



ASSESSMENT OF QUALITY OF LIFE BEFORE AND AFTER AN ADENOTONSILLECTOMY AMONG CHILDREN WITH HYPERTROPHIED TONSILS OR ADENOIDS

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ABSTRACT **Background:** Recurrent acute pharyngitis episodes with palatine tonsillar hypertrophy and adenoid hypertrophy leading to upper air way obstruction are commonly noticed in 6 to 15 year age group. Commonly these age group children visit to otorhinolaryngologists with complaints such as difficulty in swallowing, throat pain, and difficulty in breathing / mouth breathing history given by parents of patients. Because of such recurrent episodes patients' quality of life is deteriorated in terms of sleep disturbance, scholastic performance, emotional behaviour, physical fitness and long term effect as dentocranial abnormalities etc. **Method:** Comparison among a group of paediatric patients of hypertrophied tonsils /adenoids/both before and after tonsillectomy/adenotonsillectomy by using Obstructive sleep apnoea -18 questionnaire for quantifying change in quality of life among this group of patients. **Result:** 100 children were considered randomly within 6 to 15 years age group of which 64 underwent bilateral tonsillectomy and 36 underwent adenotonsillectomy in our hospital. All the components of quality of life as per OSA 18 questionnaire i.e. sleep disturbance, physical symptoms, emotional symptoms, day-time functions and caregiver's concern improved significantly after surgery. All the domains show statistically significant improvement at short term and long term improvement. **Conclusion:** The result of this study shows that there is significant improvement in quality of life especially in patients with sleep disturbance and with physical symptoms and care giver concern before surgery, supporting advantages of surgery adenotonsillectomy among 6 to 15 year group.

KEYWORDS :

Introduction

Recurrent episodes of sore throat leads to chronic pharyngitis with tonsillar hypertrophy and adenoid hypertrophy. Hence difficulty in swallowing/ throat pain and difficulty in breathing are the common problems with which paediatric age group patients with relatives visit to OPD frequently.

Throat pain /difficulty in swallowing leads to reduced food intake; which when becomes chronic presents as considerable weight loss in children, generalised weakness. Adenoid hypertrophy leading to difficulty in breathing is becoming a common cause for obstructive sleep apnoea among children. All these results in disturbed sleep at night with increased day time sleepiness, open mouth breathing leading to dentocranial malformations like high arched palate, emotional impact resulting in behavioural changes.

So to avoid long term complications surgical management i.e. bilateral tonsillectomy /adenotonsillectomy are needed. Though these are beneficial procedure there are only few studies done in India; justifying advantages of surgical intervention in terms of physical and mental health of patients.

The main purpose of this study was to study different signs and symptoms of tonsillar diseases and adenoid hypertrophy within 6-15 years of age group and to compare the quality of life of children undergoing adenotonsillectomy or tonsillectomy before and after the procedure on the basis of scoring of patient in quality of life questionnaire (derived from OSA 18) based on physical symptoms ,emotional symptoms, sleep disturbances, daytime and care giver concern.

METHODS

100 patients visiting to OPD and casualty with signs and symptoms of chronic tonsillitis or/and adenoid hypertrophy between age group of 6 years to 15 years are included in study. Detailed history of these patients obtained with the help of parents. General and ENT examination of these patients done. Written informed consent is taken in a language which they understand from parents of patient for being ready to be part of study. Patient is evaluated with all routine blood investigations along with bleeding time and clotting time. X ray nasopharynx and diagnostic nasal endoscopy done to confirm adenoid hypertrophy.

Parents were asked to fill Case record form here for 1 st time as pre surgical record for the comparison. This questionnaire is used as tool for measuring quality of life in children.

The questionnaire used here is OSA-18 comprises 20 questions divided into 5 domains. Each has a score of 1 to 7.

- I. Sleep disturbance - 4 questions
- II. Physical symptoms - 6 questions
- III. Emotional symptoms - 3 questions
- IV. Daytime function - 3 questions
- V. Care giver concern - 4 questions

A point scale is used ranging from 1 to 7 to grade relative severity of the symptoms in each question. And hence higher score is associated with severe and frequent symptoms and will result into worst quality of life. This questionnaire has total score range of 20 to 120. So preoperative total score of questionnaire will classify effect of adenotonsillar or tonsillar hypertrophy into

- Mild – score < 60
- Moderate – score between 60-80
- Severe – score > 120

Valid, informed, written consent of patient's parents was taken. All advantages, disadvantages and the risk factors were explained to them. Bilateral tonsillectomy done with clamp, crush, cut technique by using Eve's tonsillar snare and adenoidectomy by using adenoid curette.

