Peer reviewed article

Impact of tonsillectomy on quality of life in adults with chronic tonsillitis

Ilona Schwentner[a*], *Stefan Höfer*[b*], *Joachim Schmutzhard*[a], *Martina Deibl*[c], *Georg M. Sprinzl*[d]

[a] Department of Otorhinolaryngology, University Hospital, Medical University Innsbruck, Austria
[b] Department of Medical Psychology and Psychotherapy, Medical University Innsbruck, Austria
[c] Department of Biostatistics and Documentation, Medical University Innsbruck, Austria
[d] Department of Otorhinolaryngology, University Giessen and Marburg, Germany
* Contributed equally

Summary

Objectives: Tonsillectomy is one of the most frequently performed surgical procedures. Nevertheless there is less known about the impact of this procedure on Health-Related Quality of life (HRQOL). The two different most common used surgical techniques are "cold" (CT) and "hot" (HT) tonsillectomy. The aim of this study was to measure patients' HRQOL-benefit after adult tonsillectomy with the indication of chronic tonsillitis and to compare HT and CT.

Methods: The Glasgow Benefit Inventory (GBI) was used to quantify the health benefit of CT and HT retrospectively in 600 patients aged 16 years and older.

Results: 227 of the patients returned the completed surveys. Mean total GBI score was 15.8 (18 SD, 13.2–18.4 CI) for CT and 11.6 (15 SD, 7–16.3 CI) for HT (p = 0.214). Patients reported an improvement in HRQOL in all GBI subscales. We could not find a significant difference in reported HRQOL benefit between HT and CT.

Conclusion: Adult tonsillectomy, HT as well as CT, for the indication of chronic tonsillitis provides an improvement in HRQOL. This positive impact of tonsillectomy in patients with chronic tonsillitis should be considered in the clinical decision-making process for tonsillectomy.

Key words: health related quality of life; hot and cold tonsillectomy; chronic tonsillitis

Introduction

In times of health-care economisation, evidence of clinical benefit after surgical intervention is not enough to justify a special therapeutic procedure. Clinical effectiveness in combination with Health-Related Quality of life (HRQOL) examinations may help to corroborate the entitlement to surgical procedures.

Although tonsillectomy is one of the most frequently performed surgical interventions in the United States and Europe there is little known about the HRQOL impact of this procedure [1]. Chronic tonsillitis and recurrent tonsillitis are the most common indication for adult tonsillectomy. Chronic tonsillitis is poorly defined but may be the appropriate term for sore throat of at least 3 months' duration accompanied by tonsillar inflammation [2].

Few studies focus on the HRQOL and economic impact of adult tonsillectomy. Their results show a significant HRQOL improvement in patients with chronic tonsillitis after tonsillectomy and decrease of medical resource usage and therewith a socio-economic benefit [2]. These studies were conducted with a small number of patients (83 patients, 65 patients). Tonsillectomy seems to be a reasonable consideration in patients with no response to aggressive antibiotic therapy [2]. Mui et al. have shown that tonsillectomy significantly reduces the need of antibiotic therapy and the number of consultations [3]. The indisposition due to chronic tonsillitis leads to physician visits, medication and missed work-days. These facts result in a decreased economic productivity [4, 5].

Besides the controversy of indication for adult tonsillectomy a further dispute remains concerning the optimal method with the least morbidity. The most commonly used operation techniques are "cold" (CT) and "hot" (HT) tonsillectomy [6–8]. Cold dissection is the most common method of tonsillectomy. Over the last years a plethora of studies focused on this topic. All these studies compared peri- and directly postoperative differences of these two surgical techniques. The morbidity of these procedures was compared with the following parameters: pain, bleeding, nausea, vomiting, dehydration and airway obstruction [9]. Due to these analyses assets and drawbacks of each technique in the period

No financial support declared.

during and after surgical intervention are well known. In a current review of the literature HT increases pain in comparison with CT. Operative blood loss and operative time were decreased using HT. In light of these results HT may be useful in patients with coagulopathies or paediatric patients with small blood volumes [9]. However, we do not know a lot about long-term HRQOL results for either HT or CT.

We decided to measure patients' HRQOL benefit after adult tonsillectomy with the indication of chronic tonsillitis. The comparison of changes in HRQOL after HT and CT is a special focus. On the basis of the recent literature we used a retrospective assessment for our questionnaire to acquire patients' satisfaction [10].

