Infusion misdirection syndrome: preventive and management strategies

The article by Anisimova et al. presents optical coherence tomography findings demonstrating the accumulation of infusion fluid between the posterior capsule (PC) and anterior hyaloid membrane during phacoemulsification. The authors proposed a “new classification of infusion misdirection syndrome to explain the intraoperative process.” Subsequently, there was an exchange in the letters to the editors between Gryzbowski and Kanclerz and 2 of the authors of the original article concerning the appropriate terminology for the condition.

Infusion misdirection syndrome (IMS) was first reported, described, and named by me in 1990. In addition, drawings depicting the flow of infusion fluid through the zonule and into the retrocapsular space were published in the JCRS in 1993. IMS was also the subject of my article of June 1991 Phaco Tips, published in Ocular Surgery News. In these publications, I also described the appearance of lens “emulsate” and the clinical similarities to subchoroidal hemorrhage (SCH).

It is extremely important to consider SCH when forward movement of the PC occurs in the presence of normal or elevated intraocular pressure during cataract surgery. SCH can be annular in nature; this can be visually occult and, thereby, not interfere with the red reflex. If injection of ophthalmic viscosurgical device (OVD) fails to enable posterior repositioning of the PC (this is the usual development in IMS because the infusion fluid is redirected through the zonule and returns to the anterior chamber (AC), then the presence of SCH must be considered. In this situation, the procedure should be discontinued and examination of the posterior segment by ophthalmoscopy and/or ultrasonography is indicated to rule out this possibility.

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REFERENCES


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Reply: We thank Mackool for bringing to our attention his 1990 publication that describes the presence of IMS during phacoemulsification in patients with intact PC, when the fluid passes through the lax or even sometimes seemingly intact zonular fibers into the retrolenticular space. Anecdotally, the author observed the microscopic-size lens particles located behind the PC.

DISCLOSURES

1. We do agree that the proposed technique is simpler and might result in less intraoperative complications with a better stability of the IOL–capsular bag complex.
2. Recently, we have adopted the newly released Carlevale IOL (FIL-SSF) in most cases of scleral fixation with or without capsular bag instability. This specific foldable IOL can be inserted through a 2.2 mm corneal tunnel and is easily fixated to the sclera with excellent centration. The Carlevale IOL is a hydrophilic acrylic IOL with 4 points of scleral sulcus counterpressure and T-shaped harpoons protruding off the closed haptics to allow self-anchoring on the sclera without the need for sutures. This IOL is 13.2 mm long, and the optic plate is 6.5 mm wide. Our surgical series with Carlevale IOL consists of 18 patients. Indications for surgery were IOL dislocation (12 cases [67%]), IOL exchange due to IOL opacification (5 cases [28%]), and secondary implant due to complicated cataract surgery (1 case [5%]). The mean ± SD age of patients was 81.3 ± 4.1 years. The mean preoperative corrected visual acuity was 0.69 ± 0.51 logarithm of the minimum angle of resolution (logMAR). After a mean follow-up of 9.3 ± 6.9 months, the mean corrected distance visual acuity improved by 2.6 Early Treatment Diabetic Retinopathy Study lines to 0.43 ± 0.48 logMAR (P = .001). We recorded 1 case (5.5%) of transient intraoperative bleeding in the anterior chamber. An optimal centration and stability of the IOL were observed in all cases. No cases of scleral or conjunctival erosion were observed. One case (5.5%) of transient intraocular pressure increase developed postoperatively.

We believe that new developments in surgical techniques and IOL design offer the ophthalmic surgeon a plethora of options, allowing safe and stable lens positioning in the absence of viable capsule remnants even in more complicated cases.—Daniele Veritti, MD, Lisa Grego, MD, Francesco Samassa, MD, Valentina Sarao, MD, Paolo Lanzetta, MD

Disclosures: Prof. Lanzetta reports personal fees as consultant from Allergan, Inc., Alcon, Laboratories, Inc., Bayer, Bausch & Lomb, Inc., Novartis, CenterVue, Roche, and Topcon Corp., outside the submitted work. None of the other authors have any financial or proprietary interest in any material or method mentioned.

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