

> THE PATIENT
35-year-old-woman

> THE CLINICAL QUESTION
Is tonsillectomy an appropriate treatment modality for this adult patient's refractory group A β -hemolytic streptococcal pharyngitis, in light of her history of recurrent infections?

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> THE CASE

A 35-year-old woman sought care for a fever and sore throat that she'd had for 4 days. She denied symptoms of cough, rhinorrhea, or sputum production.

The patient's medical history included severe recurrent streptococcal pharyngitis as a child and teenager. At the age of 17, she developed a fever of 105° F with associated delirium, dysphagia, nausea, and vomiting, and missed several days of school. She also lost 82 pounds, developed oral thrush, and continued to feel fatigued for approximately a year. After her primary care physician noted a heart murmur on physical exam, she was sent for echocardiography and diagnosed with rheumatic fever secondary to streptococcal pharyngitis.

Eighteen years (and numerous streptococcal infections) later, the patient was at our facility and we were ordering a rapid antigen detection test (RADT) for her current illness. The throat specimen was positive for group A β -hemolytic *streptococcus* (GAS). The patient's 8-year-old daughter also had a sore throat, fever, and positive RADT; her symptoms resolved with oral amoxicillin for 10 days. The patient's husband was also treated successfully with oral amoxicillin/clavulanate for 10 days for similar symptoms. The patient herself, however, was unsuccessfully treated with oral amoxicillin 500 mg twice daily for 7 days.

She was then given oral amoxicillin/clavulanate 875 mg twice daily for 14 days, but received no relief. Even after receiving clindamycin 600 mg twice daily for 10 days, she had minimal relief and remained positive for GAS on repeat RADT. It was at this point that tonsillectomy was considered as a possible treatment modality for her refractory GAS pharyngitis.

■ **The patient consented** to the procedure and underwent a tonsillectomy. She has remained asymptomatic for 2 years and there have been no reported outbreaks of GAS infection in her household.

DISCUSSION

Streptococcal pharyngitis is an infection of the oropharynx and/or nasopharynx that is caused by *Streptococcus pyogenes* (also known as GAS). It is one of the most frequent illnesses encountered by primary care physicians, and primarily occurs in children ages 5 to 15 years.^{1,2} The signs and symptoms of GAS pharyngitis include an abrupt onset of a sore throat, tonsillar exudate, tender cervical adenopathy, and fever. (The classic presentation of GAS pharyngitis in a different patient can be seen in the **FIGURE**.)

■ **Throat cultures** are the gold standard for the diagnosis of GAS pharyngitis, but results take 24 to 48 hours, which can delay appropriate treatment. Therefore, the use of the RADT is often preferred clinically.¹ RADT is not recommended for children and adults who show clinical symptoms that are highly suggestive of a viral illness, such as cough, rhinorrhea, hoarseness, or oral ulcers. A negative RADT in children and adolescents necessitates a throat culture to confirm the diagnosis.²

■ **The antibiotics of choice** are either penicillin 50 mg/kg/d in 4 divided doses or amoxicillin 40 mg/kg/d in 3 divided doses (maximum for both is 2000 mg/d) for 10 days. Options for patients with penicillin allergies include clindamycin or clarithromycin for 10 days or azithromycin for 5 days.²

The Infectious Diseases Society of America (IDSA) does not recommend routine testing or empiric treatment of asymptomatic carriers. However, it does recommend treatment of GAS carriers in certain situations, such as when:²

- the carrier has acute rheumatic fever
- there is a family or personal history of acute rheumatic fever
- there is a post-streptococcal glomerulonephritis outbreak
- a family has excessive anxiety about GAS infections
- a tonsillectomy is being considered.

When—and for whom—is tonsillectomy beneficial?

Tonsillectomy is a treatment option for patients with recurrent episodes of GAS pharyngitis. Indications include patients with 7 GAS infections in a year, 5 episodes in 2 years, or 3 episodes in 3 years.^{3,4} In select patient populations, tonsillectomy has been shown to decrease missed work days and medical expenses caused by recurrent pharyngitis.^{5,6}

Alho et al demonstrated that adults with recurrent episodes of GAS pharyngitis benefit from tonsillectomy in terms of fewer repeat infections and more days without throat pain.⁷ A randomized controlled trial conducted by Koskenkorva et al found that the overall rates of pharyngitis, throat pain, rhinitis, and cough were significantly lower in adults who received a tonsillectomy vs those who did not.⁵ Still, whether tonsillectomy is worthwhile in adults is debatable; Burton et al found no evidence that tonsillectomy is effective for chronic or recurrent acute tonsillitis in adults.⁸

Overall meta-analysis results indicate that tonsillectomy results in a 43% reduction in the incidence of pharyngitis in children between the ages of 4 and 16.^{8,9} One study

FIGURE

GAS pharyngitis: What you'll see



The classic presentation of group A β -hemolytic streptococcus pharyngitis includes erythematous mucosa with large tonsils covered with white exudate.

found that children without tonsillectomy were 3.1 times more likely to develop subsequent GAS pharyngitis than children who underwent tonsillectomy.⁹ Another study found that children who received tonsillectomy demonstrated a decrease in sore throat episodes by 1.2 episodes per year and a decrease in school absenteeism by 2.8 days per year.⁶ Tonsillectomy does carry a risk of intraoperative and postoperative bleeding in children and adults, which may make it a less desirable option for some patients.⁶

THE TAKEAWAY

Recurrent GAS pharyngitis poses a significant challenge for clinicians. When episodes recur, it may be prudent to treat asymptomatic carriers in the patient's household. Tonsillectomy should be considered in refractory cases since recurrent GAS pharyngitis directly impacts the wellness and productivity of patients. Our patient certainly benefited from the surgery: She has not missed any work

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➤ **Our patient has not missed work or visited her primary care physician because of a GAS infection since her tonsillectomy.**

days or had to visit her primary care physician because of a GAS infection since her tonsillectomy. **JFP**

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