Patient discharged on postoperative day 2 on oral antibiotics, analgesics and antacids and cold water gargles are advised after every 4 hourly and after every meal for next 7 days. Patient was called on postoperative day 7 for follow-up. Patient were then reviewed postoperatively at the end of 3 rd month and again at the end of 6 th month.

Clinical conclusion is drawn from the pre and postoperative data made available through questionnaire OSA 18 obtained from parents of patient.

Statistical Analysis-

Statistical analysis was performed using paired "t" test. A 'p' value of

<0.05 was considered as statistically significant. All statistical calculations were done using computer program Microsoft excel.

RESULTS

Out 100 cases under study 54 are male children and 46 are female children with Male : female ratio 1.17 : 1. Maximum cases i.e 35 out of 100 are from age group 8 to 9 years and minimum from age group 14 to 15 years with mean age = 9.66 +/- 1.82 years. 16 % cases in age group 6 – 8 years; 35% cases in 8 – 10 years of age group; 31% in years 10 – 12 of age group; 11% cases in age group 12 - 14 years and only 7 % cases in age group of 14 – 15 years.

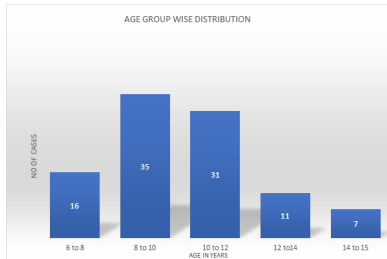
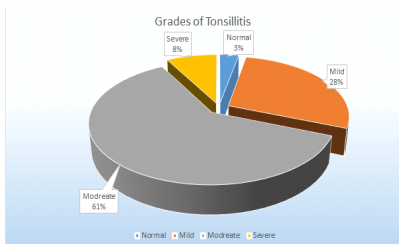


TABLE 1 : Distribution based on indication for surgery

| INDICATION FOR SURGERY | NUMBER | % |
|--|--------|------|
| 1. Adenoid hypertrophy with upper airway obstruction | 28 | 28% |
| 2. Obstructive sleep disorder | 19 | 19% |
| 3. Recurrent infections (peritonsillar abscess ,pharyngitis ,upper respiratory infections with ear diseases) | 9 | 9% |
| 4. Recurrent tonsillitis | 36 | 36% |
| 5. Cervical adenitis | 8 | 8% |
| Total | 100 | 100% |

As per observation most common indication for surgery is recurrent episodes of tonsillitis(36%) followed by adenoid hypertrophy with upper airway obstruction(28%). Out of 100 cases in 64% cases tonsillectomy is done and in 36% cases adenotonsillectomy is done.



Out of 100, moderate tonsillitis seen in 61% cases, mild and severe in 28% and 8% cases respectively.

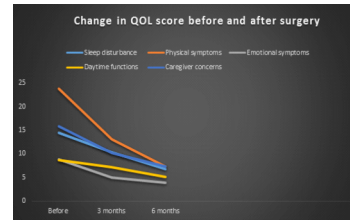
TABLE 3 : Changes in various domains of quality of life questionnaire in cases based on preoperative and postoperative data

| Overall results | | | | | |
|--------------------|----------|-------|------|------|---------|
| Variable | Group | Mean | SD | SEM | P value |
| Sleep disturbance | Before | 14.88 | 3.89 | 0.38 | <0.01* |
| | 3 months | 10.67 | 2.76 | 0.27 | |
| | 6 months | 6.71 | 2.01 | 0.20 | <0.01# |
| Physical symptoms | Before | 24.2 | 5.10 | 0.51 | <0.01* |
| | 3 months | 13.28 | 2.97 | 0.29 | |
| | 6 months | 7.36 | 1.62 | 0.16 | <0.01# |
| Emotional symptoms | Before | 9.23 | 2.67 | 0.26 | <0.01* |
| | 3 months | 5.21 | 1.53 | 0.15 | |
| | 6 months | 3.88 | 1.00 | 0.10 | <0.01# |
| Daytime functions | Before | 8.72 | 1.66 | 0.16 | <0.01* |
| | 3 months | 7.22 | 1.59 | 0.16 | |
| | 6 months | 5.10 | 1.50 | 0.15 | <0.01# |
| Caregiver concerns | Before | 15.21 | 4.25 | 0.42 | <0.01* |
| | 3 months | 10.02 | 1.95 | 0.19 | |
| | 6 months | 7.06 | 1.56 | 0.15 | <0.01# |

