ORIGINAL ARTICLE

Outpatient Adenotonsillectomy

Is It Safe in Children Younger Than 3 Years?

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Objective: To evaluate the safety of ambulatory adenotonsillectomy in children younger than 3 years.

Materials and Methods: The records of 102 children younger than 3 years who underwent adenotonsillectomy as an outpatient procedure were reviewed during a 3-year period.

Results: Ten patients (10%) required overnight hospital admission for an average of 1.4 days. Nine patients were admitted directly from the day-stay unit and 1 patient was admitted 48 hours after surgery. The reason for hospital admission was poor oral intake. None of the patients had postoperative bleeding or respiratory problems or required intensive care unit admission.

Conclusion: The safety of ambulatory adenotonsillectomy depends on judicious selection criteria and can be performed in children younger than 3 years.

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ADENOTONSILLECTOMY can be safely performed on an ambulatory basis provided strict selection criteria are used.[1-4] However, there remains concern about compromising patient safety when children younger than 3 years are discharged home on the day of surgery. The major concerns in this age group are respiratory problems, bleeding, and dehydration.[5] Studies have shown that both a young age and obstructive sleep apnea increase the postoperative risk. There is no evidence that the incidence of bleeding is higher in children younger than 3 years. However, vomiting is of particular concern in young children since it can rapidly result in dehydration.[4,5] Wiatrak et al[5] reported a 4% rate of dehydration in patients younger than 3 years who underwent tonsillectomy. The relatively high rate of postoperative complications in young children has led the American Academy of Otolaryngology–Head and Neck Surgery to recommend that all children aged 3 years or younger undergo adenotonsillectomy in an appropriate overnight hospital setting and that preadmission approval is justified.[6]

There have been recent reports[7,8] of children as young as 16 months who underwent adenotosillectomy as an outpatient procedure with no postoperative complications. We reviewed the records of all children younger than 3 years who underwent adenotonsillectomy as an outpatient procedure in our department and report our findings.

RESULTS

One hundred thirty-one patients (age range, 16-36 months; 77 female and 54 male) underwent adenotonsillectomies during a 3-year period, of which 102 (age range, 18-36 months; 60 female and 42 male) were performed on an ambulatory basis. Ten patients (10%) were admitted overnight to the hospital following surgery (age range, 20-32 months; mean, 28 months). Nine patients (9%) were admitted directly from the day-stay unit and 1 patient (1%) was admitted 48 hours after discharge.

The 10 patients were admitted to the hospital because of poor oral intake. None of the patients had postoperative bleeding or required admission to the intensive care unit. Patients were admitted for an average of 1.4 days (range, 1-3 days).

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MATERIALS AND METHODS

The medical records of all children younger than 3 years who had undergone an adenotonsillectomy as an outpatient procedure at the LeBonheur Childrens Medical Center, Memphis, Tenn, from January 1993 to December 1995 were reviewed. Patients were considered suitable for ambulatory surgery provided they met the following agreed criteria: no history of chronic illness or obstructive sleep apnea; no history of complications following a general anesthetic; no history suggestive of a bleeding diathesis; patient's permanent or temporary residence within 1 hour of the hospital; availability of personal transport; and an adult companion in attendance.

Age was not used to exclude any patient. One hundred two patients satisfied the selection criteria for ambulatory adenotonsillectomy and form the basis of this study. Information was collected about the age of the patient, the indications for surgery, the postoperative course, the hospital admission rate within the first 72 hours, and reason for admission.

Preoperative evaluation included a detailed history taking, physical examination, and complete blood cell count. Care was taken to screen patients for ambulatory surgery. Fellows and attending physicians from the Department of Pediatric Otolaryngology performed the surgery using general anesthesia, which was delivered by experienced pediatric anesthesiologists. An electrocautery was used to dissect the tonsils and a suction electrocautery helped to achieve hemostasis. Adenoidectomy was performed with a curet and the bleeding controlled by temporary packing of the nasopharynx. Patients were observed in the day surgery unit for a minimum of 4 hours after the operation and were evaluated by the surgeon and anesthesiologist prior to discharge. An information sheet was provided, explaining the expected postoperative course as well as emergency numbers to contact the physician on call.

