

# Suffering and Pain Lead to Creativity

BY STEVE A. ARSHINOFF, MD, FRCSC

**L**ike most of my colleagues, I fortunately experience few very difficult situations in cataract surgery, but after more than 30 years of practice, I do recall some that I hope never to encounter again. After about a week's contemplation, I decided to write not about my worst case ever but about the one that taught me how to deal with and learn from difficult problems.

## MY FIRST TERRIBLE CASE OF INTRAOPERATIVE FLOPPY IRIS SYNDROME

When ophthalmologists were first learning to deal with intraoperative floppy iris syndrome (IFIS), just after its description by Chang and Campbell,<sup>1</sup> I had the honor of one of my surgical colleagues' referring her father to me for cataract surgery. He had been taking

tamsulosin for a few years, had 3+ bilateral nuclear sclerotic cataracts, and had brilliant, intelligent blue eyes. The patient was an extremely active 85-year-old litigation lawyer who was still in practice. He wanted bilateral simultaneous surgery, because he was too busy to come back twice for surgery. His pupils dilated poorly for my office examination. I had not experienced a horrible case of IFIS, so ignoring Chang, I agreed to perform the cataract surgeries at the same sitting.

Everything leading up to the surgery was flawless. The patient was a well-educated gentleman who did his best to cooperate fully with every test and request. He read all of the information provided and gave me full consent to proceed. I arrived at the OR feeling upbeat and eager to fix the eyes of my colleague's father. Everything went well until the surgery started.

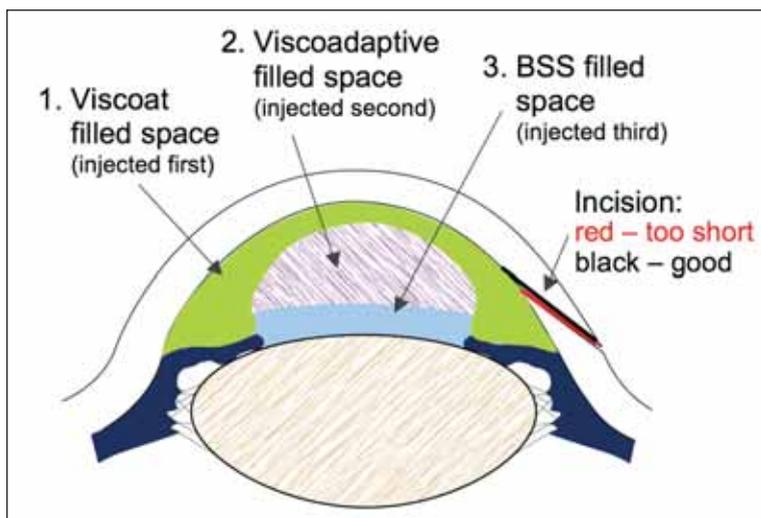


Figure 1. The IFIS soft shell. The precise positioning of different ophthalmic viscosurgical devices (OVDs) can effectively tamponade flopping of the iris, while stabilizing the anterior chamber and facilitating low-flow phacoemulsification in cases of IFIS. Note the small residual space occupied by balanced salt solution, which effectively confines the turbulence of surgery centrally, where it will not affect the compromised iris. It is critical to this technique that the surgeon use a dispersive OVD, such as Viscoat, over the iris rather than a highly viscous cohesive or viscoadaptive agent.

## THE LEAD-IN TO DISASTER

The patient's pupils never dilated to more than 5 mm after receiving the full preoperative drug protocol and extra tropicamide and phenylephrine drops.

I created a 0.8-mm sideport incision and performed an intracameral injection of isotonic preservative-free lidocaine uneventfully. As soon as I made the main incision, the pupil decentered toward the wound, and the iris prolapsed. This problem usually is not difficult to address; I simply reinserted it by injecting Healon5 (Abbott Medical Optics Inc., Santa Ana, CA) to push the iris back into the eye and then injected balanced salt solution below it in the fashion of the ultimate soft shell technique.<sup>2</sup> I thought I had things under control. My creation of the capsulorhexis with a bent 25-gauge needle was uneventful, and I used the ultimate soft shell technique to stabilize the anterior chamber. As in all cases of a small pupil, I kept the capsulorhexis

slightly smaller than the pupil, which was still 5 mm in diameter.

