ORIGINAL ARTICLE

Peritonsillar Abscess in Early Childhood

Presentation and Management

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Objective: To highlight the modes of presentation and management of a peritonsillar abscess in children younger than 5 years.

Design: Retrospective case series.

Setting: Tertiary referral pediatric otolaryngology practice.

Patients: Seven children younger than 5 years.

Results: The mean age of the children studied was 27 months (age range, 7-41 months). Five (71%) of the 7 patients underwent computed tomographic scanning to confirm the diagnosis. Pus was cultured at surgery in every case. The most common organism detected was *Streptococcus viridans*. The average hospital stay was 72 hours (range, 22 hours to 12 days). After diagnosis of an abscess, all patients underwent an electrocautery tonsillectomy and had an uneventful recovery.

Conclusions: Children younger than 5 years who present with poor oral intake, high fever, drooling, and trismus should be suspected of having a peritonsillar abscess. A computed tomographic scan of the neck is usually required to confirm a suspected diagnosis. Prompt diagnosis and treatment will lead to a considerable decrease in morbidity. Immediate tonsillectomy is a safe and effective means of abscess drainage.

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PERITONSILLAR abscess (PTA) is the most common deep neck space infection treated by otolaryngologists.[1] Patients with a PTA usually present with a sore throat, fever, dysphagia, and trismus. A unilateral tonsillar bulge, along with displacement of the uvula to the opposite side, suggests the diagnosis.[2] The treatment of a PTA involves surgical drainage by needle aspiration, cold knife incision, or immediate tonsillectomy. Needle aspiration has gained support as the initial procedure of choice because it is effective and convenient and avoids costly inpatient treatment.[3] However, this procedure is unlikely to be effective in a sick, uncooperative child.

Reports to date about the diagnosis and treatment of PTAs have been confined to the older child or adult.[4-11] The treatment of children younger than 5 years differs in certain aspects. It is extremely difficult to perform an adequate oropharyngeal examination in a sick, febrile child with trismus, and one may have to rely on early radiological imaging to confirm the diagnosis and to prevent morbidity. Needle aspiration and bedside incision and drainage are unlikely to be successful and may lead to aspiration of blood and pus into a relatively smaller airway.[2] The drainage of PTAs in very young children is therefore optimally achieved by a tonsillectomy with the patient under general anesthesia. We describe the clinical manifestations and treatment of 7 children younger than 5 years with a PTA. Three of the more challenging cases have been highlighted.

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RESULTS

Seven patients younger than 5 years (age range, 7-41 months; mean, 27 months) were included in the study. All children presented with an elevated white blood cell count (mean, 27.2×10^9/L; range, $11.8\text{-}41.4\times10^9$/L), elevated temperature, (mean, 38.9°C; range, 38.0°C-40.4°C), poor oral intake, drooling, and trismus. None of the children had a history or clinical finding that was suggestive of an immunocompromised state. Two of the 7 children were serologically tested for infectious mononucleosis, with negative results.

PATIENTS AND METHODS

We reviewed the medical records of children younger than 5 years with a diagnosis of PTA at Le Bonheur Children's Medical Center, Memphis, Tenn. Seven previously healthy patients were treated from July 1991 to June 1996. Charts were reviewed to determine the presenting symptoms and signs, laboratory data, and radiological studies. The time from admission to surgical intervention and from surgery to discharge were also noted. Intravenous cefuroxime sodium was the antibiotic used in all patients during their stay in the hospital. After diagnosis of an abscess, all patients underwent an electrocautery tonsillectomy, and cultures were obtained. They were discharged on a regimen of oral cefuroxime axetil, which was continued for 10 days.

Five (71%) of the 7 patients underwent computed tomography to confirm the diagnosis (**Figure 1** and **Figure 2**). Pus was cultured at surgery in every case. The most common organism found was *Streptococcus viridans* (80%). Other organisms included *Streptococcus pyogenes*, *Escherichia coli*, and group A streptococcus. The mean time from admission to surgical treatment was 14 hours (range, 0.5-41 hours). The average hospital stay was 72 hours (range, 22 hours to 12 days). Two patients who presented with respiratory distress on admission were hospitalized for a mean of 10 days (range, 8-12 days). Three patients were discharged home within 24 hours of surgery, and 2 were hospitalized for a mean of 46 hours (range, 30-62 hours) because of poor oral intake. Three cases are presented below to highlight issues pertinent to this study.

