The Most Important Throat-Related Symptoms Suggestive of Chronic Tonsillitis as the Main Indication for Adult Tonsillectomy

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Key Words: *adult; chronic tonsillitis; throat-related symptoms; tonsillectomy.*

Summary. *Background and Objective. The literature lacks data about the evaluation of throat-related symptoms proving chronic tonsillitis as the most common indication for adult tonsillectomy. Therefore, the aim of this study was to assess the most important throat-related symptoms suggestive of chronic tonsillitis in adults.*

Material and Methods. A prospective cohort study was carried out. The analysis of throat-related symptoms (complaints, tonsillitis rate, pharyngeal signs, and antistreptolysin-O titer) in 81 adults with histologically confirmed chronic tonsillitis was conducted.

Results. Recurrent tonsillitis was the most common complaint (74.1%). The mean number of tonsillitis episodes was 3.6 (SD, 1.9) times per year. There were no significant differences comparing the frequencies of all the analyzed pharyngeal signs (P>0.05). The antistreptolysin-O titer (mean, 279.8; SD, 211.6 UL) was pathological in 33.3% of patients. The study identified the most important throat-related symptoms revealing chronic tonsillitis: tonsillar cryptic debris (OR, 8.84; 95% CI, 1.93–40.53; P=0.005) and enlarged anterior cervical lymph nodes along with the frequency of tonsillitis episodes exceeding 3 times per year (OR, 8.27; 95% CI, 1.33–51.57; P=0.024). The classification accuracy of 85.2% was obtained.

Conclusions. Tonsillar cryptic debris and enlarged regional lymph nodes along with recurrent tonsillitis could support the diagnosis of chronic tonsillitis in adults when considering tonsillectomy.

Introduction

According to the last 25-year literature, chronic or recurrent tonsillitis is the most common indication for adult tonsillectomy (TE) (1, 2). Some recent randomized controlled studies involving adults with chronic tonsillitis have demonstrated a significant improvement in quality of life after TE: a decrease in the frequency of episodes of chronic or recurrent sore throat, group A streptococcal (GABS) pharyngitis, and missed workdays as well as a reduction in antibiotic use (3–8). Moreover, the benefit of TE is confirmed by long-term follow-up data : more than 87% of patients would recommend surgery for chronic tonsillitis (8, 9). However, it should be noted that chronic tonsillitis is one of the relative indications for TE (10). The benefit of the operation should outweigh postoperative morbidity and the risk of possible complications, especially comorbidity, the rate of which is increasing with age. Therefore, unnecessary surgery should be avoided.

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The criteria for adult TE in patients with recurrent or chronic tonsillitis have been debated for decades. The main disagreement is on how frequent the episodes have to be to justify TE (9). According to the current guidelines, patients with at least 3 episodes per year despite adequate medical therapy may be considered candidates for TE. Surgical treatment is definitely recommended for patients with more than 4 or 5 episodes per year. Due to the paucity of prospective randomized trials about TE in adults with chronic tonsillitis, these indications for adults have been derived from the Paradise studies in children and correspond to grade 2C, (3, 4, 9, 10).

Adult patients suffering from chronic tonsillitis often have less severe episodes of acute throat infection. However, other predominant features of a chronic disease, such as poor general health, unexplained fever, or any throat-related symptoms (tonsillar cryptic debris, halitosis, ear pain, persistent throat discomfort, or enlarged cervical lymph nodes) that could decrease quality of life, has also been used as an appropriate indicator for TE (7–9, 11–14). The literature data concerning the assessment of throat-related symptoms suggestive of chronic tonsillitis when considering adult TE are

scarce. Therefore, the aim of this study was to assess the most important throat-related symptoms suggestive of chronic tonsillitis in adults.

Material and Methods

The study was conducted at the Department of Otorhinolaryngology, Medical Academy, Lithuanian University of Health Sciences, in 2011. The patients' group included 81 adult patients with histologically confirmed chronic tonsillitis followed by TE. There were 49 men and 32 women with age ranging from 18 to 61 years (mean, 26.3 years; SD, 7.6). The patients with a history of acute tonsillitis during the last month, diabetes mellitus, dental problems, gastroesophageal reflux disease, or systemic diseases were excluded from the study.

The histological confirmation of chronic tonsillitis was based on the criteria derived from the study by Ripplinger et al. (15). Four histological groups of chronic tonsillitis were analyzed: 1) pure hyperplasia of the lymphoid tissue without inflammation; 2) chronic inflammation; 3) chronic inflammation with hyperplasia; and 4) chronic inflammation with peritonsillar scarring/fibrosis (15). The group 1 included 6 patients (7.4%); the group 2, 26 patients (32.1%); the group 3, 31 patients (38.3%); and group 4, 18 patients (22.2%). The percentage of patients in the group 3 was the greatest compared with all groups ($P<0.05$).

