

Tonsillectomy is a procedure that can be a source of both anxiety and relief for families with children suffering from recurrent tonsillitis, tonsillar hypertrophy, obstructive sleep disordered breathing (oSDB), and other tonsil-related medical conditions.

The term “tonsil” is typically used to refer to the palatine tonsils, collections of extranodal lymphoid tissue that exist on each side of the pharynx (throat). The palatine tonsils have never been shown to serve a useful or beneficial purpose despite multiple research studies investigating this issue.<sup>1</sup>

Tonsillectomy is a surgical procedure performed to remove tonsils. It has been one of the most common surgical procedures in the United States for children less than 15 years old.<sup>3,4,5</sup> The most common reasons for tonsillectomy in children are recurrent throat infections (recurrent acute tonsillitis) and oSDB.<sup>2,5,6,7</sup>

The 2019 American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) Clinical Practice Guidelines: Tonsillectomy in Children (Update) allow for consideration of tonsillectomy in cases of thoroughly documented recurrent throat infections (recurrent acute tonsillitis) -- at least seven times per year for one year, five times per year for two years or three times per year for three years.<sup>2</sup>

The guidelines recommend that throat infections that occur less frequently be managed with watchful waiting and oral antibiotics from primary care providers (PCPs). The rationale behind these seemingly stringent criteria is that studies have failed to demonstrate a benefit from tonsillectomy in children with less frequent throat infections (recurrent acute tonsillitis).<sup>8,9,10</sup>

The 2019 AAO-HNS do allow for tonsillectomy to be considered for children who do not meet the frequency criteria, but have other “modifying factors,”<sup>2</sup> such as more than one peritonsillar abscess; PFAPA (a condition involving periodic fever, aphthous stomatitis, pharyngitis and adenitis) and multiple antibiotic allergies or intolerances.<sup>2</sup>

Recurrent acute tonsillitis has been decreasing as an indication for tonsillectomy since the 1970s, while oSDB and obstructive sleep apnea (OSA) have been increasing as reasons for the procedure.<sup>5,6,7</sup>

Obstructive sleep disordered breathing can include a spectrum of conditions that range from isolated snoring to OSA. The diagnosis of OSA requires a polysomnogram (sleep study), but the diagnosis of oSDB can be made on a clinical basis (signs and symptoms) alone. Additional symptoms associated with oSDB include daytime tiredness, fatigue, excessive sleepiness, hyperactivity, reduced concentration, inattention, poor school performance and behavioral problems. Conditions including growth retardation, enuresis (bed wetting) and asthma also may be worsened or caused by oSDB.

A sleep study can be used to diagnose OSA. The 2019 AAO-HNS guidelines recommend a sleep study prior to tonsillectomy consideration for children less than 2 years of age and children with obesity, Down syndrome, craniofacial abnormalities, neuromuscular disorders, sickle cell disease or mucopolysaccharidoses.<sup>2</sup> The guidelines further recommend a sleep study when the need for/expected benefit from tonsillectomy is uncertain or when there is “discordance between the physical examination and the reported severity” of the oSDB.<sup>2</sup> It also is reasonable to order a sleep study if the family wants this additional, more objective information prior to making a decision to undertake a tonsillectomy.

Tonsillectomy is known to be a simple and straightforward surgery that almost no ear, nose and throat surgeon has difficulty performing. However, tonsillectomy also has a comparatively high rate of complications. The most common serious complication of tonsillectomy is bleeding. Primary bleeding (within one day of the procedure) has been reported to range from 0.2 to 2.2% of the time.<sup>11</sup> Secondary bleeding (occurring greater than one day after the procedure) has been reported to occur from 0.1 to 3% of the time.<sup>11</sup>

It is also possible that a tonsillectomy procedure could be performed without the child receiving the expected benefits. Not all OSDB and OSA symptoms will respond to tonsillectomy. Recurrent throat infections also may still occur despite removal of the tonsils. It is important to have realistic expectations when considering tonsillectomy and an understanding that desired results are not always received with this or any other surgery.

For families interested in exploring the option of tonsillectomy, an excellent first step is finding an ear, nose and throat surgeon who they trust and who listens to their concerns and goals. With the exception of a few rare conditions, there is almost never a need to rush into a decision regarding tonsillectomy.

1) Brandtzaeg, P . Immune function of the nasopharyngeal tissue. *Adv Otorhinolaryngol.* 2011;72:20-24.

2) Mitchell, RB, et. al. Clinical Practice Guideline: Tonsillectomy in Children (Update). *Otolaryngology – Head and Neck Surgery.* 2019; 160: S1-S42

3) Cullen, KA, Hall, MJ, Golosinskiy, A. Ambulatory surgery in the United States, 2006. Revised. Hyattsville, MD: National Center for Health Statistics; 2009. National health statistics report 11

4) Hall, MJ, Schwartzman, A, Zhang, J, Liu, X. Ambulatory surgery data from hospitals and ambulatory surgery centers: United States, 2010. *Natl Health Stat Report.* 2017;(102):1-15.

5) Derkay, CS . Pediatric otolaryngology procedures in the United States: 1977-1987. *Int J Pediatr Otorhinolaryngol.* 1993;25:1-12.

6) Parker, NP, Walner, DL. Trends in the indications for pediatric tonsillectomy or adenotonsillectomy. *Int J Pediatr Otorhinolaryngol.* 2011;75:282-285.

7) Rosenfeld, RM, Green, RP. Tonsillectomy and adenoidectomy: changing trends. *Ann Otol Rhinol Laryngol.* 1990;99:187-191.

8) Francis, DO, Chinnadurai, S, Sathe, N. Tonsillectomy for Obstructive Sleep-Disordered Breathing or Recurrent Throat Infection in Children. Rockville, MD: Agency for Healthcare Research and Quality; 2017. AHRQ comparative effectiveness review 16(17)-EHC042-EF

9) Morad, A, Sathe, NA, Francis, D. Tonsillectomy versus watchful waiting for recurrent throat infection: a systematic review. *Pediatrics.* 2017;139:e20163490.

10) Burton, MJ, Galsziou, PP, Chong, LY, Venekamp, RP. Tonsillectomy or adenotonsillectomy versus non-surgical treatment for chronic/recurrent acute tonsillitis (review). Cochrane Database Syst Rev. 2014;(11):CD001802.

11) Windfuhr, JP, Chen, YS, Remmert, S. Hemorrhage following tonsillectomy and adenoidectomy in 15,218 patients. Otolaryngol Head Neck Surg. 2006;132:281-286.