We hope that our results on the basis of this HRQOL examination in patients with chronic tonsillitis may help otolaryngologists to decide more precisely about the indication for adult tonsillectomy. Furthermore our HRQOL long term results should help to ascertain the value of the two different surgical techniques in this special indication for tonsillectomy.

Methods

Study design

The study was performed in a retrospective manner at our institution including 600 adult patients (227 men, 373 women). We searched the procedural database of the Medical University Hospital, Innsbruck, Austria retrospectively for patients who had undergone tonsillectomy between 1.1.1998 and 31.12.2003. The mean age at the day of surgical intervention was 27.6 years (60 years range; 16–76 years).

All patients were evaluated after surgery. Data was collected by mail. All participants received a letter explaining the study and a questionnaire with a postage-prepaid return envelope one to six years after surgery. 227 of 600 Patients (38%) have replied and completed the questionnaire correctly.

Patients

All patients were treated in the period between January 1998 and December 2003. 92 patients underwent HT the rest underwent the CT procedure. Inclusion criteria were as follows: 16 years and older at the day of tonsillectomy owing to chronic tonsillitis or recurrent tonsillitis. Exclusion criteria were as follows: oropharyngeal malignancy, genetic disorders, chronic diseases, haemoglobin lower than 10.0 g/l and pregnancy. The initial diagnosis and decision for the tonsillectomy was made by several different otolaryngological surgeons with varying degrees of experience.

Surgical treatment

All procedures were carried out in general anaesthesia after orotracheal intubation. Tonsillectomy was performed either as "cold" or as "hot" tonsillectomy. The "cold" technique was done using scissors to incise the mucosa and a raspatorium to remove the tonsil from its fossa. Haemostasis was obtained with "spot" or "zonal" electrocautery or suture ligature. HT was performed with bipolar electrosurgical Metzenbaum scissors to incise the mucosa. To complete the dissection the inferior vessels and lymphoid tissue was divided with scissors in electrified mode [11]. Due to health care guidelines and billing modalities in Austria discharge occurred three days after surgery, although patients could be treated in an outpatient setting. The first postoperative control was performed one week after tonsillectomy. Surgical procedure was performed after obtaining an informed consent.

HRQOL measures

The Glasgow Benefit Inventory (GBI), a retrospective measure, was used to assess the long term outcome after tonsillectomy. In previous clinical studies the GBI was proved to be reliable, valid and responsive. The GBI consists of 24 core retrospective questions and is answered on a 5-point Likert scale, which indicates the amount of change due to a surgical intervention ("Since your operation, do you feel better or worse about yourself" much worse, a little or somewhat worse, no change, a little or somewhat better, much better). The GBI can be used at any stage and measures the HRQOL the person experiences and how health problems affect this. The GBI is sensitive to a change in health status brought about by tonsillectomy (The Glasgow Health Status Manual).

The questionnaire is divided into a total score and 3 subscales: a general health subscale (Questions:1, 2, 3, 4, 5, 6, 9, 10, 14, 16, 17 and 18), a social support subscale (Questions 7, 11, 15), and a physical health subscale (Questions: 8, 12, 13).The GBI scores were scaled in standard fashion to range from –100 to 100, with positive scores implying an improvement in HRQOL due to tonsillectomy, and negative scores implying a decrease in HRQL after surgery. A visual analogue scale (0 to 10) was given to measure the patient's general feeling related to their tonsil disease. In addition to the GBI we appended five questions about special problems after tonsillectomy. We asked about dysphagia, sore throat, throat infections, dysgeusia and problems with tongue movement. We also added questions about gender concomitant chronic diseases such as diabetes, bronchial asthma, metabolic syndrome and critical life event. In total our questionnaire consists of 30 items. The questionnaire is shown in the original English version in Appendix 1.

Statistical analysis

Differences between the two groups with different operation techniques were analysed using the Mann-Whitney-U-test for quantitative data and by the Chi-Square test for categorical data. Data are expressed as mean, standard deviation (SD) and 95% confidence interval (CI) or mean and range with statistical significance considered at $p < 0.05$. SPSS for Windows 11.5 software (SPSS, Chicago, Illinois, USA) was used for all analysis.

Results

A total of 600 adult patients met inclusion criteria. 227 of those returned completed surveys (HT: 40, CT: 187; total response rate: 38%). Most patients who failed to respond to the survey had moved out of the geographic area with no available forwarding address. The mean age was 30.1 years (range 17–74 years) in the CT group and 30.7 years (range 21–47 years) in the HT group. There is no significant age difference between the two groups (p = 0.524), allowing comparability.

