

Current Belgian adenotonsillectomy practice: a survey among Belgian ENT specialists

K. Jacobs*, M. Jorissen* and P. Lemkens**

*Department of Otorhinolaryngology, Head and Neck Surgery, KU Leuven; **Department of Otorhinolaryngology, Head and Neck Surgery, ZOL, Genk, Belgium

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Abstract. *Current Belgian adenotonsillectomy practice: a survey among Belgian ENT specialists.*

Objectives: Tonsillectomies and adenotonsillectomies (TE and ATE) are among the most frequently performed operations in the western world. Despite the lack of generally accepted clinical guidelines about indications, the beneficial role of the procedure has been established.

The aim of this study was to identify current practice relating to indications for tonsillectomies and adenotonsillectomies among Belgian ENT specialists.

Methods: An anonymous questionnaire was sent to all Belgian ENT specialists. Part I of the questionnaire included questions about the ENT specialist himself/herself and his/her practice. Part II comprised questions about indications for TE/ATE in children up to 16 years of age. Part III included questions about indications in adults.

Results: 238 out of 528 questionnaires were completed and returned. The majority of physicians consider TE/ATE to be indicated if a child or an adult suffers 3 or 4 tonsillitis episodes per year. The decision to operate on children for upper airway obstruction is mainly based on clinical and anamnestic findings. A peritonsillar abscess is usually considered to be an indication for surgery. We compared the results between different groups of ENT specialists and could detect differences in decision-making only according to the number of years of ENT practice. The stringency of surgeons' indications decreases with increasing surgeon age.

Conclusions: The majority of respondents consider tonsillectomies/adenotonsillectomies to be indicated after 3 to 4 episodes of tonsillitis per year. In the case of upper airway obstruction in children, surgical indications are mainly based on clinical and anamnestic findings. Surgical decision-making appears to be influenced by the number of years of ENT practice.

Introduction and aim

Tonsillectomies/adenotonsillectomies (TE/ATE) are among the most frequently performed operations in the western world. They are the operation performed most often by ENT surgeons.¹

Indications for TE/ATE have always been the subject of discussion. Until the early 1980s, recurrent acute tonsillitis was the major indication. Since then, the upper airway obstruction due to adenotonsillar hyperplasia has become a more widespread indication for TE/ATE.^{2,3} Orthodontic problems,⁴ chronic tonsillitis and suspicion of tonsillar malignancy⁵ are indications as well. Finally TE/ATE can

play a role in treatment of peritonsillar abscesses,⁵ tonsillar crypt debris,⁶ IgA nephropathy⁷ and dysphagia and failure to thrive in children.⁶

Prospective clinical trials have definitively established the beneficial role of tonsillectomy in the management of recurrent tonsillitis^{8,9} and upper airway obstruction.^{10,11} Many studies have found a very high degree of patient or parental satisfaction after TE/ATE.^{12,13} Moreover, recent data from insurance organisations in Flanders show a significant reduction in the need for medical care (median antibiotic use, number of doctor visits) after the surgery.¹⁴ This all suggests that, despite the

lack of generally accepted clinical guidelines, decision-making for TE/ATE is effective. In previous studies, we examined the role of histopathology¹⁵ and the safety aspects of day case surgery.¹⁶

The aim of this study was to identify current practice patterns relating to indications for tonsillectomy/adenotonsillectomy among ENT specialists in Belgium.

Study design and methods

An anonymous questionnaire was sent to all Belgian ENT specialists.

The questionnaire was designed after a thorough review of the

literature. The survey was pilot tested by five otorhinolaryngologists and ambiguities were corrected.

The questionnaire had three parts: part I included questions about the ENT specialists themselves and their practice: the physicians' own experience-based definitions of tonsillitis were asked for as well. Part II comprised questions about indications for TE/ATE in children up to 16 years of age. Part III included questions about indications in adults.

The aim of our survey was to seek answers to the following questions:

- (1) Which patients listed for TE/ATE are referred by general practitioners and paediatricians?
- (2) On what grounds do Belgian ENT specialists make a diagnosis of acute tonsillitis?
- (3) To what extent is the referral by a general practitioner or a paediatrician asking for TE/ATE important in the decision to operate?
- (4) How many episodes of acute tonsillitis are required in children and adults to advise surgery?