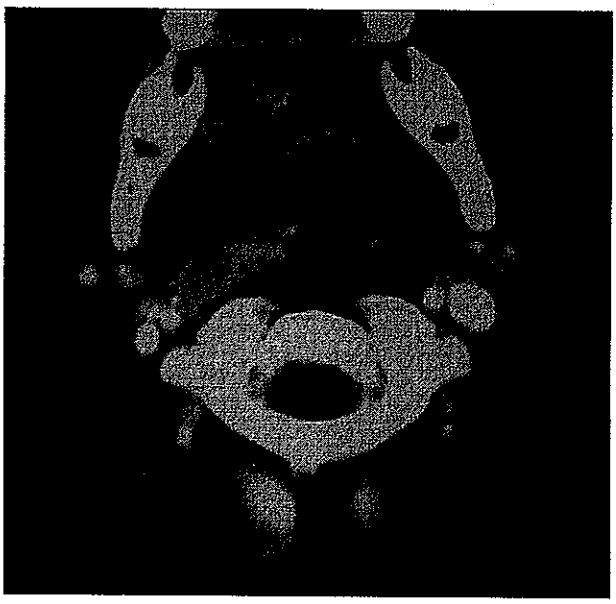

Figure 1. *Computed tomographic scan of oropharyngeal soft tissue showing a large right peritonsillar abscess.*

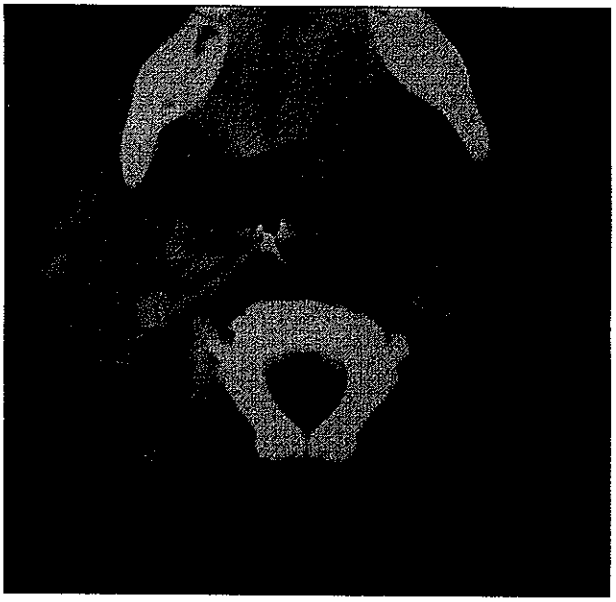

Figure 2. *Computed tomographic scan demonstrating a left peritonsillar abscess with gross edema of the soft tissue compromising the oropharyngeal airway.*

REPORT OF CASES

CASE 1

A 7-month-old female presented to the emergency department with a 1-week history of low-grade fever, poor oral intake, and drooling (Figure 1). Physical examination revealed large, inflamed tonsils and left submandibular lymphadenitis. The patient developed a high fever, despite intravenous cefuroxime therapy. The oropharyngeal examination was now limited by marked trismus. A computed tomographic scan demonstrated a 1.5×2-cm, oval, low-density collection in the left peritonsillar space. An emergency tonsillectomy and drainage of a PTA was performed, and the patient was discharged home within 24 hours.

CASE 2

A 2-year-old male presented with a 5-day history of fever, poor oral intake, and shortness of breath. On examination, he had mild stridor and bilateral enlarged lymph nodes. Oropharyngeal examination was impossible because of marked trismus. Despite intravenous antibiotic and anti-inflammatory therapy, the patient developed severe respiratory distress and required an emergency tracheostomy after unsuccessful endotracheal intubation. A computed tomographic scan demonstrated bilateral cervical adenopathy, widening of the prevertebral soft tissue space, and a 2-cm abscess in the right tonsillar space. Examination with the patient under anesthesia revealed an avulsed right tonsil with pus in the oropharynx and hypopharynx. An immediate tonsillectomy was performed, and the patient was treated in the intensive care unit for 4 days. He was decannu-

lated on day 6 and sent home after 8 days. He had an uneventful recovery.

