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Otolaryngology -- Head and Neck Surgery 2014 151: 179 originally published online 16 April 2014
DOI: 10.1177/0194599814531048

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>> Version of Record - Jun 23, 2014
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What is This?
Intranasal Drainage for Pediatric Nasal Abscesses

Jeffrey Cheng, MD1,2, and Lee P. Smith, MD1,2

Abstract
Nasal abscesses of the tip or soft tissues are uncommon in children. We describe an endonasal surgical approach for nasal abscesses based on our experience with 3 children at our tertiary care, academic children’s hospital. All presented with significant nasal pain out of proportion to the physical examination findings, along with edema, induration, and some intermittent bleeding and discharge of sebaceous and/or keratinous debris. Parenteral antibiotics were administered for an initial period of at least 24 hours in all cases, without any significant improvement in the patients’ symptoms. Computed tomography (CT) with intravenous contrast was diagnostic in all cases. Symptomatic relief was achieved immediately postoperatively. No child required a second drainage procedure, and all children had an uneventful recovery.

Keywords
pediatrics, nasal abscess, intranasal drainage

Methods
We describe our surgical technique for endonasal drainage of pediatric nasal abscesses based on our experience with 3 children. Our study was exempt from institutional review board approval.

Surgical Technique
In children, we recommend that the incision and drainage procedure be performed in the operating theater under general anesthesia. The patient is prepped and draped in the usual sterile fashion. A 2-prong skin hook is used to evert the alar rim. The region is palpated for an area of maximum fluctuance, and if possible, the incision is made to correspond with one of the conventional rhinoplasty incisions—marginal or intercartilaginous. If either of these areas cannot be determined, then the incision can be made over the area of maximum fluctuance. Care should be taken to ensure that the incision is not too close to the rim as that may result in cosmetic deformity. Figure 1 illustrates the exposure of the wound after the abscess cavity is opened, along with the corresponding conventional rhinoplasty incisions. A clamp is then used to bluntly dissect into the abscess cavity. A wound culture is then taken, and the wound is copiously irrigated with normal saline. We recommend packing the wound with quarter-inch gauze strip packing (with or without iodoform) and securing the external component to the child’s cheek with tape. Coating the packing strip with bacitracin ointment is helpful to prevent crusting and allows for easier removal. Packing can be removed early in the postoperative period, usually after the first day. Children should continue on appropriate intravenous or oral antimicrobial therapy and their clinical status closely monitored.

Results
A summary of our patient experience can be found in Table 1. The children were aged 3, 6, and 9 years and consisted of 2 boys and 1 girl. They all had significant nasal pain, edema, induration, and some intermittent bleeding and discharge.

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discharge of sebaceous and/or keratinous debris. They were all initially admitted for at least 24 hours of intravenous antibiotic therapy and upon clinical reassessment failed to symptomatically improve. Subsequently, imaging with CT of the paranasal sinuses with intravenous contrast was obtained in all children and demonstrated rim-enhancing abscess formation (Figure 2). All children were drained through our described intranasal approach. Their hospital stays were between 3 and 5 days. No postoperative complications were experienced, and all children had abscess cultures that grew methicillin-resistant *Staphylococcus aureus* (MRSA), sensitive to clindamycin. No recurrences or readmissions were encountered. No systemic or intracranial sequelae from the intranasal abscesses were seen. All 3 children had an excellent cosmetic result with no resultant deformity.

**Discussion**

Soft tissue abscesses of the nasal tip and/or envelope are not commonly encountered and have not been well documented or described in the English literature. We believe that a hallmark of this type of infection is severe nasal pain that is out of proportion to the physical examination findings. There is usually induration and erythema in the area, but fluctuance is difficult to ascertain, since the child may be too uncomfortable to allow for an involved physical examination of the nose. The pain may not be easily controlled with nonsteroidal anti-inflammatory medications or acetaminophen. Levels of pain should be routinely and regularly assessed and adequately controlled. Drainage of the abscess, through our described intranasal approach, usually results in immediate relief of the discomfort. The clinical and cosmetic outcomes are excellent. Our findings regarding microbiology suggest that community-acquired MRSA (CA-MRSA) may be common for these types of infections. All of our CA-MRSA microbiology susceptibilities included clindamycin, and consideration should be given for clindamycin as an empiric antibiotic of choice. This consideration should be taken with caution, since the prevalence of clindamycin-resistant CA-MRSA may be significant. Earley et al\(^4\) presented a series of 13 patients with nasal vestibular abscesses, of which all except 1 culture grew MRSA. Only seventy-five percent were clindamycin sensitive, but all were sensitive to other oral agents, including trimethoprim-sulfamethoxazole, tetracycline, and rifampin. Empiric treatment of these types of infections with trimethoprim-sulfamethoxazole, tetracycline, or rifampin should be based on discussion with infectious disease specialists and local microbiology susceptibility and resistance patterns, because these antibiotics do

**Table 1. Summary of Patients.**

<table>
<thead>
<tr>
<th>Patient No.</th>
<th>Age, y</th>
<th>Sex</th>
<th>Affected Side</th>
<th>Length of Hospital Stay, d</th>
<th>Microbiology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9</td>
<td>Male</td>
<td>Left</td>
<td>3</td>
<td>MRSA (clindamycin sensitive)</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>Female</td>
<td>Right</td>
<td>5</td>
<td>MRSA (clindamycin sensitive)</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Male</td>
<td>Left</td>
<td>3</td>
<td>MRSA (clindamycin sensitive)</td>
</tr>
</tbody>
</table>

Abbreviation: MRSA, methicillin-resistant *Staphylococcus aureus.*
not provide adequate coverage of other common microbiological organisms found in soft tissue skin infections.

**Conclusion**

Pediatric nasal abscesses are encountered infrequently. We believe that the hallmark is nasal pain out of proportion to the physical examination. Computed tomography with intravenous contrast is diagnostic. In contrast to small abscesses elsewhere in the head and neck, these may not be amenable to medical management. CA-MRSA is often encountered, and empiric antibiotic choice should include coverage of local susceptibility patterns to *S aureus*. We have described our intranasal approach, which provides resolution of symptoms and a good cosmetic outcome.

**Author Contributions**

**Jeffrey Cheng**, conception and design, drafting of work and critical revisions, final approval of manuscript, agree to be accountable for all aspects of the work; **Lee P. Smith**, conception and design, critical revisions, final approval of manuscript, agree to be accountable for all aspects of the work.

**Disclosures**

**Competing interests:** None.

**Sponsorships:** None.

**Funding source:** None.

**References**