(5) What are the current practice patterns concerning snoring and/or obstructive sleep apnoea and TE/ATE?

(6) Is a peritonsillary abscess always considered a reason to perform a tonsillectomy and, if so, what is considered the best timing to operate?

(7) What is the policy towards less clear indications for TE/ATE such as dysphagia, listlessness, failure to thrive, tonsillar crypt debris, hallitosis, chronic tonsillitis?

(8) Are there differences in decision-making relating to TE/ATE between different groups of ENT specialists (according to sex, years of ENT practice, working in a university hospital or not, number of TE/ATE procedures performed per year)?

Five hundred and twenty-eight questionnaires were sent in May 2006 and the last answers were received in July 2006. Data were entered into a Microsoft Access database and statistically analysed using SPSS for Windows.

To compare readiness to perform a tonsillectomy/adenotonsillectomy in different groups of ENT physicians, we

created an artificial score. We scored different answers on certain questions from 1 to 6, with 1 being the most conservative answer, and 6 the least conservative. For example, if a physician performs a tonsillectomy after 6 episodes of tonsillitis per year, we give him 2 points for this question. If he performs a tonsillectomy after 2 episodes per year, he gets 5 points. The questions we scored in this way are listed in Table I. The sum of all points is the score reflecting a physician's readiness to perform a TE/ATE.

Results

Two hundred and thirty-eight questionnaires were anonymously completed and returned, a response rate of 45%.

General questions

Figure 1 shows the distribution of physicians according to years of ENT practice. Two hundred and twenty-five of the doctors who responded (94.5%) work in a hospital; 33 of them (15%) in a university hospital, 47 (21%) in a

Table I

Questions used in the score to evaluate the readiness to perform TE/ATE

What is the minimum number of tonsillitis episodes per year a child has to suffer for you to propose surgery?
What is the minimum number of tonsillitis episodes per year during 2 consecutive years a child has to suffer for you to propose surgery?
What is your policy towards performing TE/ATE at the request of the family doctor?
What is your policy towards performing TE/ATE at the request of the paediatrician?
Is snoring/obstructive sleep apnoea in children a reason for you to perform TE/ATE?
What is the minimum number of tonsillitis episodes per year an adult has to suffer for you to propose surgery?
What is the minimum number of tonsillitis episodes per year during 2 consecutive years an adult has to suffer for you to propose surgery?
Is hallitosis or tonsillar crypt debris a reason to propose TE?
Do you consider chronic tonsillitis as an indication for TE?
Is snoring/obstructive sleep apnoea a reason to perform TE with or without UPPP?

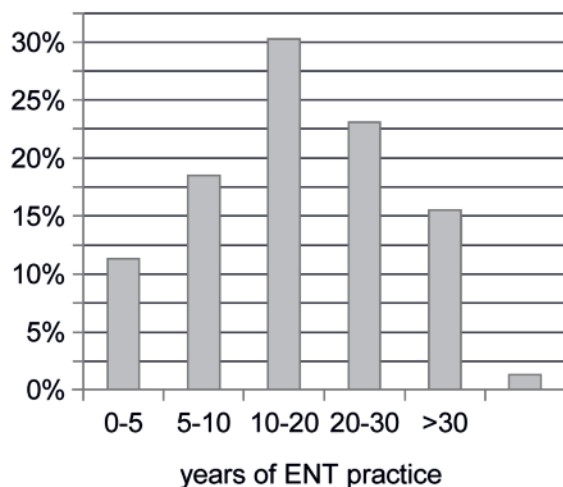


Figure 1

Distribution of responding physicians according to years of ENT practice.

non-university hospital with a training centre for ENT, and 140 (62%) in a non-university hospital without a training centre for ENT. Of the total population of Belgian ENT surgeons, 10% work in a university hospital and 10% in a non-university hospital with a training centre for ENT. The distribution of other characteristics such as sex and years of ENT practice in the group of answering physicians is similar to the distribution in the total population of Belgian ENT specialists.

The number of TE/ATE performed per year (overall and in children up to 16 years of age) is shown in Figures 2a and 2b. The question made no distinction between the rate for ATE and the rate for TE. Fifty-three percent of physicians combine a tonsillectomy with an adenotomy in more than 75% of cases. Most ENT surgeons (36.6%) perform between 50 and 100 TE/ATE per year. Thirty-one per cent perform between 25 and 50 TE/ATE per year in children; the same percent-

age perform between 100 and 200 procedures a year.

