



## QUALITY OF LIFE WITH CHRONIC TONSILLITIS IN ADULTS: A COMPARISON OF TONSILLECTOMY VERSUS CONSERVATIVE TREATMENT

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**ABSTRACT** **Background:** Chronic tonsillitis is a common pathology in Indian population. However, tonsillectomy is rarely preferred by adults owing to the anticipated post-operative pain and complications. Therefore, the benefits of tonsillectomy in adults needs to be established.

**Aim:** To evaluate the quality of life in adults with chronic tonsillitis undergoing tonsillectomy as compared to conservative treatment.

**Methodology:** A total of 64 patients (n=44, tonsillectomy; n=20, conservative treatment) from 18-50 years were enrolled in a prospective cohort study. Patients with quinsy and malignancy of tonsils, sleep apnea were excluded. Tonsillectomy was performed by dissection and snare method. Patients were asked to fill a questionnaire, before and one year after the procedure in order to evaluate the impact of the procedure on their quality of life. Post-operative improvement in Quality of life (QoL) was assessed by Wilcoxon-sign rank test and proportion test using R studio (v 1.2.5001). P value of  $\leq 0.05$  was considered significant

**Results:** Patients who underwent tonsillectomy had significantly ( $P < 0.05$ ) lower episodes of sore throat, fever and painful swallow after one year of the procedure, as compared to people undergoing conservative treatment. There was also a significant reduction ( $P < 0.05$ ) in the use of analgesics and antibiotics. Most patients (n=40) who underwent tonsillectomy were satisfied with the procedure and agreed that it had an overall positive impact of their lives.

**Conclusion:** Tonsillectomy provides relief from the symptoms of tonsillitis thereby improving the Quality of Life in adults. It can thus be advised as a treatment of choice in adults with chronic tonsillitis

**KEYWORDS :** Tonsillitis, Tonsillectomy, Quality of Life, Conservative Treatment

### INTRODUCTION:

Chronic tonsillitis is a common otorhinolaryngological disease and tonsillectomy continues to be one of the most common and standard surgical procedure for treating adults with this clinical entity.<sup>1,2</sup> Chronic Tonsillitis has an enormous physical and psychosocial impact in adults ranging from frequent attacks of sore throat, pain on swallowing, halitosis, multiple visits to physician, repeated antibiotic therapy and increased cost of treatment. Recurrent work absenteeism also results in a decreased economic productivity.<sup>4,5</sup>

Quality of life (QoL) is a measure of wellness which is influenced by social and physical factors.<sup>6,7</sup> Although, there is no standard definition of quality of life, researchers agree that QoL must be measured from the patients' perspective.<sup>8,9</sup> Reliable measurement, quantification and interpretation of QoL after tonsillectomy is of utmost importance as it can indicate the effectiveness of the procedure.<sup>10</sup> The benefits of tonsillectomy in terms of reducing the number of attacks and seriousness of each attack of tonsillitis need to be identified. A patient's decision to proceed with the surgery is influenced by the severity and frequency of attacks of tonsillitis. Many patients often choose to shun operation for the fear of anticipated post-operative pain and complications owing to lack of evidence of its efficacy.<sup>11,12</sup>

Indications for tonsillectomy vary in paediatric and adult population. In adults, tonsillectomy is primarily performed for chronic or recurrent tonsillar infections but the common indication of tonsillectomy in children is tonsillar hypertrophy with obstructive symptoms. Other indications for tonsillectomy include established or suspected malignancies and dysphagia related to the tonsils. The highest level of evidence for the efficacy of tonsillectomy in paediatric patients with recurrent tonsillitis is established but not in adults.<sup>13,14</sup> It is important to have a robust evidence in order to confidently state to patients whether tonsillectomy will improve their QoL or not.<sup>7</sup> Additionally, patients, doctors and health policy makers also should know the costs and benefits of tonsillectomy against conservative management and whether therapy can be better targeted to maximise benefits and minimise risks of surgery, hence maximising cost-effective use of resources. Thus the study was aimed at comparing the efficacy of tonsillectomy to conservative treatment on QoL in adults with chronic

tonsillitis by evaluating the symptom change, change of medication score and improvement in quality of life after tonsillectomy or conservative treatment before and after one year.