* p value between preoperative and postoperative (at the end of 3 month) data

p value between postoperative data at the end of 3 months and 6 months

According to overall observation all 5 domains of quality of life have improved significantly after tonsillectomy or adenotonsillectomy



DISCUSSION

It is important to evaluate children's QoL because it reflects individual sentiments towards physical, emotional, and social factors in their life and how these factors relate to their health. The OSA-18 is an evaluative, discriminative, and validated instrument to assess QoL in children with SDB, and it is the most widely used evaluation tool worldwide.

In this study ,as per observation most common indication for surgery is recurrent episodes of tonsillitis(36%) followed by adenoid hypertrophy with upper airway obstruction(28%), obstructive sleep disorder (19%), recurrent infections (9%), cervical adenitis (8%). Sleep-disordered breathing (SDB) affects from 7 to 17% of the pediatric population, and the symptoms range from primary snoring to obstructive sleep apnea (OSA).117 Most common indication for tonsillectomy was recurrent sore throat infection as observed by various studies. While obstructive sleep apnea (OSA) is common in children. Adenoidectomy and tonsillectomy are considered 1st line of management for OSA in otherwise healthy children over two years of age with adenotonsillar hypertrophy,as recommended in guidelines from the american academy of paediatrics and the american academy of otolaryngology and head – neck – surgery.122

In this study 61% children found with Grade 3 tonsillar hypertrophy. Grade 2 and grade 4 tonsillar hypertrophy seen in 28% and 8 % children. Other authors also noted large number of patients are mainly with grade 3 hypertrophy.

Mitchell et al. investigated in another study the long-term changes of QOL after surgery in children with OSA. The study population included 34 children with OSA documented by polysomnography. Caregivers completed OSA-18 survey before surgery (survey 1), 7 months after surgery (shot-term, survey 2) between 9 and 24 months after surgery (long term, survey 3). A Comparison of the short-term results from survey 2 with the long-term results from survey 3 showed some important differences. The scores for the domains of sleep disturbance and physical suffering are lower in survey 2 than in survey 3. These domains measure specific problems such as loud snoring, breath-holding spells, mouth breathing, and nasal discharge. It is likely that with time some of these symptoms recur but not to the extent that they were present prior surgery. 110

The Effect of Adenotonsillectomy on Quality of Life in Adults and Pediatric Patients – the study by Soheila Nikakhlagh . Fakhher Rahim done to evaluate the benefits, impact, and overall efficacy of tonsillectomy or 95 adenotonsillectomy on quality of life in patients with recurrent, chronic tonsillitis or adenotonsillar hypertrophy before and after surgery in adults and children. A multicenter, observational, retrospective study of all adults (14 years or older) and children who had undergone tonsillectomy in adults and adenotonsillectomy in children for chronic, recurrent tonsillitis or adenotonsillar hypertrophy. Parents were applied a questionnaire. The questionnaire referred to the symptoms and effects related to the disease previously to surgery (in the last medical visit before surgery) and the 6-month postoperative followup. The questionnaire was not necessarily applied by the same team which performed surgery. Patients were asked by same questionnaire to compare their symptoms 6-months period before and after tonsillectomy or adenotonsillectomy. Outcome measures included the frequency of tonsillitis per year, days off work (or school), doctor visits and feelings of well-being. 812 adults and

children were sent a questionnaire regarding their symptoms in the 6 months before and 6 months after surgery.

CONCLUSION

The result of this study shows that there is significant improvement in quality of life especially in patients with sleep disturbance and with physical symptoms and care giver concern before surgery, supporting advantages of surgery adenotonsillectomy among 6 to 15 year group.

The questionnaire filled by parents post operatively on short term and long term follow up is a proof for satisfactory improvement in quality of life in children after surgery and for the effectiveness of adeno tonsillectomy among children whenever it is indicated.

Hence this study concludes that tonsillectomy or adenotonsillectomy in children will have a great improvement in quality of life in children with better physical and emotional wellbeing and the results will be long lasting with less recurrence.

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