INTRODUCTION

Acute ethmoiditis account for 21% of pediatric antibiotic prescriptions. The spread of this infection can lead to a subperiosteal orbital abscess (SPOA) which represents the most common orbital complication of sinusitis in children and requires active management.

The main objectives were (1) to assess the current bacteriology of drained SPOA in children referred in our center for acute ethmoiditis, and (2) to discuss the antibiotic use.

MATERIAL AND METHODS

Study design: retrospective study performed in a tertiary referral pediatric center from January 2009 to April 2017.

Inclusion criteria:
- children < 18 years old,
- clinical acute ethmoiditis,
- SPOA on the sinus CT-scan.

Exclusion criteria:
- chronic rhinosinusitis,
- intraorabital abscess on the CT-scan.

Surgery indications:
- abscess width >5mm or extended to the optic nerve,
- oculomotor disorder,
- absence of symptoms improvement after 48–72 h of intravenous antibiotics,
- severe clinical complications.

Surgery type:
- external approach,
- transnasal endoscopic approach,
- combined external and transnasal approach (mixed surgery).

Microbiologic cultures: obtained by samples of sinus secretions and pus from SPOA.

RESULTS

<table>
<thead>
<tr>
<th>Streptococcus spp</th>
<th>Staphylococcus spp</th>
<th>Haemophilus</th>
<th>Anarobic bacteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>milleri group</td>
<td>pneumoniæ</td>
<td>pyogenes</td>
<td>methicillin</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>sensitive S. aureus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>methicillin resistant S. aureus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>H. influenzae</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>prevotella</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>propioni bacterium spp</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>sterile culture</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>4</td>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>

Fig. 1. Evaluation and treatment of 129 children with acute ethmoiditis. The mean age of children with SPOA was 7 years (4 months-16 years).

Antibiotic treatment before, during, and after hospitalization:

- 3GC and metronidazole (76% children during 8.5 days)
- amoxicillin-clavulanate (76% children during 8.5 days)
- clindamycin and vancomycin (for 1 child during 10 days / MRSA)
- Other (because of allergy): (1) pristinamycine (2) clindamycin and metronidazole

CONCLUSION

In this study Streptococcus spp and Staphylococcus spp are the two main bacteria isolated in cases of subperiosteal abscess complicating acute ethmoiditis in children. Over the last five years, S. milleri are on the rise and can be virulent. The antibiotic therapy is initially probabilistic taking into account bacteria most often incriminated but also new emerging bacteria. It should be adapted as soon as possible to microbiological samples obtained after surgery.

CONTACT

Aurélie COUDERT
University Claude Bernard - Lyon Est
Hôpital Femme-Mère-Enfant – Lyon, FRANCE
Email: aurelie.coudert@chu-lyon.fr