Late Capsular Block Syndrome Associated With Propionibacterium acnes

Late capsular block syndrome (CBS) is a postoperative complication of cataract surgery. It occurs in cases in which there is a 360° adhesion between the continuous curvilinear capsulorrhexis and the anterior surface of the optic of a posterior chamber (PC) intraocular lens (IOL). This adhesion creates the potential for the formation of a sequestered space between the IOL and the posterior lens capsule. In late CBS, a turbid or milky fluid may form within this space, causing posterior distention of the capsular bag.1

Treatment with a diagnostic aspiration of the fluid from the capsular bag followed by antibiotic injection was recommended, and informed consent was obtained. The eye was prepped with a povidine-iodine solution, 5%. A sterile eyelid speculum was placed, and anesthesia was obtained with a subconjunctival injection of lidocaine, 2%. At the slit lamp biomicroscope, measuring 3.5 mm posterior to the limbus, a 30-gauge needle was directed into the capsular bag via the pars plana, and the milky fluid was aspirated (Figure 2). This process was followed by an injection of vancomycin hydrochloride (1 mg) into the capsular bag. The specimen was placed in enriched thioglycolate broth (Becton, Dickinson and Co, Franklin Lakes, New Jersey) for culture and submitted to the Campbell Ocular Microbiology Laboratory (UPMC Eye Center, University of Pittsburgh, Pittsburgh, Pennsylvania) for analysis. The culture was positive for P. acnes. The patient’s visual acuity remained unchanged during 49 months of follow-up, without intraocular inflammation.

Case 2. A 64-year-old woman was referred for an Nd:YAG capsulotomy in her left eye. She had undergone phacoemulsification surgery with PC IOL 62 months earlier. On examination, her BCVA was 20/50, and her anterior chamber was quiet, with a well-positioned PC IOL. The posterior lens capsule was distended with milky fluid and white fluffy material inferiorly. The results of the rest of her eye examination were normal. As described in case 1, the fluid was aspirated from the capsular bag, and a sample was placed in thioglycolate broth followed by a vancomycin hydrochloride (1 mg) injection. The culture yielded P. acnes. During the ensuing 52 months, there was no sign of inflammation, and the patient’s vision remained 20/20.

Case 3. A 66-year-old woman, 35 months after uncomplicated phacoemulsification surgery, presented with blurred vision in her left eye of a few days’ duration. Her BCVA was 20/20. On examination, the posterior lens capsule was distended with milky fluid. There was no sign of in-
flammation. Again, the milky fluid was aspirated and plated for culture, and vancomycin hydrochloride (1 mg) was injected. The culture was negative for organisms. The patient’s eye remained quiet for the following 35 months, and her vision has remained stable.

Comment. Propionibacterium acnes is a slow-growing aerotolerant anaerobic gram-positive pathogen. Classically, it is associated with a chronic endophthalmitis, in which patients present with symptoms of anterior uveitis and a characteristic plaque is seen on the posterior lens capsule. In contrast, all 3 eyes described herein were completely quiet, without any clinical evidence of inflammation. We propose that the pronounced inflammatory reaction seen in chronic endophthalmitis secondary to P acnes is attributable to access of the organism to the anterior chamber, allowing the eye to react with an inflammatory response. In late CBS, there is an absence of inflammation, as the P acnes in the turbid fluid is sequestered within the capsular bag owing to the tight seal of the anterior capsule to the IOL. Interestingly, when this type of case is treated with an Nd:YAG posterior capsulotomy, the milky fluid can be visualized tracking into the vitreous cavity, and we have not yet observed inflammation or endophthalmitis. However, in 1988, Carlson and Koch1 did report a case of P acnes endophthalmitis after an Nd:YAG laser capsulotomy. Whether their patient had late CBS is unknown. In our experience with other such cases that were treated with an Nd:YAG laser, it seems that this turbid fluid, with its debris, is cleared quite effectively from the vitreous cavity without consequence. A possible explanation for this lack of inflammation is that the bacterial count is low, with a prolonged doubling time of P acnes, or perhaps the oxygenated vitreous serves as a poor culture medium for this anaerobic species. Alternatively, perhaps the anterior segment inflammation seen in chronic endophthalmitis is attributable to an immunologic phenomenon associated with P acnes infection.5 These cases bring into question the role of P acnes as a pathogen in late CBS and whether antibiotic therapy, topical or intravitreal, is actually indicated.

In 1980, before the introduction of the Nd:YAG laser, Lindstrom and Harris2 introduced a technique for creating a posterior capsulotomy by inserting a needle through the pars plana to open the capsule. In our series, this technique was adapted for sampling the milky fluid and injecting an antibiotic into the capsular bag. It has the advantage of leaving the anterior chamber and the IOL undisturbed and can be easily performed at the slit lamp. Because intravitreal injections for macular degeneration have become commonplace, the technique can be performed safely, with minimal discomfort to the patient. On rare occasion, there may be a role for the application of this technique in other conditions.

Late CBS typically presents with blurred vision months after uncomplicated phacoemulsification cataract surgery with an IOL. On examination, there is distention of the posterior lens capsule, which contains a milky fluid with particulate debris. We have shown that this fluid may contain P acnes; however, in our experience, it has not been associated with inflammation or an infectious process. Therefore, this condition may be treated with Nd:YAG capsulotomy, but caution is warranted, as there may be a slight risk for endophthalmitis.

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