### METHODOLOGY:

A prospective cohort study was undertaken for a period of 24 months at Department of Otorhinolaryngology, at a tertiary care Centre in a city in Maharashtra, India, post the approval of Institutional Ethical Committee. Patients attending the ENT outpatient department, presenting signs and symptoms of chronic tonsillitis such as sore throat and painful swallow, aged between 18-50 years and willing to participate in the study were included. Patients with quinsy or previous history of quinsy, patients with obstructive sleep apnea and snoring, patients with suspected or proven malignancy of tonsils, pregnant patients, and patients with hemoglobin  $< 10$  g/dL were excluded from the study. A total number of 64 patients i.e. 44 who opted for tonsillectomy (referred to as case) and 20 who opted for the conservative treatment (referred to as control) were enrolled after obtaining an informed written consent. Before commencing the treatment procedure, each of the patients from both groups were asked to fill a questionnaire comprising of questions related to the severity and episodes of the tonsillitis they faced.<sup>15</sup> The procedure was carried out after the attack subsided by dissection and snare method, as described elsewhere.<sup>13</sup> Patients who did not opt for tonsillectomy were treated conservatively (antibiotics & anti-inflammatory drugs) after each attack of acute tonsillitis. After one year, the patients were followed up and asked to fill the questionnaire again.

Descriptive analysis was performed and presented on MS-Excel. Mean difference and significance between pre-operative and post-operative scores were here performed by Wilcoxon-Sign-Rank-Test and proportion testing was performed on R studio, version 1.2.5001. A P-value of  $\leq 0.05$  was considered significant.

### RESULTS:

The mean age of the patients in the control group was  $28.1 \pm 8.3$  years and the mean age of patients in the case group was  $26.8 \pm 6.4$  years. Gender distribution among the groups was balanced with 36% males, 64% females in the case group and 40% males, 60% females in the control group.

The symptomatic changes in tonsillitis, before and after the procedure in the case and control groups is represented in table 1. Significant changes were seen in the case group with respect to all considered variables (episodes of sore throat, painful swallow, fever, painful neck lymph nodes, P<0.05). No significant changes were observed in the control group.

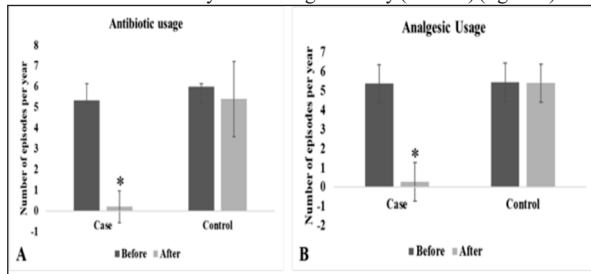
The occurrence of halitosis reduced significantly in patients who underwent tonsillectomy (P<0.05). In the control group however, the occurrence of halitosis remained unchanged in all patients (P=1).

**Table 1. Change In Symptoms Of Chronic Tonsillitis Before And One Year After Treatment In Case And Control Groups (number Of Episodes In One Year)**

Variables	Case		P-value	Control		P-value
	Pre- Op	Post -Op		Initial	Follow up	
Episode of sore throats	5.54 ± 1.13	0.25 ± 0.81	< 0.0001*	6.30 ± 1.49	5.95 ± 1.32	0.5979
Episodes of painful swallow	5.48 ± 1.08	0.27 ± 0.87	< 0.0001*	6.05 ± 1.36	5.45 ± 1.54	0.3544
Episodes of fever	5.36 ± 1.03	0.20 ± 0.76	< 0.0001*	6.15 ± 1.56	5.15 ± 1.66	0.0588
Episodes of painful neck lymph nodes	4.02 ± 0.45	0.0068 ± 0.45	< 0.0001*	3.50 ± 2.81	3.35 ± 2.68	0.2986

\*P significant at <0.05

Use of medications (antibiotics and analgesics) in patients who underwent tonsillectomy reduced significantly (P<0.05) (figure 1).



**Fig 1.** The change in the usage of (A) antibiotics and (B) analgesics in case and control groups in terms of number of episodes in a year, \* denotes significance (P<0.05).

Patients who underwent tonsillectomy presented positive post-operative outcomes in terms of their psychosocial conditions. There was a significant decline in the number of days taken off from work due to tonsillitis attack. (P<0.05). Withdrawal from social life due to tonsillitis episodes reduced in the case group (P<0.05), whereas it remained unaltered in the control group. Likewise, number of physician visits due to acute tonsillitis attacks almost diminished in the case group (table 2).

**Table 2. Distribution Of The Psychosocial Impact Of Tonsillectomy On Patients.**

Variables	Case (n=44)		P-value	Control (n=20)		P-value
	Pre-Op	Post-Op		Initial	Follow-up	
Number of episodes of physician visit	6.52 ± 2.61	0.43 ± 1.38	< 0.05*	9.80 ± 3.01	9.55 ± 3.3	0.8439
Number of days off from work	12.59 ± 3.95	0.54 ± 1.83	< 0.05*	11.95 ± 5.37	10.40 ± 4.17	0.1341
Percentage of patients presenting social withdrawal	77%	None	<0.05*	80%	80%	1

\*P significant at <0.05

Most patients who had undergone the tonsillectomy were satisfied with the procedure (P<0.05) and agreed that the procedure had positive impact, thereby improving the overall quality of life (QoL) of the patients (P<0.05). The patients who were treated conservatively, reported no change in the overall QoL (table 3).