### THE PROBLEMS START

The insertion of the phaco tip into the eye initiated my descent into the den of a fire-breathing dragon. At first, the iris simply seemed to flutter a bit, so I lowered the flow rate to 25 mL/min and expected the problem to resolve. The pupil began to shrink, despite the adrenaline in the irrigating solution. I was able to cut the nucleus in half without incident. Upon my attempting to reinsert the phaco tip into the left heminucleus, after 30° of nuclear rotation, the iris transiently became entrapped in the phaco tip, which worsened the miosis. I realized that the case was not going well but managed the second slice of the nucleus.

### FROM BAD TO WORSE

As I repositioned the phaco tip for the third slice, the iris became entrapped again. I lowered the flow rate to 15 mL/min and the vacuum to 250 mm Hg. I began to sweat. The iris was fluttering everywhere I induced fluid flow, and I began to envision the patient's blue eyes without irides. I thought to myself, "That Chang guy was right, and my previous complacency about dealing with small pupils was wrong. Now what do I do?"

As the case progressed, I kept stopping, envisioning my colleague's father with mutilated unseeing eyes and feeling angry with myself, because I did not know what to do and should have. I repeatedly paused for a few seconds to think how to proceed, but nothing worked. I reinserted Healon5, which ameliorated the problem for a few seconds, but the OVD was insufficient to completely stabilize the situation. Eventually, I finished emulsifying the nucleus, but the pupil was now less than 4 mm in diameter. Fortunately, the low flow rate had prevented much fraying of the iris by reducing the frequency of its periodic aspiration into the phaco port.

### IT DOES NOT GET BETTER

I heaved a sigh of relief and thought that the I/A would be OK, but it was not. I repeatedly aspirated iris despite going deep into the bag under the capsulorhexis before engaging aspiration. The iris was also going over and around the capsulorhexis and finding the aspiration port.

I was really unhappy. My nurses became silent. I felt thankful that the patient's daughter was in the midst of a long case and did not come in to see how her father was doing. That thought made me more unhappy. I had performed cataract surgery (often simultaneous bilateral procedures) on more than 20 colleagues at the hospi-

tal and their family members. Their trust in me was about to end. This patient was going to sue me. My life was going to be as miserable as that of my colleague's soon-to-be-blind father, and both outcomes were my fault. I could not keep horrible thoughts from my mind, as I struggled to complete the case.

"Despite the struggle, my patient had suffered no significantly adverse event. My ego definitely had."

My progress became slower and slower, as I searched my mind for what to do. I was supposed to be the world's expert on OVDs. Couldn't I somehow enlarge and stabilize the pupil? Throughout the case, I kept fiddling, injecting Viscoat (Alcon Laboratories, Inc., Fort Worth, TX) and then Healon5, and wondering why nothing was working.

Fortunately, these problems occurred while I was operating on the patient's first eye, so he had not experienced a normal case and was not aware that anything was unusual. In fact, he was voicing his satisfaction with the progress, which further irritated me. Then again, his anxiety would have made things worse.

Somehow, I eventually removed the cortex.

### A LIGHT AT THE END OF THE TUNNEL

I replaced Healon5 in the front half of the anterior chamber, with balanced salt solution behind the OVD and filling the bag in the fashion of the second step of the ultimate soft shell technique.<sup>2</sup> As I began to inject the IOL, the iris prolapsed again, but that was a small concern compared with the previous problems. I got the lens into the intact capsular bag, removed the OVD, managed to reposition the iris after hydrating the wound, and massaged the iris back into the eye while refilling the anterior chamber through the sideport incision. The operation finally ended, and the eye looked incredibly good considering what had transpired.