Throat-Related Symptoms. The following most common complaints associated with chronic tonsillitis were analyzed: recurrent tonsillitis, weakness/chronic fatigue, unexplained subfebrile condition, halitosis, snoring, swallowing difficulties, loss of appetite, palpitations, hypertension, and joint pain (13).

The frequency of tonsillitis episodes was calculated by assessing the number of the episodes of throat infection recorded in patient's medical records. An episode of acute tonsillitis was defined by one or more of the following signs: temperature >38.3°C, cervical adenopathy, tonsillar exudate, or positive results of the test for GABS (10).

Pharyngeal signs were evaluated during conventional pharyngoscopy: 1) the grade of tonsillar hypertrophy (0–4); 2) tonsillar cryptic debris; 3) tonsillar asymmetry; 4) erythema of the fauces; and 5) hypertrophy of the fauces (13, 16).

Enlargement of lymph nodes. Anterior cervical lymph nodes measuring >1 cm were detected during palpation (17).

Antistreptolysin O titer. As the sign of streptococcal infection, serum antistreptolysin-O (ASO) antibody levels were estimated. The ASO titer of >200 UL was considered as pathological (13).

Statistical Analysis. Statistical analysis was performed by using the IBM SPPS Statistics 20 for Windows software. The Student *t* test was used for testing hypotheses about the equality of the means. The Kruskal-Wallis test was applied for comparing more than 2 samples. For testing hypotheses about independence, the chi-square test was used. The logistic regression analysis (stepwise method, forward conditional) was used for the identification of the most important throat-related symptoms suggesting chronic tonsillitis and supporting indications for adult TE. The level of statistical significance when testing statistical hypotheses was <0.05.

Results

Throat-Related Complaints. As shown in Table 1, recurrent tonsillitis (74.1%) was the most common throat-related complaint ($P<0.01$). The frequency of tonsillitis episodes ranged from 1 to 8 (mean, 3.6; SD, 1.9) times per year, predominately 3–4 times per year (46.9%). Sixty patients (74.1%) experienced the episodes of acute tonsillitis 3 and more times per year (Table 2). Therefore, the frequency of tonsillitis starting from 3 episodes per year was considered as a pathological criterion.

Pharyngeal Signs. Tonsillar cryptic debris (61.7%), erythema (59.3%), and hypertrophy of fauces (56.8%) were predominant pharyngeal signs in the group of patients with chronic tonsillitis (Table 3). Grade 2 tonsillar hypertrophy was the most common (53.1%). However, there was no significant difference comparing the frequencies of all the assessed pharyngeal signs ($P>0.05$).

Table 1. Throat-Related Complaints Among Patients

Complaint	n (%)
Recurrent tonsillitis	60 (74.1)*
Weakness/chronic fatigue	36 (44.4)
Halitosis	32 (39.5)
Palpitations	29 (35.8)
Unexplained subfebrile condition	26 (32.1)
Snoring	22 (27.2)
Swallowing difficulties	22 (27.2)
Joint pain	21 (25.9)
Hypertension	18 (22.2)
Loss of appetite	17 (21.0)

*$P=0.002$ (chi-square test).

Table 2. Frequency of Tonsillitis Episodes per Year Among Patients

Frequency of Tonsillitis Episodes	n (%)
0	5 (6.2)
1	5 (6.2)
2	11 (13.6)
3	18 (22.2)
4	20 (24.7)
5	12 (14.8)
6	4 (4.9)
7	1 (1.2)
8	5 (6.2)

Table 3. Pharyngeal Signs Among Patients With Chronic Tonsillitis

Pharyngeal Sign	n (%)
Tonsillar cryptic debris	50 (61.7)
Erythema of fauces	48 (59.3)
Hypertrophy of fauces	46 (56.8)
Tonsillar hypertrophy, grade 2	43 (53.1)
Lymph node enlargement	38 (46.9)
Tonsillar hypertrophy, grade 3	21 (25.9)
Tonsilar asymmetry	18 (22.2)
Tonsillar hypertrophy, grade 1	15 (18.5)
Tonsillar hypertrophy, grade 4	2 (2.5)

ASO Titer. The ASO titer ranged from 12 to 868 UL (mean, 279.8; SD, 211.6), being pathological in 33.3% (n=27) of patients.