When the number of patients referred by a general practitioner (GP) was asked for, almost the same percentages of physicians say that the number is less than 25% (27.7% of physicians), 25 to 50% (35.5% of physicians) and 50 to 75% (27%).

Figure 3 shows the importance of certain signs and symptoms for the diagnosis of tonsillitis from the point of view of Belgian ENT specialists. Sore throat, swallowing difficulty and fever are considered the most important symptoms.

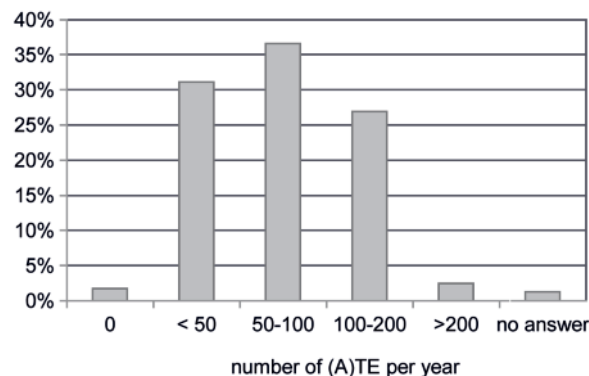


Figure 2a
TE/ATE rate

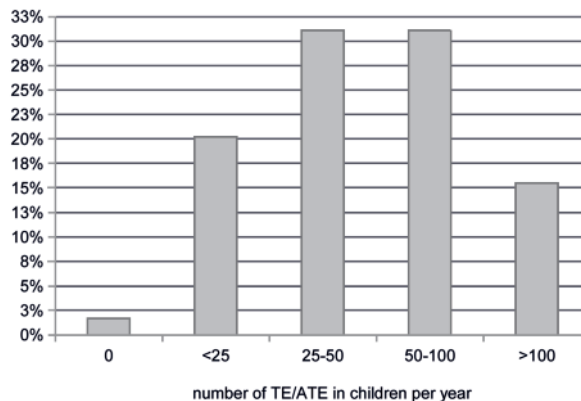


Figure 2b
TE/ATE rate in children up to 16 years

Questions relating to indications for tonsillectomy in children up to 16 years

Most physicians (83.2%) believe that tonsillectomy is indicated if a child suffers at least 3 or 4 episodes of tonsillitis per year. The majority (47.9 and 27.9% respectively) perform tonsillectomies after 3 or 4 episodes per year in 2 consecutive years.

For 28.6% of the ENT specialists, snoring in combination with clinically enlarged tonsils is an indication for tonsillectomy in children; 61.8% consider a history suggestive of sleep apnoea to be

