The Upper Airway/Allergic Rhinitis

Seasonal Allergic Rhinitis Is Associated With a Detrimental Effect on Examination Performance in United Kingdom Teenagers: Case-Control Study

PURPOSE OF THE STUDY. Symptoms of seasonal allergic rhinitis (SAR) have been shown to impair learning ability in children under laboratory conditions. These investigators sought to study the effect of seasonal allergic rhinitis on actual examination performance in United Kingdom teenagers.

STUDY POPULATION. State schools in the United Kingdom with relatively large numbers of English-speaking students were invited to participate. These schools held practice examinations in the winter for the General Certificate of Secondary Education (GCSF). All students aged 15 to 17 years in the last year of study for their GCSF were invited to participate.

METHODS. Case status was defined by comparison of the performance of each student in winter practice with that of the final GCSF examination in May/June, which coincided with the grass-pollen season. GCSF examinations are critical for United Kingdom adolescents. Winter practice examinations are structured similarly to the final examinations. Both sets of examinations are marked on an 8-point scale. Any drop in grade on the final examination is unexpected. Students who dropped at least 1 grade in any of the 3 core subjects (math, English, and science) were considered cases. Controls were students whose grades in their final examinations were at least as good as those in their practice examinations in all 3 subjects. Two questionnaires were administered, 1 in April before the grass-pollen season and 1 on the day of each relevant examination. The first questionnaire determined if students had ever received a diagnosis of SAR. Information on potential confounders (eg, medication use, smoking status, history of asthma, etc) was also collected. The questionnaire administered immediately before the final examinations in May and June asked about SAR symptoms and treatment. The primary comparison was of the proportions of cases and controls with SAR symptoms and treatment, especially with sedating antihistamines. Pollen counts were reported annually before the final examinations in May and June and every 3 months after adenoidectomy. Data collected included age, presence of allergy or asthma, severity of sinusitis as indicated on computed tomography (CT) scans, and dates of adenoidectomy and subsequent sinus surgery.

RESULTS. A total of 1834 students (57% of the available population) agreed to participate. Between 38% and 43% of students reported SAR symptoms on any 1 of the examination days. There were 662 cases (36% of the students). Cases were significantly more likely than controls to have had allergic rhinitis symptoms during the examination period (odds ratio [OR]: 1.4 [95% confidence interval (CI): 1.1–1.8]; P = .002), to have taken any allergic rhinitis medication (OR: 1.4 [95% CI: 1.1–1.7]; P = .01), or to have taken sedating antihistamine (OR: 1.7 [95% CI: 1.1–2.8]; P = .03).

CONCLUSIONS. Current symptomatic allergic rhinitis and medication use were associated with a significantly increased risk of unexpected grade drop in summer examinations. These findings carry significant implications in clinical practice.

REVIEWER COMMENTS. The effects of uncontrolled SAR on school performance are most often insidious, and adolescents often have prolonged symptoms before proper medical intervention occurs. It is clear that proactive drug therapy and allergen avoidance can go a long way toward lessening symptoms of SAR. It is essential that the clinician educate parents on the value of intervening preseasonally and to then consider immunotherapy if avoidance and medication fail.

Failures of Adenoidectomy for Chronic Rhinosinusitis in Children: For Whom and When Do They Fail?
Ramadan HH, Tiu J. Laryngoscope. 2007;117(6):1080–1083

PURPOSE OF THE STUDY. To determine which children who undergo adenoidectomy for chronic rhinosinusitis will subsequently undergo endoscopic sinus surgery.

STUDY POPULATION. Children who had adenoidectomy for treatment of refractory chronic rhinosinusitis over a 10-year period at a tertiary pediatric facility were included in the study. Excluded children were those with immunodeficiency, cystic fibrosis, or previous sinus surgery. All patients had an extensive preoperative workup to rule out allergy, immunodeficiency, and cystic fibrosis.

