MedicalXpress

Surgery improves quality of life for children with sleep apnea

February 12 2008

For children who suffer from obstructive sleep apnea (OSA), a tonsillectomy and adenoidectomy can provide dramatic relief and is successful in solving sleep problems for 80 to 90 percent of children, a Saint Louis University study found.

The study is the largest to date that looks at how children with varying severities of OSA fare before and after they have surgery, using both preoperative and postoperative sleep studies. The study also looked at potential factors such as age and ethnicity that could affect the diagnosis of OSA and impact of the surgery.

Children who suffer from OSA stop breathing periodically throughout the night and snore very loudly. In normal weight children, the condition is caused by enlargement of the tonsils and adenoids that aggravate upper airway collapse during sleep, which disrupts normal breathing.

“Obstructive sleep apnea has a considerable impact on children’s quality of life, similar to chronic asthma or rheumatoid arthritis” says Ron Mitchell, M.D., professor of pediatric otolaryngology at Saint Louis University and the study’s author. “Our study has shown that surgery can have a profound positive effect on children’s lives.”

OSA affects boys and girls equally. Approximately 2 to 4 percent of children ages 4 to 6 years old have OSA, although Mitchell suspects the number is probably actually higher because parents don’t recognize or tell doctors about the problem.

All 79 children in the study showed significant improvement after the surgery, although some children had persistent OSA. The study found that the success of the surgery was directly related the preoperative severity of OSA.

The study defined resolution of OSA as experiencing less than five incidents of interrupted breathing throughout the course of a night. OSA was resolved in all children with mild preoperative OSA (five to nine incidents per night). For children with moderate preoperative OSA (10-19 incidents per night), 88 percent experienced resolution, while 64 percent of children with severe preoperative OSA (20 incidents or more) experienced resolution.

“The results of the surgery were dramatic, even for children who had persistent OSA,” Mitchell says. “To go from having 40 or more incidents of interrupted breathing in a night to having only five or six – that is a pretty remarkable improvement in their sleep that leads to a dramatic improvement in quality of life.”

Because they do not sleep soundly, OSA can negatively affect children’s behavior, health, growth, attention, memory and classroom performance. OSA has also been linked to lower childhood IQ scores.

“Not all children with sleep problems have behavioral issues before surgery, and not all behavioral problems resolve post-surgery,” Dr. Mitchell emphasized. “Children who score way outside normal parameters on behavioral measures benefit the most from surgery.”

Obstructive sleep apnea has become a better recognized problem among children in recent years, Mitchell says. The sleep center at SSM Cardinal Glennon Children’s Medical Center, which is one of the largest sleep center dedicated exclusively for children in St. Louis, conducts approximately 600 sleep studies per year.

A sleep study monitors many body functions including brain, eye movements, muscle activity, heart rhythm and breathing during sleep. A sleep study is the only way to objectively measure OSA and is recommended by both the American Academy of Pediatrics and the American Thoracic Society prior to conducting a surgical procedure.

Michell's research confirmed the need for preoperative sleep studies in selected children. Caregiver reports of symptoms they observed, such as snoring and restless sleep, did not correlate to the severity of OSA. In fact, the study found that only large tonsil size was related to the preoperative severity of OSA.

Mitchell's research also showed the importance of postoperative follow up, especially for children who had severe OSA.

"Even though OSA resolved in the overwhelming majority of children after the surgery, it is still crucial to identify and treat children with persistent OSA," Mitchell says. "Otherwise these children will continue to experience the health, behavioral and learning problems associated with OSA."

Several options for treating persistent OSA exist, including: nasal steroids, allergy treatment, additional surgery or continuous positive airway pressure (CPAP) mask. Over time, some children who did not experience immediate resolution will normalize, Mitchell says. Children who are overweight must lose weight in conjunction with the surgery for a successful outcome.

Obese children and children with Down's syndrome or other genetic disorders that affect the craniofacial anatomy were excluded from the study because the rate of OSA is known to be higher.

Source: Saint Louis University