

worse over time; however, severity index was (Pearson correlation coefficient, 0.28;  $P = .04$ ; Figure).

Although glistenings have been noted in many different IOLs,<sup>4,5</sup> the focus of this study is single-piece IOLs. Glistening progression also has been confirmed in other studies<sup>5,6</sup> of three-piece IOLs. It is still not known if this progressive severity finally reaches a maximum severity and when or what that may be.

Most studies have not found an impact on visual function; however, one study<sup>7</sup> found significant loss of high spatial frequency contrast vision, and our results are also suggestive of this outcome. Visual impact would be related directly to glistening size and density, as suggested by the similar correlation coefficients of the two in our study.

The average glistening diameter at 10  $\mu\text{m}$  is similar to our in vitro findings.<sup>3</sup> Measuring glistening size in vivo is new. Our main study weakness was not following up these patients over time.

In conclusion, glistenings were found in all IOLs studied and became worse over time. They also may impact high spatial resolution contrast sensitivity. Mild cases are unlikely to be of importance; however, studying the extreme presentation would require a large prospective study.

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## Traumatic Lenticular Abscess: Clinical Description and Outcome

Revathi Rajaraman, Prajna Lalitha, Anita Raghavan, Manikandan Palanisamy, and Namperumalsamy Venkatesh Prajna

**PURPOSE:** To analyze cases with posttraumatic lenticular abscess and study the etiology, clinical presentation, management, and outcome.

**DESIGN:** Retrospective case series.

**METHODS:** Seventeen eyes of 17 patients with traumatic lenticular abscesses were managed with extracapsular cataract extraction after aspirating the abscess.

**RESULTS:** The mean age of the patients was 40.3 years, and males constituted 82%. The mean time to presentation after injury was 14.35 days (range, one to 60 days), and the patients had a mean follow-up of 125.94 days (range, 21 to 300 days). Culture of the lenticular abscess revealed bacterial growth in eight cases (47%) and fungi in four cases (23.5%). In five (29.4%) cases, culture was negative. *Staphylococcus epidermidis* grew in seven cases (41%). Thirteen eyes (77%) had best-corrected visual acuity better than 20/120.

**CONCLUSIONS:** Surgical removal of the abscess, with systemic and local antimicrobial treatment is effective in cases of posttraumatic intralenticular abscess. (*Am J Ophthalmol* 2007;144:144–146. © 2007 by Elsevier Inc. All rights reserved.)

**I**NTRALENTICULAR ABSCESS IS A RARE ENTITY THAT OCCURS after trauma,<sup>1–3</sup> cataract surgeries,<sup>4,5</sup> or as metastatic infection.<sup>6,7</sup> It is important to recognize this sequestered infection and to evacuate the abscess surgically to prevent chronic endophthalmitis. In this report, we describe a series of cases of posttraumatic lenticular abscess highlighting the characteristic clinical features and their management.

Seventeen cases diagnosed as lenticular abscess (defined as an infiltrative abscess within the lens substance) from January 2004 to December 2005 were analyzed. The history and details of slit-lamp examination were documented. Ultrasonographic B-scan was performed in all cases. Surgical intervention was done after controlling the

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From Cornea & Refractive Surgery Services, Aravind Eye Hospital and Postgraduate Institute of Ophthalmology, Avinashi Road, Coimbatore, India (R.R., A.R.); Microbiology Laboratory, Aravind Eye Hospital and Postgraduate Institute of Ophthalmology, Avinashi Road, Coimbatore, India (M.P.); Department of Ocular Microbiology, Aravind Eye Hospital and Postgraduate Institute of Ophthalmology, Madurai, India (P.L.); and the Department of Cornea and Refractive Surgery, Aravind Eye Hospital and Postgraduate Institute of Ophthalmology, Madurai, India (N.V.P.).

Inquiries to Prajna Lalitha, Aravind Eye Hospital and Postgraduate Institute of Ophthalmology, 1, Anna Nagar, Madurai, Tamil Nadu, 625 020, India; e-mail: lalitha@aravind.org

initial inflammation with topical and systemic broad-spectrum antibiotics.

The lenticular abscess was drained in the operating room under regional anesthesia, and extracapsular cataract extraction was performed. Vitrectomy and administration of intravitreal antimicrobial agents were done in cases with capsular rent or vitreous involvement. Microbiologic analysis of the lens aspirates and vitreous humor were performed. Postoperatively, antibiotics, antifungal agents, and systemic steroid therapy were instituted for three to six weeks. In cases with sufficient posterior capsule, a posterior chamber intraocular lens (IOLs) was implanted later.