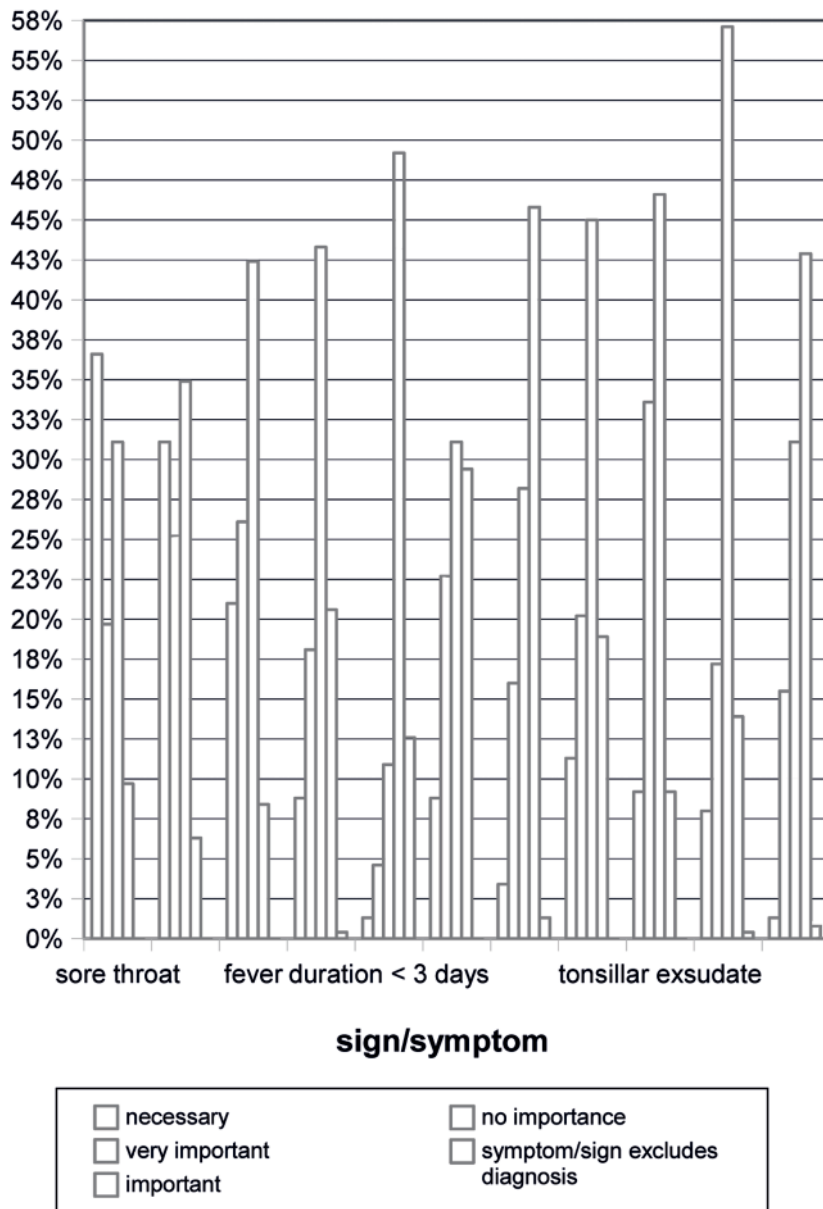


Figure 3 Importance of signs and symptoms in diagnosis of tonsillitis

necessary as well. A minority of physicians (8%) consider a positive polysomnography to be necessary and 1.3% never perform a tonsillectomy for snoring or obstructive sleep apnoea in children (Figure 4).

The majority of physicians (40.8%) consider diminished appetite, listlessness and failure to thrive to justify a tonsillectomy in

a child for tonsillectomy only if there is also a history of dysphagia in combination with enlarged tonsils.

When asked about the proportion of tonsillectomies performed for infections compared to those performed for airway obstruction, 72.7% of the ENT specialists answer 75/25% for children older than 5 years; in younger children

the proportions tend to be more equal (Figure 5).

Ninety per cent of responders say that they always check the indication if a child is referred for TE/ATE by the GP and that they only perform surgery if an operation seems to be justified. In cases of children referred by their paediatrician, 78% check the indication. Pursuant to the simple request of the GP or paediatrician, 3.4% and 13% of ENT physicians respectively perform surgery. The others say that they check the indications depending on the physician making the referral.

Questions about indications for tonsillectomy in adults

Most physicians (75.3%) consider a tonsillectomy to be indicated for an adult if there are 3 or 4 episodes of tonsillitis per year. The majority (20.2 and 44.1% respectively) perform a tonsillectomy after 2 or 3 episodes per year in 2 consecutive years.

A peritonsillar abscess is a straightforward indication for tonsillectomy for 48.7% of the answering physicians. Others think surgery is only necessary in patients with a history of peritonsillar abscess or recurrent tonsillitis, or if there is no other way to drain the abscess. Seventy seven per cent of respondents prefer operating for an abscess “à froid” with a mean interval of 4.5 weeks between the abscess and the surgery. Eighteen per cent perform a tonsillectomy “à chaud” and 5% did not answer the question.

Halitosis or tonsillar crypt debris is considered an indication for tonsillectomy by 95% of the physicians albeit, for the majority (68%), only in response to the explicit demand of the patient and if the tonsils are clearly cryptic.

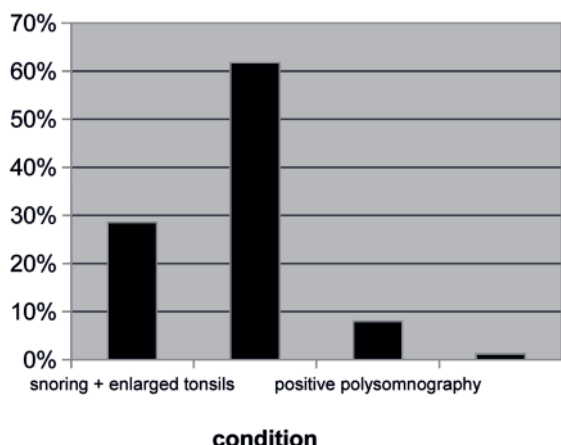


Figure 4

Tonsillectomy for snoring/obstructive sleep apnoea in children.