We could not find a significant difference in the number of patients with concomitant chronic disease in either group. In the HT group 18% of all patients had chronic disease in the CT group 17% of all patients had chronic disease (p = 0.889). Our data revealed no statistical difference regarding critical life-events between the two groups (HT: 31%; CT: 27%; p = 0.635). The distribution of men and women in both groups was equal (34% men in the CT; 33% in the HT group [p = 0.835, table 1]).

Both study groups report positive values in the GBI total score as well as in all of the individual subscales of social support, physical health and general health. We could find no significant difference between the two groups (HT and CT) as regards the GBI total score and subscale scores (figure 1). The mean values for the different GBI scores were obtained as following: GBI total score was 15.8 (18 SD; 13.2–18.4 CI) for CT and 11.6 (15 SD; 7–16.3 CI; p = 0.214) for HT, general health subscale was 14.8 (19 SD; 12.1–17.5 CI) for CT and 8.7 (18 SD; 3.1–14.3 CI; p = 0.085) for HT, social support subscale was 2.7 (19 SD; 0–5.4 CI) for CT and 3 (18 SD; –2.6–8.6 CI, p = 0.941) for HT, physical health subscale was 31.8 (41 SD; 25.9–37.7 CI) for CT and 30.4 (43 SD; 17.1–43.7 CI p = 0.848) for HT.

Furthermore no significant difference was found for GBI total score and GBI subscale scores between males and females. Mean GBI total score for men was 16.5 (19 SD; 12.3–20.7 CI) for women 14.4 (17 SD; 11.7–17.1 CI) (p = 0.427). Mean general health subscale score was 13.8 (20 SD; 9.3–18.3 CI) for men and 13.8 (19 SD; 10.8–16.8 CI) for women (p = 0.989). Results for mean social support subscale scores were 6.1 (20 SD; 1.6–10.6CI) for the male cohort and 1.1 (18 SD; –1.8–4 CI) for the female cohort (p = 0.064). Analysis of the physical health subscale showed following scores: mean: 32.7 (34 SD; 25.1–40.3 CI) for men and 31.0 (45 SD; 23.8–38.2 CI) for women (p = 0.779)

Significant differences were found in GBI scores for patients with or without chronic disease (decrease of GBI scores). In the subgroup of patients with chronic disease mean GBI total score was 6.7 (21 SD; 0.7–12.7CI) and 16.6 (16 SD; 14.3–18.9 CI) in the group with no chronic disease (p = 0.004). Mean GBI score for the general health subscale was 6.5 (24 SD; –0.3–13.3CI) for the group with chronic disease and 15.0 (17 SD; 12.5–17.5CI) for the other group (p = 0.019). Patients with chronic disease have a mean score in the social support subscale of 4.6 (22 SD; –1.7 –10.9 CI) the other group has a mean score of 2.5 (18 SD; –0.1–5.1CI) (p = 0.527). Mean scores for the physical health subscale were 10.7 (45 SD; –2.1–23.5 CI) in the chronic disease group and

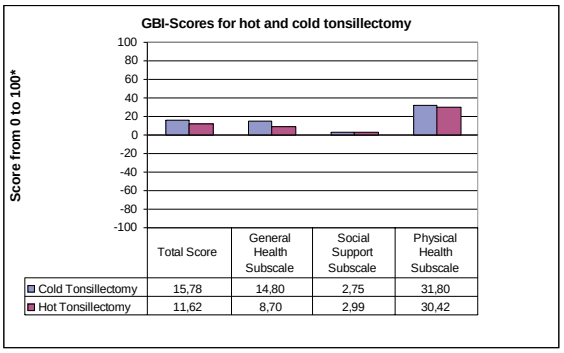


Figure 1

GBI Total Score and Subscales for hot and cold tonsillectomy (* Scores range from –100 to 100, where –100 means negative change and 100 means positive change in health status since operation).