### DO I REALLY WANT TO TRY THIS AGAIN?

As I was instilling drops into the operative eye and one of my nurses gently and kindly mopped my sweaty brow with a towel, she asked if I planned to proceed with the second surgery or to defer it. The patient looked around with his operative eye and told me he was impressed that he could already see better. I said, "Just give me 5 minutes to think in peace. Then, I'll decide."

I knew that, despite the struggle, my patient had suffered no significantly adverse event. My ego definitely had. His eye had shaken my belief that I knew how to manipulate OVDs to control almost any intraocular environment. I also knew that my best chance of successfully operating on his other eye was now, when every nuance of the first eye's behavior was fresh in my mind—so fresh that I could feel a severe tension headache developing. Undoubtedly, the patient's contralateral eye would behave exactly the same. If I were going to devise a way to deal with IFIS eyes using OVDs, now was the best time. I felt drained, however, so I sat thinking in the corner with my face to the wall in a silent OR. I recalled that, when Albert Einstein was presented with a difficult physics problem, he said, "Let me tinker on this a little." He subsequently came up with a brilliant answer. I am not Einstein, and the answer was not coming to me.

### I STARTED TO RECOVER

After about 4 minutes, my heart rate had returned to normal, and I had stopped sweating. My patient was commenting on how well he could see, and my nurses had commenced reassuring him that he was doing really well. This exchange was making me feel anxious and reassured at the same time. Suddenly, I thought I understood the rheology of the flopping iris. I announced to my staff that we were going to proceed with the patient's right eye. I told them to give me Healon5 and Viscoat, to lower the flow rate on the phaco machine to 15 mL/min, and to decrease the vacuum to 225 mm Hg. I asked them to double the dose of epinephrine in the irrigating solution.

### THE SECOND EYE

I made long, tight tunnels for the incisions to prevent the iris from prolapsing. The central entry of both incisions would cause the iris to bulge under the corneal dome, not through the incision. Recognizing that dispersive OVDs are only aspirated in small aliquots, I placed Viscoat around the perimeter of the iris to dampen any oscillations of the patient's iris. I then injected Healon5 in the center of the pupil, soft shell style, to move the Viscoat away from the center of the eye and confine it to the angle above the iris. Next, I injected intracameral lidocaine (which I have since replaced with phenylephrine for greater dilation) under the Healon5, on the lenticular surface, to permit me to perform the ultimate soft shell technique in a small, confined space. I did not want the balanced salt solution to pass under the area of Viscoat (Figure 1). I kept the capsulorhexis smaller than the 5-mm pupil. I performed hydrodissection very care-

fully to avoid disturbing the viscoelastic bridge of the anterior chamber that I had created. Phacoemulsification proceeded slowly but flawlessly, as did the I/A.

### SUCCESS AT LAST

I had figured out how to deal with IFIS eyes!<sup>3</sup> When the patient sat up, he looked at the clock, and a huge smile spread over his face. When he left the OR, my nurses looked at me. They complimented me on having the courage to proceed and on using what I had learned from the first operation to dramatically and successfully alter my procedure for the patient's second eye. I said, "Einstein was no dummy. Sometimes, you have to just take time out and think a little." They looked at me like I was crazy.

### LEARNING FROM ONE'S STRUGGLES

I never told my surgical colleague or her father in detail what happened that day. Only two nurses and I know the full story. I try to choose scrub nurses who remain calm during a crisis, but I never understood so clearly what William Osler, MD, meant by equanimity until that day. The case I have described made me a calmer and better surgeon. I learned that it is not always best to defer surgery on the second eye if operating on the first eye was difficult. After stopping and thinking a little, the surgeon must decide with equanimity which way will most likely lead to the best outcome for the patient. The essential point in the decision is whether or not he or she satisfactorily dealt with the problems of the first eye; this has become my cardinal rule for bilateral cataract surgeries. After all, the ability to decide what will give patients the best surgical outcome is the only reason why the surgeon is there, rather than a technician. ■

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