The majority of physicians (61%) usually consider a tonsillectomy in patients with chronic tonsillitis only at the explicit demand of the patient. However, 24.9% of the ENT specialists say that they do not consider chronic tonsillitis to be a disease in itself.

Eighty-six per cent of the physicians sometimes perform a tonsillectomy with or without UPPP for snoring and or obstructive apnoea in adults. The decision to operate is usually based on a combination of the assessment of local anatomy, the Müller manoeuvre and apnoea-hypopnoea index.

Comparison of decision-making for TE/ATE in different groups of ENT specialists

The mean artificial score reflecting a physician's readiness to perform a TE/ATE in our study was 28.2. We compared this score for different groups of ENT specialists according to sex, years of ENT practice, type of hospital they work in (university or not) and number of tonsillectomies performed per year. We found no

statistically significant differences in the score between the different groups, except a significant increase that is related to the number of years in ENT practice (Figure 6).

Discussion

This study identified current practice relating to indications for tonsillectomy/adenotonsillectomy among ENT specialists in Belgium by means of a questionnaire sent to all Belgian ENT specialists. We will compare the most remarkable patterns we found with the literature and the available clinical guidelines. Table II compares our findings with the guidelines of the Union Européenne des Médecins Spécialistes (UEMS).¹⁷

Most Belgian ENT physicians consider TE/ATE as a treatment option for children and adults after 3 or 4 episodes of tonsillitis per

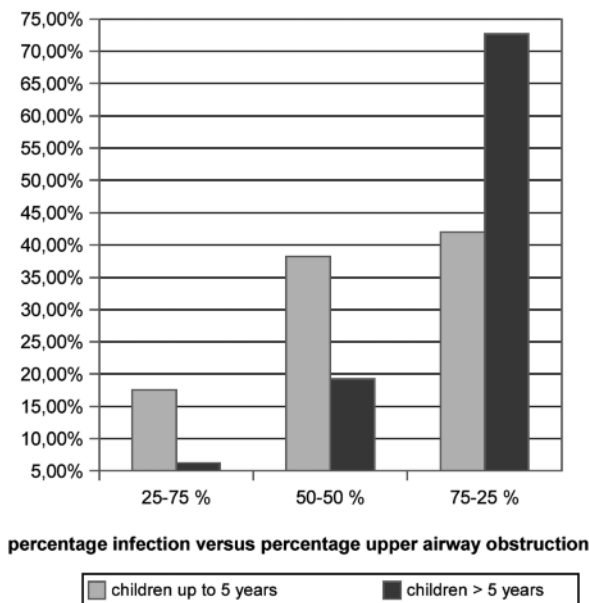


Figure 5

Number of tonsillectomies performed for infection versus upper airway obstruction in children.

year or 3 episodes in 2 consecutive years. This conforms with the UEMS guidelines¹⁷ stating that tonsillectomy is indicated in children and adults with 3 or more bacterial infections per year. The American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) provides comparable criteria: its guidelines state that TE/ATE should be performed after 3 or more infections of tonsils and/or adenoids per year despite adequate medical therapy.¹⁸ Earlier AAO-HNS guidelines were much more stringent, requiring 7 episodes of tonsillitis in 12 months, 5 episodes a year for 2 years, or 3 episodes a year for 3 years despite medical therapy before considering surgery. Later guidelines were adapted when studies showed that patients who did not meet these stringent criteria also benefited from TE/ATE.¹⁹ In our study, as well as in the literature, opinions about the