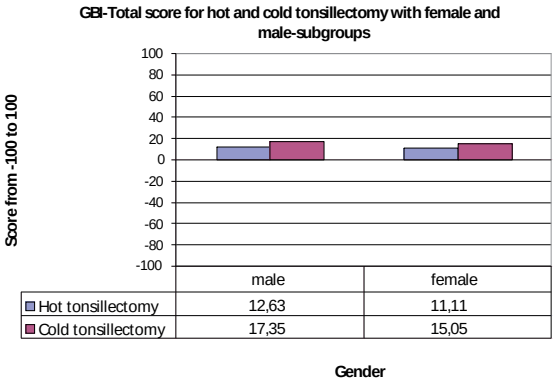
Table 1

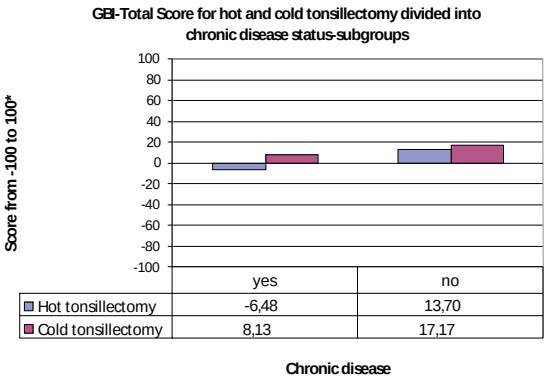
Sociodemographic and clinical characteristics of the total sample, as well as the two treatment groups CT and HT.

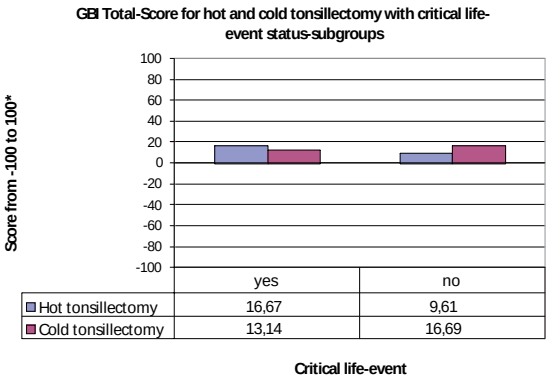
	Total		CT		HT		
Sociodemographic and clinical characteristic	**Mean (± SD) %**	**Min-Max**	**Mean (± SD) %**	**Min-Max**	**Mean (± SD) %**	**Min-Max**	**p-values**
Age at operation (years)	30.1±9.4	17–74	30.1±9.6	17–74	30.7±7.9	21–47	0.524
Gender Male	34%		34%		33%		
Female	66%		66%		68%		0.835
Years since operation							
1 year			19%		10%		
2 years			24%		15%		
3 years			19%		49%		
4 years			13%		18%		
5 years			8%		8%		
6 years			17%		–		0.465
Chronic disease (yes)	17%		17%		18%		0.889
Lifetime event (yes)	28%		27%		31%		0.635

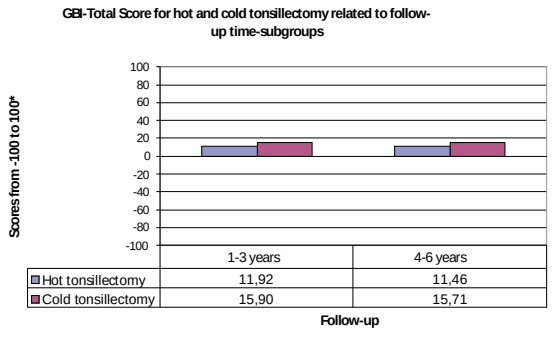
Figure 2

GBI Total Score for Gender, Chronic disease and Critical life-event (* Scores range from –100 to 100, where –100 means negative change and 100 means positive change in health status since operation).









36.0 (40 SD; 30.2–41.9 CI) in the other cohort (p = 0.001).

The mean time since operation was 3.2 (1.7 SD; 3.0–3.4 CI) years (range 1–6 years) for CT group and 3.0 (1.0 SD; 2.7–3.3 CI) years (range 1–5 years) for the HT group (p = 0.919).

We divided the follow-up period into two groups, the first group 1–3 years follow-up the second group 4–6 years follow-up. Mean GBI total score showed no significant difference between the first group 15.2 (17 SD; 12.4–18 CI) and 15.2 (19 SD; 11–19.3 CI) (p = 0.990). Mean general health subscale score for group one was 14.0 (19 SD; 10.9–17.1 CI), for group two 13.7 (19 SD; 9.6–17.8 CI) (p = 0.917). In the first group the mean subscale score for social support is 3.5 (19 SD;0.4–6.6 CI) compared to 1.8 (17 SD; –1.9–5.5CI) in the second group (p = 0.527). Mean physical health subscale score was 33.5 (42 SD; 26.6–40.4 CI) in group one and 28.5 (41 SD; 19.6–37.4 CI) in group two (p = 0.397). Graphic representations of the GBI total score results in these groups are shown in figure 2.