The trauma typically resulted from long, sharp objects such as thorns, twigs, or needles. There was mild-to-moderate anterior chamber reaction, and the sealed anterior capsular entries were marked by iris adhesion. The characteristic feature was an infiltrative abscess within the lens substance and a perilenticular exudative lesion between the iris and lens (Figure). The abscess was a yellowish-white, dense, homogenous opacity well demarcated from the rest of the lens. Four cases showed vascularization from the adjacent iris adhesion (Figure). Only mild anterior vitritis was noticed in the B-scan as well as intraoperatively. The aspirate from the lens abscess was positive for bacteria in eight cases (47%), positive for fungus in four cases (23.5%), and the cultures were negative in five cases (29.4%). Among the eight bacterial isolates, *Staphylococcus epidermidis* was the most common (seven cases [41%]), whereas *Pseudomonas* grew in one case. The species of fungus that were grown in the four cases were *Aspergillus niger*, *Bipolaris*, *Cladosporium*, and unidentified hyaline fungi. Cultures from vitreous aspirates were negative. Thirteen eyes recovered better than 20/120 vision. Amblyopia in two children and a corneal scar resulted in less than 20/400 vision at the last follow-up.

There are sporadic case reports of lenticular abscess in the literature, where *Propionibacterium acne* and fungi were identified as causative organisms and treated with pars plana lensectomy and vitrectomy. In this series, the injuries were attributable to long, sharp, contaminated objects common among agricultural workers in our area. The stiletto type of injury presumably inoculates the causative organism directly into the lens substance. The characteristic clinical picture was a noninvasive infection sequestered as a lenticular abscess by a sealed capsular wound with adjacent inflammatory reaction with varying periods of clinical presentation. The characteristics of this type of injury are unique to this part of the world (South India) where the majority of patients are from rural areas engaged in agricultural activities with limited access to eye care. The lack of vitreal involvement prompted an anterior segment approach without posterior segment surgery as reported in previous works. In our series, the detection of pathogens could have been improved either with maintaining cultures for longer periods of time or by molecular diagnostic tests.

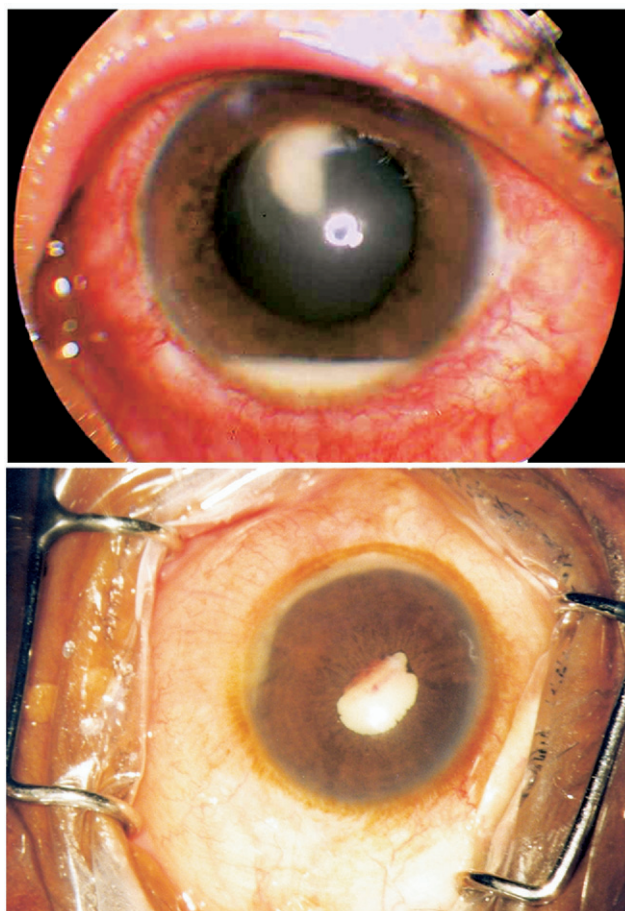


FIGURE. Slit-lamp photograph of traumatic lens abscess showing the corneal wound at 11 o'clock with corresponding localized abscess in the lens and 2 mm hypopyon (Top). Slit-lamp photograph of traumatic lens abscess showing total abscess of the lens with new vessels growing from the iris. The anterior segment is devoid of any reaction (Bottom).

In addition to infective pathology, an inflammatory component was also indicated by granulation tissue adjacent to the capsular wound and hypopyon in the anterior chamber. This is further endorsed by the good response shown to steroids. Whether this reaction is only a nonspecific inflammation or an immune phacoantigenic reaction in the presence of an adjuvant microorganism is not clear.<sup>5-7</sup> We found that surgical evacuation of the abscess and extracapsular capsular cataract extraction under antimicrobial coverage and steroids eradicates the infection with good visual recovery.