**Table 3. Overall Impact Of Tonsillectomy On The Quality Of Life Of Patients.**

Variables	Case (n=44)	Control (n=20)
Level of satisfaction		
Not satisfied	0	15
Less satisfied	4	5
Satisfied	40*	0
Overall Impact		
Better	42*	0
Same	2	20*

\*Significant at P<0.05

**DISCUSSION**

Although, tonsillectomy is one of the most common surgeries but the data for the outcomes of the surgery, especially in adults is scarce and its effectiveness has been previously questioned<sup>14</sup> A MEDLINE search for tonsillectomy and QoL returned only 11 studies and 30 studies during 2008 and 2014 respectively.<sup>16</sup> A study reported a decrease in the number of sore throats after tonsillectomy, both after 14 months and 7 years. However, the change in the number of sore throat incidents between 14 months to 7 years was insignificant. Similarly, the intake of antibiotics and analgesics also declined, while significantly improving the QoL.<sup>16, 17</sup> This suggests that an overall positive effect of tonsillectomy persists, for a longer time-period, not just for a shorter duration. Different perspectives of the outcomes of tonsillectomy in the adult population have been studied in several studies. Randomized studies by Koskenkorva et al compared tonsillectomy with observation for recurrent tonsillitis. They demonstrated a decline in number of episodes and days of sore throat although no data regarding antibiotic usage was provided.<sup>18</sup> Similar trend was also reported in different study, where in there was a significant improvement in both primary (symptomatic changes in tonsillitis) and secondary (psychosocial lifestyle) outcomes in adults who underwent tonsillectomy, after six-month and twelve-month follow-up. Thus, there was an overall improvement in the QoL.<sup>15</sup> The effectiveness of tonsillectomy for recurrent tonsillitis based on patient completed questionnaires were have also been analysed which indicate that tonsillectomy is a useful treatment that improves QoL and not only reduces the number of sore throat events, but also reduces the expenditure of healthcare services like need for antibiotics and analgesics, number of days of absence from work.<sup>1,19</sup> The mean age of the patients in both of these studies were 28 years, which is in line with the present study. The QoL and overall well-being also improved post tonsillectomy in a young adult group (15-25 years).<sup>20</sup> A particular study also reported positive outcomes of tonsillectomy in both children and adults, post six months of the surgery.<sup>21</sup> Adult tonsillectomy could completely prevent sore throat and the majority of patients expressed satisfaction with its outcomes.<sup>10,22</sup> The outcome of the surgery was not affected by gender, also evident in other studies. Also, younger adult patients showed better outcomes than older adults.<sup>23</sup> Interestingly, there were two patients in the case group who did not notice an overall impact, postoperatively. However, the number is negligible and statistically insignificant, in comparison to the positive outcomes.

Bhattacharyya et al., a break-even time analysis was performed in order to evaluate the economic impact and influence of tonsillectomy in adults. They reported a short break-even time of 2.3 years for the recovery of tonsillectomy cost compared to the economic burden of physician visits, antibiotic consumption, and absence from work.<sup>24</sup> We conducted a break-even time analysis as well and found a similar recovery time for tonsillectomy cost of 2.7 years, suggesting an economic benefit for tonsillectomy.<sup>4</sup>

In a procedure with a high complication rate of up to 20% and a 25% risk of additional episodes after surgery, surgeons should discuss the advantages and disadvantages with their patients, as well as set up the expectations regarding the outcomes of tonsillectomy. Our study includes both patient reported outcomes and objective parameters such as primary care and ENT diagnoses of tonsillitis. We tried to address overall morbidity expressed as visits to physician and number of antibiotic course consumption. Both the parameters decreased significantly following tonsillectomy. Though the present study is prospective cohort study, it has several limitations like small sample size, one year follow up period. Also, we did not include immunological or inflammatory data on the post-tonsillectomy immune status of the patients. Analysis of these parameters will provide a stronger justification to provide patients to coerce them into surgery for significant QOL postoperatively.

**CONCLUSION:**

It appears that tonsillectomy in adult population is effective in decreasing the number and severity of tonsillitis episodes and might also have an economic benefit as compared to Conservative management with antibiotics & anti-inflammatory medicines.

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