The Most Important Throat-Related Symptoms Indicating Chronic Tonsillitis. The logistic regression analysis revealed that tonsillar cryptic debris (OR, 8.84; 95% CI, 1.93–40.53; P=0.005) and the frequency of pathological tonsillitis (⩾3 times per year) along with enlarged anterior cervical lymph nodes (OR, 8.27; 95% CI, 1.33–51.57; P=0.024) were the most important throat-related symptoms indicating chronic tonsillitis. The classification accuracy of 85.2% based on these criteria was detected (Tables 4 and 5).

Discussion

Chronic or recurrent tonsillitis is an indication for TE in up to 57% of adult patients (1). Despite numerous studies conducted during the last 30 years, there is no evidence to support recommendations that a specified frequency and severity of throat infection episodes should prompt the consideration of adult TE due to chronic or recurrent tonsillitis (9). In our study, the mean number of tonsillitis episodes in patients with histologically confirmed chronic tonsillitis was 3.6 times per year (predominantly, 3–4 times). This corresponds to the frequency of tonsillitis episodes mentioned in the AAO-HNS Guidelines for Tonsillectomy (10). The majority of Belgian ear, nose and throat specialists also considered TE to be indicated after 3 to 4 episodes of tonsillitis per year (18). Moreover, according to our study, the frequency of tonsillitis starting from 3 episodes per year in combination with enlarged anterior cervical lymph nodes increased the probability of being attributed to the chronic tonsillitis group by 8 times.

Oropharyngeal examination is often blamed for the lack of scientific evidence. Nevertheless, some authors suggest taking note of any throat-related symptoms like cryptic debris, halitosis, ear pain, persistent throat discomfort, or pain that could affect quality of life, seeing them as indications for TE (7, 8, 13). Our study showed that tonsillar cryptic debris was a predominant pharyngeal sign documented in 61.7% of cases. The logistic regression analysis revealed that cryptic debris was one of the most important throat-related symptoms in diagnosing chronic tonsillitis and supporting indications for adult TE. This statement corresponds to the study by Kasenomm where cryptic debris was detected in 80% of cases and was considered to be the most valuable pharyngeal sign. The author noted that the examination could serve as an objective tool for quantifying indications for adult TE because of the correlation between recurrently

Table 4. The Most Important Throat-Related Symptoms Indicating Chronic Tonsillitis in Adults

Symptom	β	P	OR (95% CI)
Cryptic debris	2.18	0.005	8.84 (1.93–40.53)
Frequency of tonsillitis episodes (⩾3 times per year) + anterior cervical lymph node enlargement	2.11	0.024	8.27 (1.33–51.57)
Constant	–2.07	0.009	0.13

Table 5. Classification Accuracy of Chronic Tonsillitis Based on the Most Important Throat-Related Symptoms (Logistic Regression: Stepwise Method, Forward Conditional)

Observed Cases			Predicted Cases		
			Chronic Tonsillitis		Correct %
			No	Yes	
Step 1	Chronic tonsillitis	No	13	8	61.9
		Yes	11	49	81.7
	Overall %				76.5
Step 2	Chronic tonsillitis	No	11	10	52.4
		Yes	6	54	90.0
	Overall %				80.2
Step 3	Chronic tonsillitis	No	10	11	47.6
		Yes	1	59	98.3
	Overall %				85.2

inflamed tonsils and the immune function. It is recommended to pay attention to sclerotic signs (cryptic debris, tonsillar tenderness) that may be the only indicator of chronic tonsillitis in adults with a lower rate of tonsillitis episodes (13).

A pathological ASO titer is common in the group of patients with more frequent recurrent febrile pharyngo-tonsillar inflammation, and it serves as an indicator of a recent streptococcal infection (19). Some authors do not recommend trusting the ASO titer in diagnosing chronic tonsillitis or updating indications for TE because the upper limit values are known to vary regarding age, different geographical locations, and different seasons (20). Therefore, ASO titer testing is not mentioned in consensus decisions on the diagnosis of chronic tonsillitis or on updating the indications for adult TE. In our study, the pathological ASO titers were found in 33.3% of adult patients with histologically proven chronic tonsillitis. However, statistical analysis did not reveal the pathological ASO titer to be among the most significant throat-related signs of chronic tonsillitis. The estimation of the ASO titer is not listed among the most important throat-related symptoms indicating adult TE in the dissertation of Kasenomm, even though the pathological ASO titer (>200 IU) was detected in 93% of patients (13).

Conclusions

Because there is no evidence from studies to support the recommendations for adult tonsillectomy with recurrent throat infection, each case should be evaluated individually, assessing the presence and severity of all throat-related symptoms and their impact on patient's quality of life. The frequency of tonsillitis episodes in combination with some signs of tonsillar inflammation could serve as indicators of chronic tonsillitis in adults when considering tonsillectomy.

Statement of Conflict of Interest

The authors state no conflict of interest.

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