COMMENT

The safety of outpatient tonsillectomy for selected patients was established more than 20 years ago by Chiang et al,[4] who reviewed 40 000 patients who underwent outpatient tonsillectomy with a hemorrhage rate of 0.006% and no mortality. More recently, the emphasis has been on refining the subset of patients who are candidates for outpatient surgery. The Pediatric Otolaryngology Committee of the American Academy of Otolaryngology–Head and Neck Surgery[6] has established conditions that warrant hospital admission following tonsillectomy, including an age of 3 years or younger. However, results of our study demonstrate that it is patient selection rather than age that leads to a favorable outcome following outpatient tonsillectomy.

Shott et al[9] evaluated the efficacy of adenotonsillectomy as an outpatient procedure in a prospective study in accordance with the guidelines set by the Academy. Thirty-five (11%) of 327 outpatients were admitted to the hospital from the day surgery unit and no major complications were encountered. The study confirms that the overwhelming majority of patients are discharged home without sequelae, provided the Academy guidelines are followed. However, it was not clear whether ambulatory surgery in children younger than 3 years who satisfied all the other criteria would jeopardize safety.

There are conflicting reports[9-12] about the safety of ambulatory adenotonsillectomy in children younger than 3 years. The major concerns include respiratory problems and dehydration. Rothschild et al[10] reviewed records of 238 ambulatory tonsillectomies and reported that the mean time to oral intake was 26.5 hours in children younger than 4 years, vs 16.5 hours for those older than 4 years. The authors argue that the delay in oral intake is a definite indication for hospital admission for all tonsillectomies in children younger than 3 years. It is unclear, however, whether respiratory problems following surgery are more frequent in children younger than 3 years with obstructive sleep apnea as opposed to children with recurrent infections. McColley et al[12] evaluated 69 children with sleep apnea documented by polysomnography and showed that the majority of patients (75%) who developed severe respiratory compromise following surgery were younger than 36 months. A similar study by Tom et al[8] reports that 52% of patients younger than 36 months required inpatient management mostly for respiratory problems, but the indication for surgery was obstructive sleep apnea.

Reiner et al[11] reviewed 1000 consecutive patients undergoing adenotonsillectomy, including 604 outpatients. The complication rates were analyzed after dividing the patients into age groups. There were 228 patients who were younger than 4 years, the majority of whom underwent outpatient adenotonsillectomy. The overall complication rate for the group was 4.8% and the inpatient and outpatient rates were 6.5% and 3.7%, respectively. It is interesting that even children younger than 4 years with obstructive sleep apnea were treated as outpatients without an increase in postoperative complications. Our complication rate mirrors the findings of this study. Nine patients were admitted from the day surgery unit mostly for poor oral intake. One patient presented within 72 hours with dehydration. These results support the concept of outpatient adenotonsillectomy for children younger than 3 years with recurrent infections. Patients who require hospital admission are in the minority and can be identified within the first 4 hours following surgery.

No child scheduled for outpatient surgery was transferred to the intensive care unit or was readmitted for respiratory compromise. Our main concern was not to send anyone home with a potentially life-threatening problem that mandates access to specialized medical care. Patients with obstructive sleep

apnea, regardless of age, were observed overnight and were excluded from the study. We believe that the critical factor in performing outpatient adenotonsillectomy is careful selection of patients; age alone is not a factor. The perioperative monitoring by a pediatric anesthesiologist may also have been an important factor in reducing the hospital admission rate.

The results of this study demonstrate that outpatient adenotonsillectomy is a safe procedure in children younger than 3 years who are carefully selected. Close observation following the procedure will identify those patients who require overnight observation. We recommend that children younger than 3 years who otherwise satisfy the outpatient selection criteria be scheduled for ambulatory surgery and the minority who develop complications following surgery be observed overnight.

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