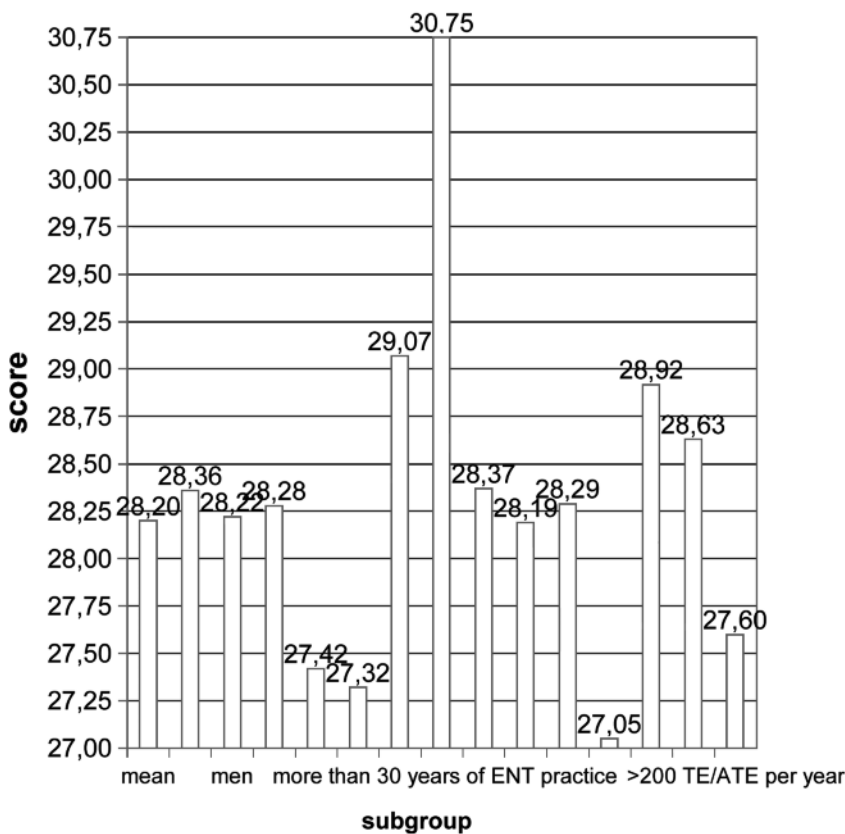


Figure 6
Readiness to perform a TE/ATE

Table II
Comparison of survey results with UEMS guidelines

Survey results	UEMS guidelines
Infection indications: 83.2%: 3 or 4 infections per year; strep test considered necessary by 1.3% 48.7%: every peritonsillar abscess; 36.6%: peritonsillar abscess if certain conditions are present	Infection indications: 3 or more bacterial infections per year; strep test not mandatory peritonsillar abscess
Hypertrophy indications: 90.5%: decision-making based on history (snoring, apnoea, dysphagia) and clinical findings (enlarged tonsils)	Hypertrophy indications: Hypertrophy causing deglutition problems Hypertrophy causing airway obstruction (SAS)

definition of tonsillitis differ strikingly. However, sore throat, swallowing difficulty and raised temperature are considered to be the most important factors for the majority of our respondents. In the literature, no studies relating to the indications or effectiveness of

TE/ATE for recurrent throat infections start from a clear, uniform definition of tonsillitis.⁹ It is legitimate to wonder how important such a uniform definition will be as long as the number of episodes suffered per year falls after surgery.^{5,14} There is one

criterion about which Belgian ENT physicians almost all agree and which is supported by the UEMS guidelines: a positive smear for group A (beta)hemolytic streptococcus is of no importance for the diagnosis of tonsillitis.

The majority of Belgian physicians consider TE/ATE for upper airway obstruction to be indicated in children with snoring, clinically enlarged tonsils and a history suggestive of sleep apnoea. This matches the UEMS guidelines.¹⁷ Only 8% of our respondents consider positive polysomnography (PSG) to be necessary in the decision to operate. However, PSG is still recommended by the guidelines of the American Academy of Pediatrics²⁰ and the American Thoracic Society.²¹ In the latter document, there is an additional recommendation stating that, in children with significant airway obstruction, PSG may be deferred to proceed with therapy expeditiously. A systematic review concluded that clinical and physical examination are not reliable for diagnosing OSAHS compared with overnight PSG.²² Nevertheless, the absence of a validated PSG threshold for clinically significant disease and poor feasibility in clinical practice leads to a policy different from that recommended in most guidelines: a survey of the members of the American Society of Pediatric Otolaryngologists (ASPO) showed that – as in our study – a majority of respondents (75%) rely on a clinical diagnosis rather than PSG to recommend TE/ATE for sleep disordered breathing in children.²³ By contrast with the situation regarding children, the decision to perform surgery (tonsillectomy with or without UPPP)

for obstructive sleep apnoea in adults is usually less easily made and only after PSG. The background to this difference is that the pathophysiology of obstructive sleep apnoea is different in children and adults: in children, the airway obstruction is caused by tonsillar/adenotonsillar hypertrophy and in adults it is caused by failing or insufficient pharyngeal muscle tone during sleep, resulting in inspiratory pharyngeal collapse.⁵