Furthermore the GBI scores in patients with critical life-event(s) and patients with no such event were compared. We found no significant difference between the two groups. In detail: mean GBI total score in patients with critical life-event was 13.7 (14 SD; 10.2–17.2 CI) and 15.5 (19 SD; 12.6–18.4 CI) in those without critical life-events (p = 0.535). The mean score for the general health subscale was 12.8 (13 SD; 9.6–16 CI) in the group in comparison to 13.8 (20 SD; 7.7–16.9) in the group with no critical life-event (p = 0.763). In the first group mean score for social support subscale was 3.7 (23 SD; –2.0–9.4 CI) versus 2.4 (17 SD; –0.2–5.0 CI) in the other cohort (p = 0.650). Mean physical health subscores were 23.9 (44 SD; 13–34.9 CI) compared to 33.6 (40 SD; 27.4–39.8 CI) (p = 0.120).

As proper covariate adjustment is needed to ensure reliable estimates of between group differences we also report multivariate analyses of covariances for all the above group-comparisons in table 2.

The results of the visual analogue scale evince no significant difference between HT and CT group. The mean was 77.8 (21.6 SD; 74.7–80.9 CI) for the CT group and mean: 72.6 (27.2 SD; 64.2–81 CI) for HT (p = 0.292).

Results of the GBI total score for HT and CT in relation to gender, chronic disease, follow up and critical life event are presented in figure 2.

We could not report a significant difference between HT and CT at the five added questions about special postoperative problems after tonsillectomy (dysphagia (p = 0.710), throat infections (p = 0.701), dysgeusia (p = 0.071) and problems with tongue moving (p = 0.683)).

Table 2
Multivariate analyses of covariance.

				Covariates (p-value)				
		Mean difference [95%CI]	**F (p-value)**	**Age**	**Gender**	**Years since operation**	**Chronic disease**	**Lifetime event**
CT vs. HT	GBI Total	–2.8 [–2.4 – 6.9]	0.32 (0.57)	0.11	0.20	0.95	0.01	0.36
	GBI General	–4.5 [–14.4 – 5.3]	0.83 (0.36)	0.03	0.65	0.77	0.03	0.63
	GBI Social	3.4 [–6.6 – 13.3]	0.45 (0.50)	0.71	0.11	0.81	0.43	0.83
	GBI Pysical	6.5 [–14.4 – 27.4]	0.38 (0.54)	0.69	0.39	0.37	0.11	0.49
Male- vs. Female	GBI Total	4.9 [–2.2 – 12.0]	1.9 (0.17)	0.12		0.01	0.36	0.17
	GBI General	2.2 [–5.1 – 9.5]	0.35 (0.56)	0.03		0.77	0.03	0.6
	GBI Social	5.7 [–7.8 – 13.3]	2.29 (0.13)	7.3		0.81	0.43	0.81
	GBI Pysical	6.3 [–9.6 – 22.3]	0.62 (0.43)	0.70		0.37	0.11	0.48
1–3 years vs. 4–6 years	GBI Total	–1.4 [–8.3 – 5.4]	0.18 (0.68)	0.13	0.18		0.01	0.37
	GBI General	-2.1 [–9.2 – 5.0]	0.35 (0.56)	0.03	0.58		0.03	0.64
	GBI Social	1.7 [–5.4 – 8.8]	0.22 (0.64)	0.81	0.12		0.41	0.79
	GBI Pysical	4.9 [–10.3 – 20.1]	0.41 (0.52)	0.66	0.43		0.11	0.44
Chronic disease vs. no chronic disease	GBI Total	–11.2 [–20.1– –2.4]	6.3 (0.013)	0.12	0.17	0.94		0.36
	GBI General	–10.1 [–19.2 – –1]	4.78 (0.03)	0.03	0.56	0.77		0.60
	GBI Social	–3.7 [–13 – 5.5]	0.63 (0.43)	0.73	0.13	0.81		0.81
	GBI Pysical	-15.7 [-35.1 – 3.6]	2.6 (0.11)	0.70	0.43	0.37		0.48
Life event vs. no life event	GBI Total	–3.3 [–10.4 – 3.8]	0.86 (0.36)	0.12	0.17	0.94	0.36	
	GBI General	–2.0 [–3.4 – 5.4]	0.28 (0.60)	0.03	0.56	0.77	0.03	
	GBI Social	–0.9 [–8.5 – 6.6]	0.06 (0.81)	0.73	0.13	0.81	0.43	
	GBI Pysical	–5.6 [–21.9 – 10.4]	0.5 (0.43)	0.70	0.43	0.37	0.11	