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## Prostaglandin E<sub>2</sub> Inhibition and Aqueous Concentration of Ketorolac 0.4% (Acular LS) and Nepafenac 0.1% (Nevanac) in Patients Undergoing Phacoemulsification

Frank A. Bucci, Jr, L. David Waterbury, and Loretta M. Amico

**PURPOSE:** To determine the prostaglandin E<sub>2</sub> (PGE<sub>2</sub>) levels and aqueous concentrations achieved with ketorolac 0.4% (Acular LS; Allergan, Inc, Irvine, California, USA) and nepafenac 0.1% (Nevanac; Alcon Laboratories, Inc, Fort Worth, Texas, USA).

**DESIGN:** Single-center, randomized, double-masked study.  
**METHODS:** One hundred and thirty-two patients received ketorolac or nepafenac four times daily for two days before cataract extraction. Aqueous samples obtained at surgery were analyzed for PGE<sub>2</sub> levels (competitive enzyme immunoassay) and drug concentrations.

**RESULTS:** More ketorolac eyes than nepafenac eyes had PGE<sub>2</sub> levels less than the level of detection (<100 pg/ml; 26/42 [61.9%] and 7/40 [17.5%], respectively; *P* < .001). Mean PGE<sub>2</sub> levels in ketorolac eyes were lower

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From the Bucci Laser Vision Institute, Wilkes Barre, Pennsylvania (F.A.B., L.M.A.); and Pacific BioLabs, Hercules, California (L.D.W.).

Inquiries to Frank A. Bucci, Jr, Bucci Laser Vision Institute, 158 Wilkes Barre Township Boulevard, Wilkes Barre, PA 18702; e-mail: buccivision@aol.com

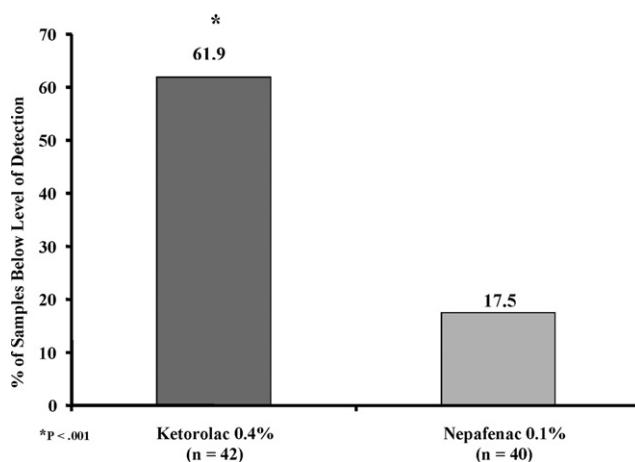


FIGURE 1. Bar graph showing percent of samples treated with ketorolac 0.4% or nepafenac 0.1% that were below the minimum level of detection (100 pg/ml).

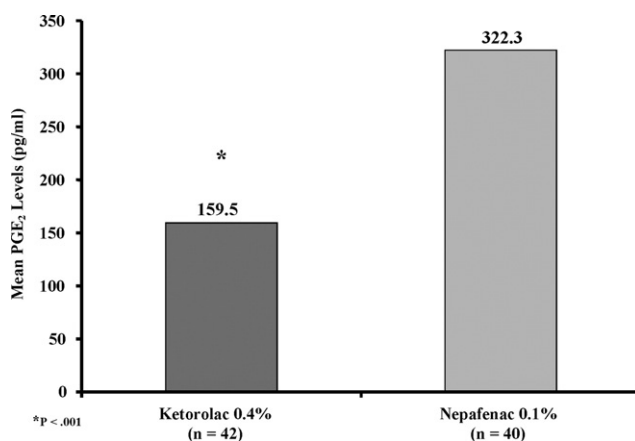


FIGURE 2. Bar graph showing mean prostaglandin E<sub>2</sub> (PGE<sub>2</sub>) levels in eyes treated with ketorolac 0.4% and nepafenac 0.1%.

than that in nepafenac eyes (159.5 ± 114.66 pg/ml and 322 ± 197.8 pg/ml, respectively; *P* < .001). The mean aqueous level was 1079.1 ± 881.5 ng/ml with ketorolac and 353.4 ± 126.0 ng/ml with amfenac. The nepafenac eyes exhibited 588.4 ± 394.6 ng/ml of the inactive nepafenac molecule (*P* < .001 vs ketorolac).

**CONCLUSIONS:** Ketorolac 0.4% inhibited PGE<sub>2</sub> and penetrated into aqueous significantly more than nepafenac 0.1%. (*Am J Ophthalmol* 2007;144:146-147. © 2007 by Elsevier Inc. All rights reserved.)

**T**OPICAL NONSTEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDs) reduce ocular inflammation after ophthalmic surgeries by inhibiting the production of prostaglandins.<sup>1</sup> NSAIDs irreversibly inhibit prostaglandin synthesis by interfering with cyclooxygenases 1 and 2.<sup>2</sup> This study investigated the ocular inhibition of prostaglandin E<sub>2</sub> (PGE<sub>2</sub>) and aqueous concentrations achieved by ketorolac