Turning to peritonsillar abscesses (PTA), the opinions of our respondents differ: 48.7% of them think this is a straightforward indication for tonsillectomy. This matches UEMS guidelines.¹⁷ Others think surgery is only necessary in patients with a history of peritonsillar abscess or recurrent tonsillitis, or if there is no other way to drain the abscess. A literature review shows comparable, good success rates (up to 96%) for needle aspiration, incision and drainage and quinsy tonsillectomy in the initial treatment of PTA.²⁴ Since the recurrence rate for PTA after successful initial treatment (excluding tonsillectomy) is only 10-13%, it is questionable whether a tonsillectomy should be performed for each PTA.²⁴ It is not clear whether a history of recurrent tonsillitis is associated with a higher risk of developing a recurrent abscess.²⁴ However, in this situation, a tonsillectomy can be seen as a treatment for the abscess as well as for the recurrent tonsillitis. This could be an additional argument in favour of operating. Seventy-seven per cent of Belgian ENT specialists prefer interval tonsillectomy to quinsy tonsillectomy. Although one article reports less blood loss in quinsy tonsillectomy

compared to interval tonsillectomy,²⁵ the main difference in outcome between the two strategies seems to be the total duration of hospital stay and the number of days lost from work, with both outcomes favouring quinsy tonsillectomy.²⁴

To our knowledge, there have been no studies looking at differences in decision-making in different groups of ENT specialists. In our study, the only significant difference is related to the increasing age of the surgeon, with the stringency of indications for TE/ATE apparently decreasing with age. The reason for this finding is still unclear. It is possible that it is partially due to differences in the shared policy towards surgery at the beginning of their careers.² However, it can be assumed that older physicians follow the literature as well as younger colleagues. They may be guided in part by their own clinical experience, which should always be kept in mind when interpreting literature treatment recommendations and guidelines.²⁴

Conclusion

This study was based on a questionnaire completed anonymously by 238 Belgian ENT specialists. The majority of respondents consider tonsillectomy/adenotonsillectomy to be indicated after 3 to 4 episodes of tonsillitis per year in children and after 2 to 3 episodes in adults. In the case of upper airway obstruction in children, the surgical indication is mainly based on clinical and anamnestic findings rather than on polysomnography results. Policies about the treatment of peritonsillar abscess are controversial. Surgical deci-

sion-making in TE/ATE seems to differ depending on the number of years of experience of the surgeon: the stringency of indications for TE/ATE seems to decrease with advancing age.

References

1. Rutkow IM. Ear, nose, and throat operations in the United States, 1979 to 1984. *Arch Otolaryngol Head Neck Surg.* 1986;112(8):873-876.
2. Rosenfeld RM, Green RP. Tonsillectomy and adenoidectomy: changing trends. *Ann Otol Rhinol Laryngol.* 1990;99(3 Pt 1):187-191.
3. Darrow DH, Siemens C. Indications for tonsillectomy and adenoidectomy. *Laryngoscope.* 2002;112(8 Pt 2 Suppl 100):6-10.
4. Agren K, Nordlander B, Linder-Aronsson S, Zettergren-Wijk L, Svanborg E. Children with nocturnal upper airway obstruction: postoperative orthodontic and respiratory improvement. *Acta Otolaryngol.* 1998;118(4):581-587.
5. Wolfensberger M, Mund MT. Evidence based indications for tonsillectomy [in German]. *Ther Umsch.* 2004;61(5):325-328.
6. van den Akker EH, Schilder AG, Kemps Y, van Balen FA, Hordijk GJ, Hoes AW. Current indications for (adeno)tonsillectomy in children: a survey in The Netherlands. *Int J Pediatr Otorhinolaryngol.* 2003;67(6):603-607.
7. Matutani S, Honma R, Adachi M, Hotta O. Clinical observation of palatine tonsils with IgA nephropathy. *Acta Otolaryngol Suppl.* 2004;(555):58-61.
8. Paradise JL, Bluestone CD, Bachman RZ, Colborn DK, Bernard BS, Taylor FH, Rogers KD, Schwarzbach RH, Stool SE, Friday GA, et al. Efficacy of tonsillectomy for recurrent throat infection in severely affected children. Results of parallel randomized and nonrandomized clinical trials. *N Engl J Med.* 1984;310(11):674-683.
9. Burton MJ, Glasziou PP. Tonsillectomy or adeno-tonsillectomy versus non-surgical treatment for chronic/recurrent acute tonsillitis.

