

A Retrospective Study of the Eligibility for Tonsillectomy

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ABSTRACT: **Background:** The criteria for tonsillectomy for recurrent tonsillitis were established by prospective studies in the pediatric population and are applied to adults as well. No studies have been conducted to assess whether these guidelines are followed.

Objectives: To examine the eligibility for tonsillectomy of tonsillectomized patients who were referred because of recurrent acute tonsillitis.

Methods: A retrospective case series in an ambulatory military otolaryngology clinic was conducted, and the medical records of 44 tonsillectomized patients who suffered from throat infections during the year before surgery were analyzed. The number of tonsillar infections that met the referral criteria was counted.

Results: The average number of throat infections that met the referral criteria was 1.89 per year. The average number of visits to the clinic due to upper respiratory tract infection was 12.92 (range 2–36) per year. The average number of visits for any cause was 45.13 (range 6–64) per year. One patient with eight documented throat infections met the criterion of more than six infections in the last year.

Conclusion: Although the referral criteria were not strictly met, we speculate that surgery was probably beneficial. This study shows that the indications for tonsillectomy referral are not strictly followed, and that new criteria for referral of adults for tonsillectomy need to be established.

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not apply strict criteria but decide on tonsillectomy based on their subjective impression of the severity and frequency of the throat infection. However, in view of the complications of tonsillectomy – pain, hemorrhage, airway obstruction, postoperative pulmonary edema, death – the indications for surgery must be considered carefully. No studies have retrospectively examined or analyzed the clinical information of tonsillectomized patients with the purpose of establishing whether they were eligible for tonsillectomy according to Paradise's guidelines. The aim of the present work was to assess the clinical information that leads to the clinician's decision to refer patients for tonsillectomy.

PATIENTS AND METHODS

The medical charts of 44 patients who underwent tonsillectomy during the period April to July 2004 were reviewed. The medical charts were sampled in a military medical ambulatory facility. The computerized medical charts of these patients were available to the primary physician and the otolaryngologist, and each had access to the complete medical records. The number of throat infections suffered by each patient in the year preceding the visit to the otolaryngologist when tonsillectomy was decided on was established according to Paradise's criteria [1]. The criteria for inclusion of a throat infection were body temperature > 38.3°C, cervical lymphadenopathy > 2 cm, the presence of a β-hemolytic Streptococcus in a throat culture, and the presence of tonsillar exudate. The number of throat infections that did not meet Paradise's criteria was also recorded.

RESULTS

The patients' age ranged from 19 to 24 (average 20 years). Gender distribution was equal: 22 males and 22 females. The average number of visits to the general practitioner during which he diagnosed upper respiratory tract infections was 12.92 (standard deviation 8.12). The average for the rest of the population in the Israeli military was 1.18 ($P < 0.05$). The average number of visits to the clinic due to any cause was

Tonsillectomy is one of the most commonly performed surgeries. Studies in the last 30 years defined the referral criteria for tonsillectomy due to recurrent tonsillitis [1-12]. Because there are no prospective studies on the efficacy of tonsillectomy for adults with recurrent tonsillitis, selection criteria from studies in children are applied for adults as well. These criteria, derived from the studies conducted by Paradise, are commonly used today [1,3]. Some clinicians do

45.13 (SD 31.44). The control number for the general population of military personnel was 7.8 ($P < 0.05$).

Figure 1 divides the patients into groups according to the number of tonsillar infections meeting Paradise's criteria. In nine patients the tonsillar infections did not meet the criteria. The average number of throat infections that met the criteria was 1.89 (SD 1.74). Table 1 denotes the average reporting of symptoms per patient.

Figure 2 divides the patients into groups according to the number of tonsillar infections that did not meet Paradise's criteria. The average was 1.59 (SD 1.32). Throat infections

occurring more than one year prior to surgery were not documented.

DISCUSSION

As Figure 1 shows, only one patient in this sample would have undergone tonsillectomy had Paradise's criteria been strictly applied. A limitation of this study is that failure to document throat infections or physical findings could have led to under-reporting of throat infections that did meet Paradise's criteria. Therefore, only a prospective study in which Paradise's criteria are used by the physician can yield definite conclusions regarding patients' eligibility for tonsillectomy. Even if the throat infections that did not meet the criteria [Figure 2] are added to those that did, only five soldiers would have had the seven throat infections per year that would have made them eligible for tonsillectomy according to Paradise's criteria.

The patients in this sample are characterized by a high rate of visits to primary clinics where upper respiratory tract infections and general medical conditions are diagnosed. This might add to the physician's impression that the patients had severe and frequent illness.

WHAT SHOULD THE REFERRAL CRITERIA BE FOR TONSILLECTOMY?

The criteria for tonsillectomy for patients with recurrent throat infections have been debated for decades [1-10]. The substantial risks of tonsillectomy suggest that unnecessary surgery be avoided. Tonsillectomy does not contribute to the relief of colds, coughs and influenza [11] and therefore should not be undertaken for this purpose. Opinions are divided over the indications for tonsillectomy in recurrent throat infections. Authors disagree on how frequent the episodes have to be to justify tonsillectomy, and on the clinical nature of the episodes [1]. A few controlled trials have been conducted to assess the effectiveness of tonsillectomy in patients with recurrent throat infection but these were all conducted in children [1,7,10-12]. Physicians and surgeons have expressed a range of differing views regarding the indications for tonsillectomy [10,13].

