Microbiology of Pediatric Head and Neck Abscesses

Abby C. Meyer MD,1,2 Tyler G. Kimbrough MD PhD,1,2
Marsha Finkelstein MS,1 James D. Sidman MD1,2

1Childrens Hospitals and Clinics of Minnesota-Minneapolis, Minnesota
2University of Minnesota Department of Otolaryngology-Head and Neck Surgery, Minneapolis, Minnesota

Abstract

Objective: To report the microbiology of pediatric head and neck abscesses.
Study Design: Case series
Methods: The records of a tertiary pediatric hospital were searched and all children with infections of the head and neck region between 2000 and 2007 were identified. Cases of peritonsillar abscess were excluded. Data regarding presentation, physical exam findings, radiographic findings, and treatment were extracted. All children who were diagnosed with abscesses and treated surgically were further identified, and the results of intraoperative cultures were reviewed.
Results: A total of 179 children with infections of the head and neck were treated between the years of 2000 and 2007 of which 57% (102 children) were diagnosed with abscesses. Seventy-one percent (72 children) with abscesses were treated surgically. Of 62 children with drainable abscesses, culture data was available for 54 children. A single organism was isolated in 24.1% of cultures, 2 organisms in 18.5% of cultures and 3 organisms in 16.7% of cultures. More than 3 organisms were identified in 38.9% of cultures. The most commonly isolated organisms included alpha-hemolytic streptococci (57.4%), group A streptococci (37.0%), anaerobes (29.6%), hemophilus (22.2%), neisseria (22.2%), and “respiratory flora” (20.4%). Other streptococcal species (14.8%), candida (14.8%), staphylococci (11.1%), stomatococci (11.1%) and other organisms (7.4%) were also identified. One culture showed no growth. No cases of methicillin-resistant staphylococcus aureus (MRSA) were encountered.
Conclusions: In our series, streptococci and anaerobic bacteria were the most commonly isolated organisms, and almost 40% of cultures identified greater than 3 different organisms. No cases of MRSA were encountered.

Methods and Materials

The records of a tertiary pediatric hospital were searched and all children with infections of the head and neck region, excluding peritonsillar infections, between 2000 and 2007 were identified. Data regarding presentation, physical exam findings, radiographic findings, and treatment were extracted. All children who were diagnosed with abscesses and treated surgically were further identified, and the results of intraoperative cultures were reviewed.

Results

Figure 1: Flow Chart of Cases of Infections of the Head and Neck

Figure 2: Number of Organisms per Culture

Figure 3: Organisms Cultured

Conclusions

In our series, almost 40% of cultures showed growth of greater than 3 different organisms. Similar to other reports in the literature,1-6 streptococci and anaerobic bacteria were the most commonly isolated organisms. However, unlike multiple other studies,1,6 there were no cases of methicillin-resistant staphylococcus aureus (MRSA). These results imply that MRSA does not play a significant role in pediatric deep neck infections and that organisms such as streptococci and anaerobes continue to be the causative infectious agents in the majority of these infections.

References