

Delayed Onset of Postoperative Inflammation

BY JAMES P. DUNN, MD; ANNA S. KITZMANN, MD; AND NICK MAMALIS, MD

CASE PRESENTATION

A 75-year-old woman is referred to you by her local optometrist for a 2-week history of anterior uveitis in her right eye that is unresponsive to hourly prednisolone acetate. She had uneventful bilateral cataract surgery 8 years ago. Her visual acuity is 20/100, "pinholing" to 20/60, in the affected right eye (her visual acuity had been 20/25).

The patient presents with large clumps of material that have settled in the inferior angle of the anterior chamber, with smaller material floating in the deep anterior chamber (Figures 1 and 2). The IOP is normal. The IOL is centered, with no evident phacodonesis and a central opening in the posterior capsule. The anterior vitreous has rare cells, but the posterior vitreous is clear. No cystoid macular edema is evident on examination of the macula. The retina shows mild nonexudative age-related macular degeneration. Ultrasound shows a centered IOL with some residual lens material in the capsular bag. The patient has no autoimmune conditions in her history or current symptoms suggestive of such conditions on a review of systems.

How would you proceed?



Figure 1. A relatively quiet anterior chamber with white material in the inferior angle.

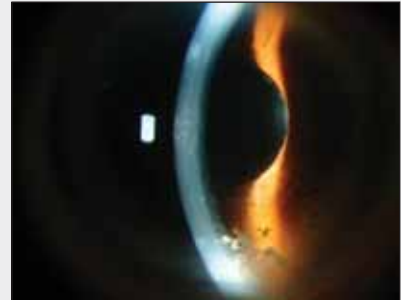


Figure 2. Close-up view of white material adjacent to the cornea and most dense in the inferior angle.

JAMES P. DUNN, MD

This woman most likely has delayed-onset pseudophakic endophthalmitis following YAG capsulotomy. This condition is one of the "uveitis masquerade syndromes," which should be suspected when corticosteroids are ineffective. In many cases, the uveitis occurs only after a YAG laser capsulotomy is performed, which releases pathogens previously sequestered inside the eye. Common causes include *Propionibacterium acnes*, *Staphylococcus epidermidis*, aerobic streptococci, *Actinomyces*, and fungi such as *Candida parapsilosis*. The incidence of this complication is approximately 0.02% after cataract surgery.¹ Retained lens cortex increases the risk of these infections. Symptoms, including blurred vision and mild light sensitivity, are usually relatively mild, but the pain and redness of acute postoperative endophthalmitis are absent. Findings include capsular plaques, vitritis, and keratic precipitates. Hypopyon can occur.

The diagnosis is confirmed with cultures of aqueous or vitreous humor. The offending pathogens can be fastidious, and cultures should be kept for at least a week to allow the growth of slow-growing organisms.

Once the diagnosis is confirmed, intravitreal antibiotics or antifungals are prescribed. Not uncommonly, the infection fails to respond completely, and a complete posterior capsulectomy is necessary. In some cases, the IOL must be removed to eliminate any nidus of infection; after the eye is sterilized, a secondary IOL can sometimes be placed with iris or scleral fixation. Visual outcomes are more favorable than in cases of acute postoperative endophthalmitis, but long-term topical corticosteroids are sometimes necessary, even after the apparent sterilization of the infection.² *P acnes* endophthalmitis has the best prognosis and fungal endophthalmitis the worst.

ANNA S. KITZMANN, MD

Given the clinical history, several factors (eg, the patient's age, the fact that she has no prior history of anterior uveitis, and the fact that the anterior uveitis has been unresponsive to hourly prednisolone acetate) suggest that this patient does not have a typical anterior uveitis. From the clinical photographs, the anterior chamber seems to contain fine clumps of whitish mate-

rial, which does not appear like anterior chamber cell.

As the initial next step in management, I would recommend an anterior chamber tap. I would also try to obtain information on the type of IOL that was implanted in each eye to determine if the patient could be having a reaction to the lens material. If the anterior chamber tap were not diagnostic, then the residual lens material could be an underlying etiology. Another dilated examination might help to determine how much lens material remains in the capsular bag as well as whether this material could be removed without an IOL exchange or if an IOL exchange were necessary.

Assuming that the residual lens material is the underlying etiology, I would recommend surgery to remove this material alone, if possible, or an IOL exchange. To prepare for surgery, I would perform IOL calculations preoperatively. With I/A, I would try to remove any residual lens material, and I would use iris hooks as necessary for better exposure if pupillary dilation were inadequate. If the lens material were not easily removable, then I would try to remove the lens and the residual lens material from the capsular bag, after which I would place a three-piece IOL in the sulcus. If the lens could not be freed from the capsular bag and the zonules were compromised, then I would remove the entire lens-capsular bag complex, perform an anterior vitrectomy with preservative-free triamcinolone, and place an ACIOL.

NICK MAMALIS, MD

This patient has delayed-onset anterior uveitis after evidently uncomplicated cataract surgery. The differential diagnosis includes both infectious delayed-onset endophthalmitis and a lens-induced uveitis. The 8-year time frame from the original surgery to the onset of the inflammation would make an infectious etiology unlikely. Nevertheless, a very low-grade bacterium such as *P acnes* or a low-grade *S epidermidis* could conceivably have been sequestered within the lens capsular bag and eventually caused this uveitis.

A more likely etiology for this delayed-onset postoperative inflammation, however, is a lens-induced inflammation such as a phacotoxic uveitis or a phacoantigenic uveitis (previously known as phacoanaphylactic endophthalmitis). The large clumps of fluffy material present in the inferior anterior chamber have the appearance of cortical-type material, with a granulomatous-type inflammatory cellular reaction surrounding them. Once again, what is unusual about this case is that it occurred 8 years after surgery. Phacoantigenic uveitis is usually characterized by a chronic, relapsing, granulomatous anterior uveitis, which initially responds to steroids but becomes less responsive in time. A postoperative anterior uveitis secondary to lens cortical material is the most likely etiologic factor in this patient, especially because the ultrasound shows residual lens material within the capsular bag.

The treatment for this condition is evacuation of the

material within the anterior chamber as well as within the lens capsular bag. Removing the cortical material may be difficult, because the capsular bag may have partially sealed down 8 years after cataract surgery. If the lens capsule is overlapping the anterior surface of the IOL, however, viscoelastic material may be carefully injected to open the capsule and allow aspiration of residual cortical material. In addition, cultures should be taken from the material within the lens capsular bag to absolutely rule out a low-grade, chronic, infectious endophthalmitis such as *P acnes*. It would also be helpful if the aspirated material could be evaluated histopathologically for signs of a granulomatous-type inflammation. Consideration should be given to the injection of an antibiotic with strong gram-positive coverage, such as vancomycin, into the lens capsular bag after evacuation of the cortical material. If the cortical material cannot be completely removed, the entire lens capsular bag and its contents, including the IOL, may have to be removed in order to completely calm the anterior segment inflammation. ■

For more on this case, visit eyetube.net/?v=devim.



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