POEMs

Early Adenotonsillectomy and Watchful Waiting Are Both Options for Children with Sleep Apnea

Clinical Question

Does adenotonsillectomy improve outcomes in children with obstructive sleep apnea?

Bottom Line

Early surgery provides some symptomatic benefit and greater normalization of polysomnographic findings (a disease-oriented outcome) than watchful waiting for children with obstructive sleep apnea. However, many of the children in the watchful waiting group improved during the study period, and there were no cognitive or behavioral consequences to watchful waiting. Thus, either approach is a reasonable option. (Level of Evidence = 1b)

Synopsis

More than 500,000 children in the United States get their tonsils and adenoids removed each year, with the most common indication being obstructive sleep apnea. This multicenter trial included children five to nine years of age, with an apnea-hypopnea index score of two or more events per hour or an obstructive apnea index score of at least one event per hour. The authors excluded children who had severe obstructive sleep apnea, characterized by an apnea-hypopnea index score greater than 30 events per hour, an obstructive apnea index score greater than 20 events per hour, or an oxygen saturation of less than 90% for 2% or more of sleep time. Children with significant obesity (the top 0.13% of body mass index for their age), those taking medications for attention-deficit/hyperactivity disorder, and those with recurrent tonsillitis were also excluded. The authors recruited a total of 464 children—who were randomized to receive adenotonsillectomy within four weeks (early surgery group) or watchful waiting—and followed up with them for seven months. Sixteen children in each group did not receive the assigned treatment. There were 30 patients lost to follow-up or who withdrew from the early surgery group and 23 in the watchful waiting group.

Groups were similar at the beginning of the study: approximately one-half of the children were girls, slightly less than one-half were obese or overweight, and slightly more than one-half were black. The outcomes were mixed. The primary outcome of measures of attention and executive function by masked outcome assessors showed no significant difference between groups. Unmasked assessment of behavior by parents using the Conners scale for attention-deficit/hyperactivity disorder found greater improvement in the early surgery group, as did the parental assessment of executive function and behavior. Unmasked assessment of symptoms and quality of life showed slightly greater improvement in the early surgery group. Polysomnographic abnormalities improved more in the early surgery group (from 4.8 to 1.3 per hour in the early surgery group and from 4.5 to 2.9 per hour in the watchful waiting group). However, it is important to note that these differences were small and did not meet the usual cutoff for a clinically important difference. In general, a "clinically important difference" requires a change of at least 10% to 15% on a rating scale, and the above improvements were closer to a 5% difference between groups on the scale.

Study Information

Study design: Randomized controlled trial (single-blinded)

Funding source: Government

Allocation: Concealed

Setting: Outpatient (specialty)

Reference: *Marcus CL, Moore RH, Rosen CL, et al.; Childhood Adenotonsillectomy Trial (CHAT). A randomized trial of adenotonsillectomy for childhood sleep apnea.* N Engl J Med. *2013; 368(25):2366-2376.*

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