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What You Need To Know: Tonsillitis - Medical and Surgical Therapy

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INTRODUCTION

Tonsillitis is a relatively common disease in Singapore, as in the rest of the world. Tonsillitis may be described as an acute infection of the lymphoepithelial tissue of the palatine tonsils. The symptoms most commonly associated with tonsillitis are fever, usually greater than 38°C, persistent pain in the oropharynx and pain on swallowing. Associated with this the patient may experience headaches, malaise, malodorus breath and swollen tender cervical lymphadenopathy. On examination the patient will have erythema of the tonsils and tonsillar pillars with exudate in the crypts of the tonsils or in severe cases an exudative membrane on the surface. There may be oedema and swelling of the uvula and surrounding pharynx and base of tongue. There may or may not be palpable lymphadenopathy.

Etiology

The etiology of tonsillitis is varied and may be bacterial, most commonly *Streptococcus*, or viral, which may be due to things like the Coxsackie virus, adenovirus, rhinovirus or Epstein-Barr virus (infectious mononucleosis). The problem is distinguishing viral infections from bacterial infections in choosing treatment options. To further complicate the decision, it is possible for a viral infection to pave the way for a secondary bacterial infection and normal flora of the oropharyngeal mucous membrane may under some circumstances, become pathogenic. The purist would say we should only treat true Group A β-haemolytic *Streptococcal* (GABHS) infections with antibiotics and let all other infections run their course. However, we all have anecdotal experience with patients who appear to have a bacterial tonsillitis, but do not culture GABHS. They are febrile, have a severe sorethroat with cervical lymphadenopathy and when treated with penicillin, are much improved in 24 - 72 hours. So, when and why should we treat tonsillitis?

Viral tonsillitis

It is not easy to distinguish viral from bacterial infections. In general, I use the following distinguishing factors although I cannot prove they are scientifically valid. If a patient has a generalised sorethroat, associated with symptoms of an upper respiratory infection such as rhinorrhea, cough, low grade fever, minimal or no cervical adenopathy and no purulent exudate on the tonsils, I feel this is probably viral and will not treat with antibiotics, but use supportive therapy like nasal decongestants, gargles and plenty of oral fluids. If the patient has small vesicles or erosions on the soft palate and/or mucosal surfaces, I am even more convinced of a viral infection. The one viral infection that will present almost identical to bacterial tonsillitis is infectious mononucleosis. These patients may have a fever, cervical lymphadenopathy and exudative tonsillitis. As a consequence, they usually are treated with an antibiotic and the diagnosis is suspected 3 - 5 days later when they do not respond to antibiotics or develop a rash associated with the use of amoxicillin. In these patients, the diagnosis would be confirmed with a monospot test.

Bacterial tonsillitis treatment: When and how

Once we have decided that the patient fits into the bacterial tonsillitis category, which ones should we treat and why?

In the pre-antibiotic era, the complications of *streptococcal* tonsillitis were frequent and devastating. Even as late as the mid 1950's, when I was a University student and had to be hospitalised for 3 days with scarlet fever, the police came to my residence to quarantine the household for 2 weeks to try to prevent the spread of the disease. The feared complications were rheumatic fever with joint and heart involvement and glomerulonephritis. In this age of antibiotics when we rarely see these complications, we have become blase about treatment. As already mentioned, the purist would treat only GABHS infections. In the 60's and 70's this led to the practice of doing a culture, starting the patient on penicillin and then stopping after 24 - 48 hours if the GABHS culture was negative. Over the past 10 years, a rapid strep test has become available and GABHS may be ruled in or out in 30 minutes, to make a treatment decision. The problem for me was that a 10-day prescription of penicillin was less expensive then a culture or even the rapid strep test. Plus, I felt there were still patients with all the signs and symptoms of bacterial tonsillitis who were GABHS negative, but still quite sick and would respond quickly to penicillin with the ability to return to school or work much sooner. As a consequence, I chose to treat these patients with a 10-day course of antibiotics rather than to do a culture.

What antibiotic should we use and for how long? Since coming to Singapore, I have observed that it is a common practice to treat tonsillitis with 3 - 5 days of penicillin or amoxicillin and then ask the patient

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to return if they are not better. This came to my attention when I saw a 22-year-old girl who was referred for a tonsillectomy. On a casual history, she stated she had 10 - 15 attacks of tonsillitis treated with antibiotics over a one year period. This would meet almost anyone's criteria for doing a tonsillectomy, but on more careful questioning, she had only taken 2 -5 days of antibiotics each time and the tonsillitis would recurr in 2 - 3 weeks. There are two problems with this short course therapy. First, it does not protect one from the risks of cardiac and renal complications from GABHS. At present, the American Heart Association and the American Academy of Pediatrics recommend a 10-day course of penicillin V or a single dose of intramuscular Benzathine penicillin G[1]. If the patient is penicillin allergic, a 10-day course of erythromycin or Cephalosporins are recommended. Stromberg et al[2] showed in a randomised controlled clinical trial, that 10 days of penicillin had a 9% recurrence rate of tonsillitis within one week versus 30% with 5 days of therapy. The second reason for not using short but frequent course of antibiotics is the rapidly developing problem of drug-resistant bacteria. Although at present *Streptococcus* pyogenes has not been a problem, it is becoming a major problem with *Streptococcus* pneumoniae. It is known that low doses and frequent exposures to antibiotics is the ideal media for selecting out resistant organisms.

Finally, in patients with frequent recurrent tonsillitis after adequate courses of antibiotics, one needs to keep in mind the possibility of anaerobic bacteria as a source. Brook et al[3] showed that if one took tonsils at the time of tonsillectomy for chronic recurrent tonsillitis and did sterile core cultures from the center of the tonsil, a mixed flora of aerobes and anaerobes were often found. With this in mind, I frequently recommend a 10 -14 day course of clindamycin for patients with chronic recurrent tonsillitis before considering a tonsillectomy.

When is tonsillectomy indicated?

What are the indications for a tonsillectomy? At the present time, the American Academy of Otolaryngology gives the following guidelines[4]: 1) At least 3 or more episodes of tonsillitis per year despite adequate medical therapy. Each episode must have been characterised by one or more of the following: a) oral temperature >38.2°C; b) enlarged (> 2 cm) or tender anterior cervical lymph nodes; c) tonsillar exudate; d) positive culture for GABHS; 2) Hypertrophy causing dental malocclusion or adversely affecting oro-facial growth documented by orthodontist; 3) Hypertrophy causing upper airway obstruction, severe dysphagia, sleep disorders, or cardiopulmonary complications; 4) Peritonsillar abscess unresponsive to medical management and drainage documented by surgeon; 5) Chronic or recurrent tonsillitis associated with the streptococcal carrier state and not responding to beta-lactamase resistant antibiotics, and 6) Unilateral tonsil hypertrophy presumed neoplastic.

CONCLUSION

In conclusion, although tonsillitis is a common infection today, the exact etiology may be difficult to determine. When to treat remains controversial, but if one does decide to use antibiotics, the patient should be encouraged to complete a 10-day course of the appropriate antibiotics to minimise recurrence and prevent the complications of GABHS. In patients who meet the criteria of recurrent or chronic tonsillitis, a tonsillectomy would be recommended.

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