- Cochrane Database Syst Rev.* 2009;Jan 21(1):CD001802.
10. Suen JS, Arnold JE, Brooks LJ. Adenotonsillectomy for treatment of obstructive sleep apnea in children. *Arch Otolaryngol Head Neck Surg.* 1995;121(5):525-530.
 11. Mitchell RB, Kelly J, Call E, Yao N. Quality of life after adenotonsillectomy for obstructive sleep apnea in children. *Arch Otolaryngol Head Neck Surg.* 2004; 130(2):190-194.
 12. Blair RL, McKerrow WS, Carter NW, Fenton A. The Scottish tonsillectomy audit. The Audit Sub-Committee of the Scottish Otolaryngological Society. *J Laryngol Otol Suppl.* 1996;20:1-25.
 13. Wolfensberger M, Haury JA, Linder T. Parent satisfaction 1 year after adenotonsillectomy of their children. *Int J Pediatr Otorhinolaryngol.* 2000;56(3):199-205.
 14. Egondi TW. *Use of the negative binominal distribution in assessing the effectiveness of adenotonsillectomy in Flanders* [master's thesis]. Department of Applied Statistics, University of Hasselt, Hasselt, Belgium; 2004-2005.
 15. Dewil B, Jorissen M, Lemkens P. Routine pathological evaluation after tonsillectomy: is it necessary? *B-ENT.* 2006;2(3):103-108.
 16. Laureyns G, Lemkens P, Jorissen M. Tonsillectomy as a day-case surgery: a safe procedure? *B-ENT.* 2006;2(3): 109-116.
 17. Hörmann K, Proops D, Somers T, de la Mota M. UEMS guidelines "Tonsillectomy". Available at: <http://www.orluems.com/doc/Tonsillectomy.pdf>. Accessed October 16, 2008.
 18. American Academy of Otolaryngology-Head and Neck Surgery. 2000 *Clinical Indicators Compendium*. VA, Alexandria; 2000;19(6).
 19. Mui S, Rasgon BM, Hilsinger RL Jr. Efficacy of tonsillectomy for recurrent throat infection in adults. *Laryngoscope.* 1998;108(9):1325-1328.
 20. Section on Pediatric Pulmonology, Subcommittee on Obstructive Sleep Apnea Syndrome. American Academy of Pediatrics. Clinical practice guideline : diagnosis and management of childhood obstructive sleep apnea syndrome. *Pediatrics.* 2002;109(4):704-712.
 21. Standards and indications for cardiopulmonary sleep studies in children. American Thoracic Society. *Am J Respir Crit Care Med.* 1996; 153(2):866-878.
 22. Brietzke SE, Katz ES, Roberson DW. Can history and physical examination reliably diagnose pediatric obstructive sleep apnea/hypopnea syndrome? A systematic review of the literature. *Otolaryngol Head Neck Surg.* 2004;131(6):827-832.
 23. Mitchell RB, Pereira KD, Friedman NR. Sleep-disordered breathing in children: survey of current practice. *Laryngoscope.* 2006; 116(6):956-958.
 24. Johnson RF, Stewart MG, Wright CC. An evidence-based review of the treatment of peritonsillar abscess. *Otolaryngol Head Neck Surg.* 2003;128(3):332-343.
 25. Lockhart R, Parker GS, Tami TA. Role of quinsy tonsillectomy in the management of peritonsillar abscess. *Ann Otol Rhinol Laryngol.* 1991; 100(7):569-571.

Dr. P. Lemkens
Sint-Lodewijkstraat 4C
3600 Genk, Belgium
E-mail: Peter.Lemkens@nko.be