Discussion

Tonsillectomy is one of the most commonly performed surgical procedures worldwide [1]. In the paediatric patient population it is the most frequently performed operation. In contrast to paediatric tonsillectomy with evident indications for surgical intervention, there is an ongoing discussion on indications for adult tonsillectomy, especially in patients with chronic tonsillitis [12]. Indications for tonsillectomy in adults are suspicion of malignant disease, recurrent acute tonsillitis (according to the American Academy of Otolaryngology-Head and Neck surgery physician documentation of seven episodes in 1 year, five per year for 2 years, or three per year for three years), recurrent peritonsillar abscess, streptococcal carriage, haemorrhagic tonsillitis and chronic tonsillitis. Other less common indications are halitosis and obstructive sleep apnoea syndrome (as an adjunct to uvulopalatopharyngoplasty) [2]. Especially in patients with chronic tonsillitis there is a high psychological strain. Conservative therapy regimes, such as antibiotic therapy, are often unsuccessful. The result of this fact is the necessity of measuring patients HRQOL after tonsillectomy for the indication of chronic tonsillitis. Furthermore there has been a paradigmatic shift in medicine towards a "bio-psycho-social" health model including the patient as an active partner in

medical decision making [13]. When it comes to the assessments of medical outcomes the patient's view is as valid as the clinician's [14].

Our intention was to measure whether there is a difference in HRQOL after HT and CT. Until today only a few studies with a small number of patients have been carried out. Our enquiry was performed with a large number of patients. 600 patients who underwent surgery at our institution in five years were invited to complete our questionnaire. With a mean age of 27.6 years and a range of 60 years we could reach a wide spectrum of patients from adolescent to senior. The survey return rate was low, however comparable (38%) with other studies [4, 5].

We investigated the reported changes in HRQOL after surgery of the two cohorts, HT and CT. Both groups had no statistical significant differences in age, gender, chronic disease follow-up and critical life-events. Because of the homogeneity of the two terms we are able to compare both groups.

We used the Glasgow Benefit Inventory (GBI), a postintervention questionnaire, to evaluate the changes in HRQOL due to tonsillectomy. The GBI was specially developed to measure patients' change in HRQOL after otolaryngological interventions. The questionnaire is validated and well-studied [15]. The GBI represents a sensitive instrument in measuring retrospectively changes in patients HRQOL after surgical interventions, especially otolaryngological procedures. According to Fischer et al. we performed a retrospective assessment to provide information that was different from serial change data, being more sensitive and accurately correlating with patients' satisfaction.

We found a conspicuous improvement in all GBI scores after HT and CT. This indicates the beneficial impact of either HT or CT for patients with chronic tonsillitis. The benefit is more distinct in the general subscale and the physical health subscale than in the social support subscale. This result supports the speculation that tonsillectomy has an impact not only on the physical but also on mental health of patients suffering from chronic tonsillitis. The combination of these two findings causes an improvement in HRQOL. Our findings corroborate the results of Stanley et al. who showed by a five question interview of 60 patients that patients who have recurrent throat infections early tonsillectomy can improve postinterventional satisfaction, health and usage of medical resources. [3] In contrast to their work we used a validated and well studied instrument.

The mean follow-up time was 3.2 years for CT and 3.0 for HT. We found no difference in GBI scores in relation to the follow-up time, results are presented in figure 2. This finding suggests that independent of the time point of assessment participants do report similar GBI-scores. This could indicate that the effects of tonsillectomy are stable over time, suggesting an enduring effect of both CT and HT. There was no significant difference in GBI subscores between men and women. This result emphasises the finding that gender does not influence the HRQOL after CT or HT. [16] We could report a significant difference in GBI subscores in patients with coexistent chronic disease and/or incriminatory event. This shows that outcome after tonsillectomy is influenced by individual circumstances of each patient. As a consequence exact evaluation of the individual medical and social history of each patient might help to achieve better postoperative results in HRQOL. This could lead to a higher grade of satisfaction after surgical interventions in patients with chronic tonsillitis.

