vague, nonlocalizing signs and symptoms. Aggressive medical and surgical management may limit morbidity and improve outcomes. Early imaging is crucial to diagnosis, and MRI is the most useful test.

REVIEWER COMMENTS. Intracranial complications of sinusitis remain uncommon; even in this review from a tertiary pediatric center only 5 patients per year were identified. A high index of clinical suspicion, particularly in adolescent boys, should lead to early imaging for diagnosis. Medical therapy combined with neurosurgical and otolaryngological surgical interventions may improve outcomes and reduce short-term and long-term sequelae.

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Outcome of Endoscopic Sinus Surgery in Children With Allergic Rhinitis

PURPOSE OF THE STUDY. To compare results of endoscopic sinus surgery for treatment of chronic rhinosinusitis in children with and without documented allergy.

STUDY POPULATION. One hundred forty-one children (aged 3–13 years) with chronic rhinosinusitis who were followed for at least 12 months after endoscopic sinus surgery and had symptoms assessed by caregiver questionnaire were included in this study. All children were evaluated for allergy, immunoglobulin deficiency, and cystic fibrosis before surgery. A total of 77 children had documented allergy, and 64 had negative allergy evaluations. The allergic and nonallergic children were similar with regard to gender distribution, tobacco exposure, and disease severity, but asthma was more than twice as prevalent in the allergic group (56% vs 23%). Children with cystic fibrosis, immunodeficiency, fungal infection, or previous sinus surgery were excluded from the study. Surgery usually consisted of middle meatal antrostomy and anterior ethmoidectomy.

METHODS. Symptoms were evaluated by the caregiver using a nonvalidated questionnaire before surgery and every 3 months for at least 12 months after surgery. The results of the questionnaire 12 months after surgery were used to create 2 groups: (1) cured or improved subjects were categorized as successful, and (2) subjects with unchanged or worsened symptoms and those who required additional surgery were categorized as treatment failures. Medical treatment for sinusitis included long-term antibiotics, intranasal steroids, decongestants, antireflux treatment, systemic steroids, and allergy management. Allergy management consisted of antihistamines and intranasal steroids in all allergic children and immunotherapy in 25%. One third of allergic patients underwent endoscopic sinus surgery before initiation of allergy treatment.

RESULTS. The overall success rate for endoscopic sinus surgery was 80%. The allergic group had a 77% success rate after sinus surgery, whereas the nonallergic group had an 84% success rate, a difference that was not statistically significant. Multivariate analysis was performed, and the presence of allergy did not predict a poorer outcome. Allergic children who underwent sinus surgery without preoperative allergy treatment had a 62% success rate, compared with a success rate of 84% for children who were treated for allergy before surgery.

CONCLUSIONS. The presence of allergy does not predict poorer outcomes after sinus surgery in children. Preoperative treatment of such allergy improves surgical results.

REVIEWER COMMENTS. This article demonstrated that endoscopic sinus surgery can effectively treat refractory sinusitis in children even when allergy is documented. The standard practice of allergy evaluation and treatment before sinus surgery in children was also supported, although the details of such evaluation were not addressed in this article. Because this was a cohort study, not a randomized, controlled trial, we cannot assess the effects of allergy management alone on children with chronic sinusitis. It is curious that the group of children who had allergy treatment before surgery had better surgical results at a 12-month follow-up than the others with allergy, because we would suspect that all children diagnosed with allergy would be treated for allergy at some point before or after surgery. The indications for endoscopic sinus surgery in children, and the extent of such surgery, remain debated. This article adds to evidence that such surgery is effective for refractory sinusitis, even in allergic children.

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# Outcome of Endoscopic Sinus Surgery in Children With Allergic Rhinitis

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