METHODS. Charts were reviewed, and data were collected retrospectively. All patients underwent adenoidectomy via the suction electrocautery technique. Children were followed monthly for 3 months after adenoidectomy and then every 3 months. Data collected included age, presence of allergy or asthma, severity of sinusitis as indicated on computed tomography (CT) scans, and dates of adenoidectomy and subsequent sinus surgery. Endoscopic sinus surgery was performed for persistent symptoms despite adenoidectomy and medical management with radiographic evidence of sinusitis on CT scans.
RESULTS. A total of 143 children had adenoidectomy for sinusitis, and follow-up data were available for 121 children. Adenoidectomy failed for 61 (50%) children, with data available from 55 who had subsequent endoscopic sinus surgery. The mean time between adenoidectomy and endoscopic sinus surgery was 24 months (range: 4.4–77.4 months). Children with asthma had a mean of 19 months between surgeries, whereas those without asthma had an interval of 28 months (P = .04). Children younger than 7 years of age had sinus surgery a mean of 15 months after adenoidectomy, compared with an interval of 27.5 months between surgeries for children ≥7 years (P = .01). The presence of allergy, severity of sinusitis as indicated by CT scans, and gender did not seem to affect the time of failure of adenoidectomy.

CONCLUSIONS. At least 50% of children with rhinosinusitis will benefit from an adenoidectomy without the need for subsequent sinus surgery. Children who have persistent sinusitis that requires endoscopic sinus surgery after adenoidectomy tend to be younger children and/or children with asthma, with a mean of 24 months between surgeries.

REVIEWER COMMENTS. Adenoidectomy is a simple procedure that is effective for treating children with rhinosinusitis whose conditions fail medical therapy, but a number of children do go on to have more extensive surgical procedures. The retrospective nature of this study and limited information on how sinusitis symptoms were stratified, as well as how treatment failure was defined, affect our ability to generalize the conclusions of this study. The shorter interval between adenoidectomy and endoscopic sinus surgery in children with asthma may reflect a more aggressive approach to surgical management of sinusitis in the presence of pulmonary disease rather than an actual difference in the natural history of sinusitis in these children. The shorter interval between adenoidectomy and endoscopic sinus surgery in the younger children suggests more severe sinus symptoms in this group, although it may just reflect the natural history of sinusitis and upper respiratory infections in children, with eventual resolution expected for many older children regardless of treatment.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2008-2139XX

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Outcome of Adenoidectomy Versus Adenoidectomy With Maxillary Sinus Wash for Chronic Rhinosinusitis in Children

PURPOSE OF THE STUDY. To compare the outcomes of adenoidectomy with adenoidectomy combined with maxillary sinus wash for the treatment of children with medically refractory sinusitis.

STUDY POPULATION. Studied were children treated at a tertiary otolaryngology referral center with chronic (>6 months) or recurrent (>6 episodes) rhinosinusitis diagnosed by both clinical criteria and computed tomography (CT) who did not improve with 6 months of treatment with oral antibiotics, decongestants, and allergy management when appropriate. Children with cystic fibrosis, immunoglobulin deficiency, ciliary dysfunction, or a history of previous adenoid or sinus surgery were excluded.

METHODS. Patients were assigned to adenoidectomy alone or adenoidectomy in combination with maxillary sinus wash in a nonrandomized manner on the basis of surgeon and parental preference. A questionnaire was administered 12 months after surgery to evaluate changes in symptoms of nasal obstruction/congestion, purulent drainage, cough, and headache after surgery. Univariate and multivariate analyses were performed to compare results of the 2 procedures.

RESULTS. Sixty patients were enrolled in this study: 32 (53%) underwent adenoidectomy with sinus wash, and 28 (47%) had adenoidectomy alone. The adenoidectomy/wash group had more severe sinus disease on the basis of the Lund-Mackay scoring of CT scans (mean score: 7.9 vs 3.0; P = .001) and had more boys (P = .04). Overall, 87.5% of the patients who had adenoidectomy/sinus wash were improved on the basis of questionnaire results, compared with 60.7% of the subjects who had adenoidectomy alone (P = .017). Children with more severe sinusitis on the basis of CT scans were more likely to improve with both adenoidectomy/sinus wash than with adenoidectomy alone (93% vs 60%; P = .03).

CONCLUSIONS. This study demonstrates a benefit of maxillary sinus wash at the time of adenoidectomy for refractory sinusitis, particularly for children with more extensive sinus disease as indicated on preoperative CT scans.

REVIEWER COMMENTS. The role of surgery for treatment of children with sinusitis remains controversial. Who should have surgery, and which child should have adenoidectomy, endoscopic surgery, or maxillary lavage? The role of maxillary sinus wash or nasoantral windows for children has been discouraged in the past 2 decades with the recognition of key anterior ethmoid disease that might best be treated by endoscopic surgery when medical treatments fail. This article shows a benefit of maxillary wash when added to adenoidectomy, particularly for severe disease. This benefit may be from the method of irrigation through the natural ostium of the maxillary sinus rather than via the inferior meatus or the canine

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