Our analysis of the data revealed no difference in GBI total score and subscales between patients who underwent HT or CT suggesting a similar long-term benefit for both procedures. This underlines the fact that the advantage of HT lies in the peri- and early postoperative period by means of decrease blood loss and operative time [9]. In our collective blood loss and operative time did not play a decisive role because all of our patients were older than 16 years, in good general health and had hemoglobin higher than 10.0 g/l. Furthermore HT increases pain in comparison to CT. Recapitulating HT in adult patients with chronic tonsillitis does not adduce a significant improvement in GBI scores and consequently of HRQOL compared to CT. For this reason the indication for HT in adult patients with chronic tonsillitis should be redefined[17]. Furthermore we could not find a difference in postoperative complications, such as dysphagia, dysgeusia and problems with tongue moving between HT and CT.

The limitation of this study is a potential recall bias, which is inherently associated with retrospective evaluation [18]. Although there is discussion in the HRQOL literature how to best assess change in HRQL, especially in regards of the phenomena of "response shift", retrospective measures of changes in HRQOL have been found to be sensitive to change and may correlate more strongly with patients´ overall satisfaction with the intervention [9, 19]. Retrospective assessments such as "then-tests" have been performed to determine "true" changes taking possible aspects of response shift such as "recalibration" into account [20]. A second limitation is the response rate of 38%, with no possibility for us knowing who did or did not answer. The low response rate could mean for example that those who were more satisfied with the operation were more likely to respond. However this response rate was comparable with previously published studies reporting response rates of 36% to 30% highlighting the difficulty of the retrospective assessment of satisfction with operation [4, 5]. One result of the low response rate was that the statistical power to detect differences for example between HT and CT was only 18%. In addition, due to the

fact that HT is a novel surgical approach, fewer patients were included.

Earlier studies showed a statistically significant correlation between GBI total score and the decrease in number of workdays missed before and after tonsillectomy [5]. A transfer of these data into our study would permit the suggestion that either hot or cold tonsillectomy will diminish the socio-economic disadvantage resulting of chronic Tonsillitis by improving HRQL (as measured by GBI).

Besides these individual and economic benefits, an evaluation of HRQOL offers the chance of a quality control.

We believe that both "hot" and "cold" tonsillectomy are an appropriate therapy for selected adult patients with chronic tonsillitis. Our theory is supported by the fact that both "hot" and "cold" tonsillectomy adduce similar lasting advancement of HRQOL. Future HRQOL investigations of patients with chronic tonsillitis under conservative therapy will help to fortify the benefit of surgical intervention in these patients.

Conclusion

Either cold or hot tonsillectomy provide an improvement in HRQOL in properly selected adult patients with chronic tonsillitis. The amelioration of HRQOL is long lasting and leads to improved patient satisfaction. There were no meaningful differences in HRQOL when comparing the two techniques. This positive impact of tonsillectomy in patients with chronic tonsillitis should be considered in clinical decision-making process for tonsillectomy.

Recapitulating ENT surgeons should be acquainted with both techniques for tonsillectomy to achieve an optimal perioperative as well as a satisfactory long-term result in patients with chronic tonsillitis.

Correspondence:
Ilona Schwentner M.D.
Department Of Otorhinolaryngology
Medical University Innsbruck
Anichstrasse 35
A-6020 Innsbruck, Austria
E-Mail: Ilona.Schwentner@I-Med.Ac.At

