Pediatric Infectious Endophthalmitis: A Case Series

To the Editors:

We wish to share the results of a case series on pediatric endophthalmitis. Because this is not a common entity, it is our hope that this short review will serve to highlight the characteristics, treatment, and prognosis of pediatric endophthalmitis.

During the 11-year retrospective study period, 7 eyes were identified. Of these cases, open globe injuries were the most common etiology of endophthalmitis (3 of 7 eyes, 1 intraocular foreign body). This result is similar to those reported in the literature. Thordsen et al.1 collected data from 1995 to 2005 and their results revealed that 44% of endophthalmitis cases originated with open globe injuries (7 eyes, 3 intraocular foreign bodies). Weinstein et al.2 reported on findings from the 1970s and found that 86% of pediatric cases had traumatic endophthalmitis from open globe injuries (19 eyes, 5 intraocular foreign bodies). Endophthalmitis developed at a mean duration of 2 days after open globe repair in the current series.

The results of our series are summarized in Table 1. Most cases were exogenous. The initial treatment was pars plana vitrectomy with vitreous biopsy and intravitreal antibiotics. Vancomycin and ceftazidime were used intravitreally except in one patient with an allergy. All patients were treated with intravenous vancomycin and a third-generation cephalosporin. One eye had delayed closure of an open globe injury. Advanced infectious endophthalmitis was diagnosed at presentation in one eye, which necessitated primary enucleation.

When considering treatment of endophthalmitis in children, one must recognize the distinct microbiology of the condition. One of our postoperative cases had bleb-related endophthalmitis.

Table 1

<table>
<thead>
<tr>
<th>Patient Age/Sex</th>
<th>Ocular History</th>
<th>Etiology of Endophthalmitis</th>
<th>Lens Status</th>
<th>Presenting VA</th>
<th>Final VA</th>
<th>Surgical Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 y/F</td>
<td>Congenital glaucoma: goniotomy OU (5 m), trab/MMC OD at 5 y and OS at 4 y</td>
<td>Bleb related (Haemophilus influenzae)</td>
<td>Phakic</td>
<td>20/400</td>
<td>20/200</td>
<td>None; treated with topical and systemic antibiotics</td>
</tr>
<tr>
<td>9 y/F</td>
<td>Congenital glaucoma: goniotomy OU (5 m), trab/MMC OD at 5 y and OS at 4 y</td>
<td>Bleb related (Streptococcus epidermidis)</td>
<td>Phakic</td>
<td>CF</td>
<td>20/400</td>
<td>None; treated with topical and systemic antibiotics</td>
</tr>
<tr>
<td>2 y/F</td>
<td>None</td>
<td>Endogenous (culture negative)</td>
<td>Phakic</td>
<td>N/A</td>
<td>NLP</td>
<td>PPV and IVT inj</td>
</tr>
<tr>
<td>4 wk/M</td>
<td>None</td>
<td>Endogenous (group B Streptococcus sepsis)</td>
<td>Phakic</td>
<td>N/A</td>
<td>NLP</td>
<td>PPV and IVT inj</td>
</tr>
<tr>
<td>8 y/M</td>
<td>None</td>
<td>Trauma with IOFB (rock; Bacillus cereus)</td>
<td>Phakic</td>
<td>CF</td>
<td>NLP</td>
<td>PPV and IVT inj</td>
</tr>
<tr>
<td>16 y/F</td>
<td>Congenital cataract s/p extraction in both eyes at 3 y</td>
<td>Trauma with fist (culture negative)</td>
<td>Aphakic</td>
<td>NLP</td>
<td>Enucleated</td>
<td>Primary enucleation</td>
</tr>
<tr>
<td>2 y/F</td>
<td>Recent open globe repair</td>
<td>Trauma with cat scratch (culture negative)</td>
<td>Phakic</td>
<td>N/A</td>
<td>CF</td>
<td>IVT inj/corneal wound revision</td>
</tr>
</tbody>
</table>

VA = visual acuity; OU = both eyes; trab/MMC = trabeculectomy with mitomycin C; OD = right eye; OS = left eye; CF = counting fingers; N/A = not available due to age; NLP = no light perception; PPV = pars plana vitrectomy; IVT inj = intravitreal injection; IOFB = intraocular foreign body; s/p = status post
mitis due to *Haemophilus influenzae*. Despite a decreased prevalence since the advent of the *Haemophilus* vaccine, it remains a commonly encountered organism in pediatric endophthalmitis cases.\(^3\) In neonatal cases, consideration must be given to group B *Streptococcus* and Gram-negative enteric organisms.\(^4\)

The visual prognosis in pediatric endophthalmitis is poor, with most eyes having no residual functional vision. In our series, only 2 of 7 eyes (29%) had visual acuity of 20/400 or better. Both cases of endogenous endophthalmitis and two of three exogenous cases were left with no light perception vision. Furthermore, two of the eyes with no light perception vision were enucleated, and one received a scleral shell due to phthisis bulbi. Thordsen et al.\(^3\) reported similar results with 38% of patients attaining visual acuity of 20/400 or better. Trauma portends an even worse prognosis in children due to their greater risk of retinal detachment and subsequent development of proliferative vitreoretinopathy and amblyopia.

It is clear from our review that pediatric endophthalmitis is a serious condition that requires prompt diagnosis and treatment. Despite expeditious treatment, most patients experience profound vision loss.

REFERENCES


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The authors have no financial or proprietary interest in the materials presented herein.

doi:10.3928/01913913-20170703-07