In a prospective study by Paradise [1], only 17% of patients with recurrent undocumented throat infections eventually needed tonsillectomy after a deliberate waiting period. Eighty percent of those patients with recurrent undocumented throat infections did not have or had very rare throat infections after a waiting period. Paradise [1] concluded that undocumented histories of recurrent throat infections are not valid for predicting subsequent experience and therefore do not constitute an adequate basis for tonsillectomy referral. These criteria are used for adults too, even though they have never been validated in research on adults. Textbooks in otolaryngology offer partial information with regard to the indications for tonsillectomy for recurrent tonsillitis but do not go into detail [14-16]. There are probably adult patients

Figure 1. Number of tonsillar infections that meet the criteria of Paradise et al.

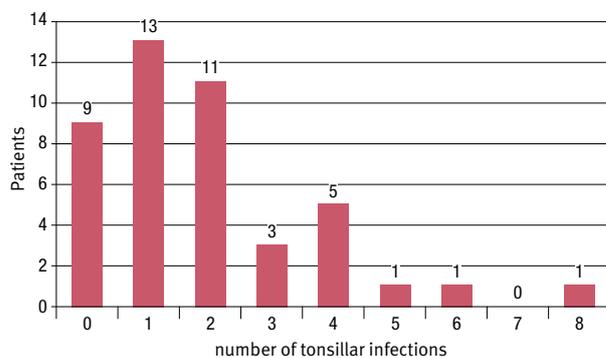
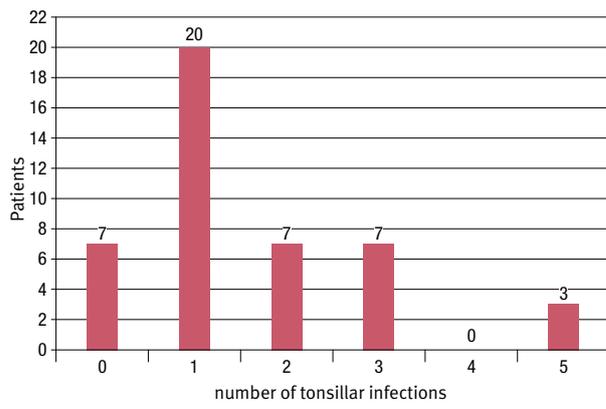


Table 1. Average incidence of each of the symptoms included in Paradise's criteria

Symptom	Average
Exudate	2.09
Cervical lymphadenopathy	1.71
Fever	1.00
Positive throat cultures	0.20

Figure 2. Number of tonsillar infections that do not meet the criteria of Paradise et al.



who will benefit from tonsillectomy but are not eligible for surgery when evaluated with Paradise's criteria.

OTHER FACTORS INFLUENCING THE PHYSICIAN'S DECISION

It has been shown that parents of children with recurrent throat infections have a substantial impact on the physician's decision whether to refer a child for tonsillectomy [7]. We assume that in our sample the parents' opinion on the eligibility for tonsillectomy may have influenced the primary physician and the otolaryngologist to recommend surgery. As reflected in the results, the frequency of visits to the primary physician and the frequency of diagnosed upper respiratory infections might also influence the decision on whether tonsillectomy should be performed.

CONCLUSIONS

Paradise's criteria are the only criteria for tonsillectomy for recurrent tonsillitis that are backed by a prospective study. If a patient has a substantial but undocumented history of recurrent throat infection, tonsillectomy should be postponed for a period of clinical observation for recurrent tonsillitis. This study and a previous publication [1] suggest that if this course is adopted the number of tonsillectomies performed could be reduced. Referral criteria should take into account the characteristics of the population involved. We believe that if the population has ready access to primary medical care, and if the circumstances and characteristics of patients tend to influence the manner in which they recount their medical history, undocumented throat infections should be discounted. The primary physician should be familiar with the criteria for tonsillectomy. In contrast to most other operations, the decision on whether to perform tonsillectomy in cases of recurrent tonsillitis should be made by the primary physician. Exceptions to Paradise's rules should be made in certain patients. The referral criteria should be investigated and validated in adults. Until this is done, subjective assessment of the severity and implications of throat infections by the physician is legitimate, and quality control over surgical decisions cannot be applied.

“Creative activity could be described as a type of learning process where teacher and pupil are located in the same individual”

Arthur Koestler (1905-1983), Hungarian-born novelist and journalist who studied in Austria and later moved to Britain. In 1931 he joined the Communist Party in Germany but, disillusioned, resigned from it in 1938 and in 1940 published a devastating anti-totalitarian novel, *Darkness at Noon*, which propelled him to international fame. Over the next 43 years, Koestler espoused many political causes and wrote novels, biographies and numerous essays. In 1968 he was awarded the prestigious Sonning Prize "for outstanding contribution to European culture", and in 1972 he was made a Commander of the British Empire (CBE).

“When I was young, I admired clever people. Now that I am old, I admire kind people”

Abraham Joshua Heschel (1907-1972), Warsaw-born American rabbi and one of the leading Jewish theologians and Jewish philosophers of the 20th century

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