

# The Unexpected IFIS Case

BY AUDREY TALLEY ROSTOV, MD; DONALD STONE, MD; AND DAVID YAN, MD

*What is currently your best strategy for dealing with an unexpected case of intraoperative floppy iris syndrome (IFIS)?*  
—Topic prepared by Steven Dewey, MD.

## AUDREY TALLEY ROSTOV, MD

I have several strategies for managing unexpected cases of IFIS. If the pupil does not dilate completely, I am always wary that IFIS is a possibility. I use intraoperative epinephrine 1:1,000 diluted 3:1 with balanced salt solution as a first line of defense when the pupil does not dilate completely and/or if the iris is billowing during the start of the case. I also favor a Malyugin Ring (MicroSurgical Technology) to retract the iris and expand the pupil. I find it is best to place the ring before performing the capsulorhexis, but the device can also be placed afterward if IFIS manifests later in the procedure. I always use biaxial (bimanual) phacoemulsification, and the small incisions and fluidics are helpful in IFIS cases. Attention to fluidics is paramount. I find that decreasing the flow rate, lowering the bottle height, and adjusting the vacuum settings work well. In addition, gently tapping on the corneal wound or gently sweeping the iris at the site of the corneal incision with the irrigation turned off can help control an unruly iris that insists on exiting the incision site despite other methods of IFIS management.



## DONALD STONE, MD

An iris that begins to misbehave unexpectedly during intraocular surgery is a much less common experience, thanks to the observations of Chang and Campbell.<sup>1</sup> Even diligence in taking the preoperative history and conducting the slit-lamp examination may fail to identify some patients whose iris will seek the nearest outlet from the eye. Pharmacologic agents such as preoperative atropine and intracameral epinephrine, lidocaine, and phenylephrine are usually effective. A changing regulatory environment and other logistical factors, howev-



er, can leave a surgeon without ready access to these agents. The first hint of a billowing iris may be quickly followed by its prolapse from a corneal or limbal wound. Attempts to reposit the iris may result in significant iris trauma and resulting atrophy. I recommend using the viscoelastic cannula via a separate paracentesis, simultaneously sweeping the iris from the wound and displacing it posteriorly with viscoelastic, and then separating the pupillary margin from the capsule in anticipation of placing a hook or ring.

Pupillary expansion rings and iris retractor hooks—the two most commonly used devices for mechanically dilating a pupil—each has its merits. Surgeons should use the device with which they are most comfortable in a given situation. If the pupillary diameter is less than 4.5 to 5 mm, I place a Malyugin Ring before I create the capsulorhexis. This avoids the more difficult scenario of dealing with a floppy iris in the presence of a capsular defect. If the capsulorhexis has already been performed, iris hooks may be placed with precision to avoid engaging the capsule. If a 0.6-mm blade is used to place the hooks, they can be quickly removed from the eye, as the flexible design will allow the iris to be dislodged as the hook straightens and exits the small paracentesis.

After the surgery is complete, ophthalmologists should have a very low threshold for securing the wound with a suture or ocular sealant to prevent leakage and iris prolapse. Intracameral placement of a miotic agent such as carbachol or acetylcholine also helps to keep the iris in place and may help to prevent postoperative increases in IOP.

## DAVID YAN, MD

In a truly unexpected IFIS case, the pupil dilates well pharmacologically and remains dilated during the capsulorhexis' creation, but it then collapses during hydrodissection or after phacoemulsification has started. If the pupil's collapse is severe (to approximately < 4 mm), I will stop the case, perform an intracameral injection of phenylephrine, and refill the anterior chamber with a dispersive viscoelastic. I will then alter my phaco settings



to reduce turbulent flow in the anterior chamber. I prefer to use a peristaltic pump with a low flow rate (20 mL/min) and my normal vacuum setting (450 mm Hg) to chop the nucleus. I try to execute all my chopping in the capsular bag before removing any segments, because any movement of the phaco tip above the iris plane would disturb the viscoelastic in the anterior chamber and increase the iris' instability. After chopping is complete, if I am using a dual-pump phaco system, I prefer to switch to a Venturi pump because of its superior followability. I simply leave the phaco tip close to the center, well away from the floppy iris, and use high followability to attract the nuclear segments out of the bag. If the iris becomes too unstable despite these optimized fluidic settings, I will stop phacoemulsification, inject VisionBlue (DORC International) into the anterior chamber, and refill the eye with a cohesive viscoelastic, including under the iris to push it away from the anterior capsule. I will then carefully insert a Malyugin Ring to dilate the pupil, while closely watching the stained capsule to ensure the device's loops do not snag the capsulorhexis. ■

*Section Editor Alan N. Carlson, MD, is a professor of ophthalmology and chief, corneal and refractive surgery, at Duke Eye Center in Durham, North Carolina.*

*Section Editor Steven Dewey, MD, is in private practice with Colorado Springs Health Partners in Colorado Springs, Colorado. Dr. Dewey may be reached at (719) 475-7700; sdewey@cshp.net.*

*Section Editor R. Bruce Wallace III, MD, is the medical director of Wallace Eye Surgery in Alexandria, Louisiana. Dr. Wallace is also a clinical professor of ophthalmology at the Louisiana State University School of Medicine and at the Tulane School of Medicine, both located in New Orleans.*

*Audrey R. Talley Rostov, MD, is in private practice with Northwest Eye Surgeons, PC, in Seattle. She acknowledged no financial interest in the products or companies she mentioned. Dr. Talley Rostov may be reached at (206) 528-6000; atalleyrostov@nweyes.com.*



*Donald Stone, MD, is a clinical associate professor at the Dean McGee Eye Institute in Oklahoma City. He acknowledged no financial interest in the products or companies he mentioned. Dr. Stone may be reached at donald-stone@dmei.org.*



*David Yan, MD, is an assistant professor in the Department of Ophthalmology at the University of Toronto. He acknowledged no financial interest in the products or companies he mentioned. Dr. Yan may be reached at dr.david.yan@me.com.*