References

1 Derkay CS, Darrow DH, LeFebvre SM. Pediatric tonsillectomy and adenoidectomy procedures. AORN J. 1995;62(6): 887–904.
2 Darrow DH, Siemens C. Indications for tonsillectomy and adenoidectomy. Laryngoscope. 2002;112(8 Pt 2 Suppl 100): 6–10.
3 Mui S, Rasgon BM, Hilsinger RL Jr. Efficacy of tonsillectomy for recurrent throat infection in adults. Laryngoscope. 1998; 108(9):1325–8.
4 Bhattacharyya N, Kepnes LJ. Economic benefit of tonsillectomy in adults with chronic tonsillitis. Ann Otol Rhinol Laryngol. 2002;111(11):983–8.
5 Bhattacharyya N, Kepnes LJ, Shapiro J. Efficacy and quality-of-life impact of adult tonsillectomy. Arch Otolaryngol Head Neck Surg. 2001;127(11):1347–50.
6 Mann DG, St George C, Scheiner E, Granoff D, Imber P, Mlynarczyk FA. Tonsillectomy – some like it hot. Laryngoscope. 1984;94(5 Pt 1):677–9.
7 Leach J, Manning S, Schaefer S. Comparison of two methods of tonsillectomy. Laryngoscope. 1993;103(6):619–22.
8 Back L, Paloheimo M, Ylikoski J. Traditional tonsillectomy compared with bipolar radiofrequency thermal ablation tonsillectomy in adults: a pilot study. Arch Otolaryngol Head Neck Surg. 2001;127(9):1106–12.
9 Leinbach RF, Markwell SJ, Colliver JA, Lin SY. Hot versus cold tonsillectomy: a systematic review of the literature. Otolaryngol Head Neck Surg. 2003;129(4):360–4.
10 Fischer D, Stewart AL, Bloch DA, Lorig K, Laurent D, Holman H. Capturing the patient's view of change as a clinical outcome measure. JAMA. 1999;282(12):1157–62.
11 Isaacson G, Szeremeta W. Pediatric tonsillectomy with bipolar electrosurgical scissors. Am J Otolaryngol. 1998;19(5):291–5.
12 Burton MJ, Towler B, Glasziou P. Tonsillectomy versus non-surgical treatment for chronic / recurrent acute tonsillitis. Cochrane Database Syst Rev. 2000;(2):CD001802.
13 Engel GL. The need for a new medical model: a challenge for biomedicine. Science. 1977;196(4286):129–36.
14 Leplege A, Hunt S. The problem of quality of life in medicine. JAMA. 1997;278(1):47–50.
15 Robinson K, Gatehouse S, Browning GG. Measuring patient benefit from otorhinolaryngological surgery and therapy. Ann Otol Rhinol Laryngol. 1996;105(6):415–22.
16 Baumann I, Kucheida H, Blumenstock G, Zalaman IM, Maassen MM, Plinkert PK. Benefit from tonsillectomy in adult patients with chronic tonsillitis. Eur Arch Otorhinolaryngol. 2006;263(6):556–9.
17 Shinhar S, Scotch BM, Belenky W, Madgy D, Haupert M. Harmonic scalpel tonsillectomy versus hot electrocautery and cold dissection: an objective comparison. Ear Nose Throat J. 2004; 83(10):712–5.
18 Litwin MS, McGuigan KA. Accuracy of recall in health-related quality-of-life assessment among men treated for prostate cancer. J Clin Oncol. 1999;17(9):2882–8.
19 Sprangers MA, Schwartz CE. Integrating response shift into health-related quality of life research: a theoretical model. Soc Sci Med. 1999;48(11):1507–15.
20 Schwartz CE, Bode R, Repucci N, Becker J, Sprangers MA, Fayers PM. The clinical significance of adaptation to changing health: a meta-analysis of response shift. Qual Life Res. 2006; 15(9):1533–50.

Appendix

1. Has the result of the operation affected the things you do?
2. Have the results of your operation made your overall life better or worse?
3. Since your operation, have you felt more or less optimistic about the future?
4. Since your operation do you feel more or less embarrassed when you are with a group of people?
5. Since your operation, do you have more or less self-confidence?
6. Since your operation, have you found it easier or harder to deal with company?
7. Since your operation, do you feel that you have more or less support from your friends?
8. Have you been to your family doctor for any reason, more or less frequent, since your operation?
9. Since your operation, do you have more or less confidence about your job opportunities?
10. Since your operation, are you more or less self-conscious?
11. Since your operation, are there more or fewer people who really care about you?
12. Since you had the operation, do you catch colds or infections more or less often?
13. Have you had to take more or less medicine for any reason, since your operation?
14. Since your operation, do you feel better or worse about yourself?
15. Since your operation, do you feel that you have had more or less support from your family?
16. Since your operation, are you more or less inconvenienced by your health problems?
17. Since your operation, have you been able to participate in more or fewer social activities?
18. Since your operation, have you been more or less to withdraw from social situations?
19. Since your operation, do you have more or less problems with swallowing?
20. Since your operation, do you have more or fewer problems with tonsillitis?
21. Since your operation, do you have more or less sore throat?
22. Since your operation, do you have more or less with tasting?
23. Since your operation, do you have more or less problems with moving your tongue?
24. How old are you?
25. What is your gender?
26. In which year did you undergo surgery?
27. Do you live in Austria since birth?
28. Do you suffer of any chronic illness?
29. Since your operation, do you have any incriminatory event?
30. Please indicate by vertical line how you feel right now related to your tonsil symptoms.