**Oral Azithromycin for the Treatment of Meibomitis**

Common treatment regimens for meibomitis include eyelid hygiene, lubricants, topical antibiotics, topical steroids, and systemic medications. Azithromycin is a macrolide antibiotic with robust antimicrobial and anti-inflammatory properties, and topical azithromycin, 1%, ophthalmic solution (Azasite) has been shown to be efficacious in treating anterior and posterior blepharitis. Azithromycin’s pharmacokinetic profile adds to its potential value in treating meibomitis: a single 1-g oral dose results in high conjunctival tissue and tear fluid concentrations that persist for at least 14 days. Pulsed oral azithromycin has been reported to improve ocular signs and symptoms in patients with papulopustular rosacea. Based on this, azithromycin has potential efficacy in treating meibomitis using a short, pulsed dosing regimen, and we have used azithromycin in this fashion for the treatment of symptomatic meibomitis. We performed a retrospective review of patients receiving oral azithromycin for meibomitis to determine its impact on relieving patients’ symptoms.

**Methods** | The medical records of all patients seen in one author’s (T.P.M.) clinic at the Francis I. Proctor Foundation between January 1, 2009, and December 31, 2010, and who were treated with oral azithromycin for symptomatic meibomitis were reviewed. Patients were excluded if they had unrelated ocular pathology likely contributing to symptoms or if no follow-up had been recorded at the time of review. Collected data included patient demographic characteristics, all recorded prior (failed) treatments, and all concurrent treatments used in combination with oral azithromycin. Azithromycin was dosed as 1 g orally once per week for 3 weeks. Time to follow-up, subjective improvement, and adverse events as seen on examination or per patient report were recorded.

**Results** | Thirty-two patients (19 female; mean age, 60 years) with meibomitis qualified for this study based on inclusion and exclusion criteria. All patients reported poor response to commonly prescribed treatments including topical antibiotics and steroids (Table), and all patients were treated with oral azithromycin as well as concurrent topical steroid treatment for the duration of the study period, most frequently with sulfacetamide sodium, 10%/prednisolone acetate, 0.2%, drops applied twice daily to the eyelid margins. Other concurrent treatments included warm compresses (13 patients [41%]), topical metronidazole (6 patients [19%]), and topical antibiotics (3 patients [9%]).

Twenty-four patients (75%) reported symptomatic improvement with their treatment regimen at their follow-up visit (mean time to follow-up, 5.6 weeks; range, 3-11 weeks). Of patients with previous failure of steroids, other antibiotics, or both, similar rates of symptomatic improvement were seen (Table). When analyzing patients who were treated solely with oral azithromycin and topical steroid without any other concurrent treatments, 8 (67%) reported symptomatic improvement, including 7 (64%) of those who had previous failure of topical steroid treatment (Table). The most commonly reported adverse effects included gastrointestinal upset (3 patients [9%]) and ocular discomfort (2 patients [6%]), none of which required discontinuing use of azithromycin.

**Discussion** | The results of our study support oral azithromycin as being efficacious in treating symptomatic meibomitis, particularly in patients who have had failure of other commonly prescribed interventions. All of our patients had a history of failure of other treatments, but 75% reported symptomatic improvement with a regimen including oral azithromycin. While all patients also received a topical steroid, similar numbers noted improvement even when controlling for those who had past failure of steroid treatment. Adverse effects were minimal and mild, supporting the safety of this intervention. Our results further support the results of a recent small prospective study of 13 patients receiving pulsed oral azithromycin for treatment of non-rosacea posterior blepharitis, which showed similar improvement in patients’ symptoms and clinical signs. Based on our study as well as the limited evidence in the current literature, oral azithromycin appears to be a valuable tool in the treatment of meibomitis and further prospective studies would be justified to better assess efficacy and duration of effect.

Jonathan B. Greene, MD
Bennie H. Jeng, MD
Robert E. Fintelmann, MD
Todd P. Margolis, MD, PhD

**Author Affiliations:** Department of Ophthalmology, University of California, San Francisco (Greene, Jeng, Margolis); Francis I. Proctor Foundation, University of California, San Francisco (Jeng, Margolis); Department of Ophthalmology, San Francisco General Hospital, San Francisco, California (Jeng); Barnet-Dulaney-Perkins Eye Center, Phoenix, Arizona (Fintelmann); now with the Department of Ophthalmology and Visual Science, University of Michigan Kellogg Eye Center, Ann Arbor (Greene).

**Corresponding Author:** Jonathan B. Greene, MD, Department of Ophthalmology and Visual Science, University of Michigan Kellogg Eye Center, 1000 Wall St, Ann Arbor, MI 48105 (jbgreene@med.umich.edu).

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Table. Symptomatic Improvement Based on Prior Treatments

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Prior Failed Treatments</th>
<th>Patients, No.</th>
<th>Improved Patients, No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azithromycin, topical steroid, and any other concurrent treatment</td>
<td>Any</td>
<td>32</td>
<td>24 (75)</td>
</tr>
<tr>
<td></td>
<td>Antibiotic</td>
<td>25</td>
<td>18 (72)</td>
</tr>
<tr>
<td></td>
<td>Steroid</td>
<td>27</td>
<td>23 (85)</td>
</tr>
<tr>
<td></td>
<td>Antibiotic and steroid</td>
<td>22</td>
<td>18 (82)</td>
</tr>
<tr>
<td>Azithromycin and topical steroid only</td>
<td>Any</td>
<td>12</td>
<td>8 (67)</td>
</tr>
<tr>
<td></td>
<td>Steroid</td>
<td>11</td>
<td>7 (64)</td>
</tr>
</tbody>
</table>

*Includes all patients.

*bSubset of patients whose intervention consisted of only oral azithromycin and topical steroid.
Intramuscular Hemangioma of the Inferior Oblique: A Rare Cause of Extraocular Muscle Enlargement

Intramuscular hemangioma of skeletal muscle is common within systemic sites but very rare within extraocular muscle. We describe a patient with an enlarged inferior oblique who harbored such a lesion.

Report of a Case | A healthy 25-year-old man noted a gradually painless left lower eyelid mass of 1 year’s duration. He denied diplopia and blurred vision. Best-corrected visual acuity was 20/20 OD and 20/25 OS. There was left hyperglobus with a firm, mobile, nontender mass palpable through the left lower eyelid (Figure 1A). While versions appeared full, diplopia could be elicited in downgaze and left gaze. Exophthalmometry showed 1 mm of proptosis in the left eye. No other ocular abnormalities were noted.

Computed tomography with contrast showed a mildly enhancing soft-tissue mass in the anterior portion of the left orbit in the region of the left inferior oblique. The mass measured $1.7 \times 2.2 \times 1.0$ cm (Figure 1B). Magnetic resonance imaging with contrast showed the mass to have decreased T1 and T2 signals with marked, slightly heterogeneous contrast enhancement (Figure 1C).

Biopsy of the mass was performed through a lower transconjunctival incision. The mass appeared reddish and striated (Figure 2A). Copious bleeding was encountered.

Histological sections showed striated muscle fibers, some of which were in phases of degeneration and regeneration. Separating these fibers, the endomysial compartment contained an array of numerous capillary-sized blood vessels and a few larger...