After reading the article by Tint et al., we would like to share some comments and tips about dealing with iris prolapse. First, one principle we obey in iris prolapse is to maintain the anterior chamber pressure at a stable and relatively low level. The goal is to prevent recurrent prolapse and minimize damage to the iris, since we found that with each prolapse and reposition, the iris tended to prolapse more easily. As mentioned by Tint et al., a sudden change in anterior chamber pressure is one possible mechanism of iris prolapse. It is therefore critical to keep the anterior chamber pressure stable during the rest of the surgery. Because high anterior chamber pressure may “push” the iris out of the incisions, we usually use a low bottle height and low flow rate during the remaining surgery. One misconception about iris repositioning is that “the more ophthalmic viscosurgical device (OVD) used, the better the iris would be pushed back into the anterior chamber and the more stable it would be afterward.” The truth is that too much OVD usually pushes the iris out of the incisions and makes repositioning difficult because the anterior chamber pressure is too high. We use only enough OVD to maintain a normal anterior chamber depth.

Second, we have noticed that iris prolapse occurs more frequently during irrigation/aspiration (I/A) than phacoemulsification, probably because the silicone-sleeved phaco tip is larger and fits the main incision better than the I/A tip. This makes the anterior chamber a relatively stable space with relatively stable anterior chamber pressure during phacoemulsification. For this reason, we recommend using a silicone-sleeved I/A tip.

Third, in patients with a floppy and recurrently prolapsed iris, the surgeon should pay careful attention during intraocular lens (IOL) implantation. Because the floppy iris may be more proximal to the main incision, the IOL may inadvertently push the iris toward the center of the anterior chamber during implantation, causing iris dialysis at the site of the main incision. This kind of iris dialysis is difficult to deal with because the iris has lost tension. We usually inject OVD above the iris at the site of the main incision before IOL implantation, pushing the floppy iris away from the track of the implanted IOL.

Fourth, patients with iris prolapse may not need a suture at the main incision even if prolapse recurs during the surgery. A suture can cause complications. Sometimes careful hydration of the main incision is enough to close the incision. The key to hydration is to make sure the cannula tip is at the corneal stroma parallel to the main incision. In cases in which hydration of the main incision may cause recurrence of iris prolapse, injection of a filtered air bubble is a good option. The bubble maintains the anterior chamber and closes the main incision; most important, it can push the iris backward so it will not prolapse. In patients with a gas bubble in the anterior chamber, face-down position in the first few hours postoperatively is recommended. In this position, the corneal endothelial cells will be in contact with the aqueous humor. The face-down position is not needed after the first hours.

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REFERENCES

REPLY: We agree with most of Hu and Hou’s management strategies for intraoperative iris prolapse but would like to make a few additional points. In cases of actual and potential iris prolapse, it is important to identify the mechanisms of prolapse and to address these factors. In cases in which iris prolapse may pose a problem, such as patients with shallow anterior chambers, preoperative planning is essential. It is important to place the main incision within clear cornea rather than at the limbus and to combine this with a longer tunnel before entry into the anterior chamber.

However, if iris prolapse occurs, it is important to reposition the iris and reduce the risk for further prolapse. The OVD may be used to achieve this. As Hu and Hou highlighted, it is important not to overfill the anterior chamber with OVD, as the high anterior chamber pressure and the high OVD viscosity can result in reprolapse of the iris. We think a better approach is to place OVD in the anterior chamber via the main incision to reposition the iris and reduce the risk for further prolapse. We agree with most of Hu and Hou’s management strategies for intraoperative iris prolapse but would like to make a few additional points. In cases of actual and potential iris prolapse, it is important to identify the mechanisms of prolapse and to address these factors. In cases in which iris prolapse may pose a problem, such as patients with shallow anterior chambers, preoperative planning is essential. It is important to place the main incision within clear cornea rather than at the limbus and to combine this with a longer tunnel before entry into the anterior chamber.

However, if iris prolapse occurs, it is important to reposition the iris and reduce the risk for further prolapse. The OVD may be used to achieve this. As Hu and Hou highlighted, it is important not to overfill the anterior chamber with OVD, as the high anterior chamber pressure and the high OVD viscosity can result in reprolapse of the iris. We think a better approach is to place OVD in the anterior chamber via the main incision to reposition the iris and simultaneously relieve pressure in the anterior chamber; releasing OVD via the side port using a Rycroft cannula results in flow of OVD from the main incision into the anterior chamber and out through the side