CASE 3

An 11-month-old male presented with an acute onset of high fever, drooling, and stridor. Acute epiglottitis was suspected, and the patient was intubated in the emergency department. A diffuse retropharyngeal bulge was noted at the time of intubation. Computed tomograms showed a 3-cm mass in the left peritonsillar region, with severe narrowing of the airway to the right (Figure 2). The patient underwent an abscess tonsillectomy. He was extubated on day 3. Postoperatively, he developed mild stridor, which responded satisfactorily to intravenous dexamethasone sodium phosphate. He was discharged on day 12.

COMMENT

Peritonsillar abscess is the most common site of deep space infections in the head and neck. The potential complications of untreated peritonsillar abscesses include poor oral intake leading to dehydration, pneumonitis caused by spontaneous rupture of the abscess, and extension of the abscess to other deep neck spaces, with possible spread to the mediastinum or skull base.[1] Early diagnosis and treatment of a PTA in the younger child is of particular importance, as respiratory compromise can occur at an earlier stage because of the relatively smaller and more vulnerable pediatric airway.

The diagnosis of a PTA in children younger than 5 years is a clinical challenge. Peritonsillar abscesses are generally uncommon in this age group, and the diagnosis may not be entertained until complications supervene.[6-9] It is important to note that the youngest child with a PTA in the present study was 7 months old, and 4 children were younger than 3 years. Also, only a limited examination of the oropharynx may be possible in a sick child with PTA. Brodsky et al[2] found that, in children with a PTA, the mean incisor-to-incisor distance was less than 25 mm, making a complete examination of the oropharynx unlikely. In children younger than 5 years with a suspected PTA, an early computed tomographic scan of the oropharyngeal and neck soft tissues may be necessary to establish a diagnosis. This radiological examination is invaluable in a sick child with dysphagia and trismus in whom a detailed oropharyngeal examination either is not possible or is nonlocalizing.

The optimal treatment of a young child with a clinical or radiological diagnosis of PTA is surgical drainage via an immediate tonsillectomy. Weinberg et al[7] advocated needle aspiration as the initial treatment of children with PTAs, although the mean age of the patients in the group studied was 13.9 years. We consider needle aspiration in a sick, irritable young child as unsafe, with a low probability of being effective or practical. In this study, all children underwent immediate tonsillectomy, with a low postoperative morbidity and no surgical complications.

The length of hospitalization in this series was related to whether patients had respiratory compromise before surgery. Five patients had no respiratory problems and were discharged home within 72 hours of admission. The 2 patients with respiratory distress on presentation had considerably higher morbidity and an average hospital stay of 10 days, with 1 patient requiring an emergency tracheostomy. This highlights the importance of prompt diagnosis and treatment of a young child with a PTA.

The retrospective nature of this study and the small number of patients preclude a comparative analysis of other treatment modalities. The uncommon occurrence of PTA in very young children would limit even prospective studies owing to inadequate numbers. As documented in this study, the morbidity of a PTA in a young child is not only due to the suppurative process, but also to its local effects of inflammation and edema. Hence, it is prudent to perform a surgical procedure that not only drains the abscess, but also eliminates the source of infection and simultaneously improves the airway.

In conclusion, children younger than 5 years who present with poor oral intake, high fever, and an elevated white blood cell count should be suspected of having a PTA. Oropharyngeal examination is almost impossible, and a computed tomographic scan of the neck may be required to confirm a suspected diagnosis of PTA or to rule out a parapharyngeal or retropharyngeal abscess. Prompt diagnosis and surgical treatment will lead to a considerable decrease in morbidity. Immediate tonsillectomy is a safe and effective means of abscess drainage.

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