

## Correlation of Tonsillectomy with Palatine Tonsil Size

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**Abstract-** We aimed to investigate the correlation of tonsillectomy with palatine tonsil size and to compare the differences of tonsil size and the need for surgery in children and adults. Also we can predict the outcome of tonsillectomy. We measured tonsil sizes in (height and width) in 150 children and 35 adults with hypertrophy of palatine tonsils and we measured the mass of tonsils and then the data analysis. In both groups of children and adults, tonsil sizes were significantly correlated with the rate of tonsillectomy. Tonsil size of grade 3 and 4 were with a high tonsillectomy rate in adults but tonsil size grade 2, 3 and 4 had a high tonsillectomy rate in children. Tonsillectomy correlated with tonsil size in both groups children and adults. The rate of tonsillectomy increased proportionally with tonsil sizes in both groups children and adults.

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### Introduction

Tonsillectomy can be performed in both groups children and adults for recurrent infections, malignancy and other reasons (1), but in some cases tonsillectomy performed for airway obstruction and tonsils hypertrophy (2). In many patients with recurrent infections, tonsil hypertrophy present and tonsil size is one of the most important factors contributing to airway obstruction (3). Tonsillectomy with or without adenoidectomy are frequently used to eradicate airway obstruction in patients especially in children (4). Moreover simple tonsillectomy in properly selected adults with snoring and airway obstruction may be beneficial (5).

Tonsil size can help to predict success of rate of tonsillectomy in patients with tonsillar hypertrophy especially in children. Therefore, accurate evaluation of palatine tonsils is an important factor for the successful surgery of patients with airway obstruction (6). Clinically, we usually estimate tonsil size by asking a patient to open his or her mouth wide and then evaluating the extension of the tonsil to the midline. However, we sometimes find that preoperative subjective tonsil sizes do not agree with real palatine tonsil height, width and mass in both groups children and adults with hypertrophy of tonsils and symptoms of airway obstruction (7).

### Materials and Methods

The patients consisted of 150 children and 35 adults who tonsillectomy was performed for them from June 2005 to June 2010. Preoperative assessment and history for airway obstruction, sleep apnea in adults, mouth breathing and recurrent infections were performed. Preoperative, palatine tonsils sizes were classified.

Tonsil sizes classification performed was as following:

Grade 1= size 0: tonsils were absent or atrophied.

Grade 2= size 1: tonsils filled 0 to 25 percent of the oropharyngeal diameter.

Grade 3= size 2: tonsils filled 25 to 50 percent of the oropharyngeal diameter.

Grade 4= size 3: tonsils filled 50 to 75 percent of the oropharyngeal diameter.

Grade 5= size 4: tonsils filled 75 to 100 percent of the oropharyngeal diameter.

Grade 6= size 5: kissing tonsils that filled 100 percent of the oropharyngeal diameter and were coherent.

All surgeries were performed by the author at Razi Hospital, Tehran University of Medical Sciences (TUMS) in Iran. Routine tonsillectomy was performed without using cauterization under general anesthesia. Meticulous care was taken to avoid residual muscle tissue on the capsular surface during the separation of the tonsillar capsule from the underlying muscles. After

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tonsillectomy, the tonsils' height and width were measured by the height of tonsils (line from the upper pole to the lower pole) and the width of tonsils (a line perpendicular to the tonsil height). Also tonsils' mass was weighed with a scale in operating room soon after the surgery. Then, the data by use of a computer in SPSS program were analyzed and the results printed.

## Results

The mean ages of children at the time of tonsillectomy were 6/8 years old the mean ages for adults were 29/4 years old. A total of 275 tonsils for children and 62 tonsils for adults were included in this study.

In children 27 tonsils were grade 1, 49 tonsils were grade 2, 55 tonsils were grade 3, 53 tonsils were grade 4, 60 tonsils were grade 5 and 93 tonsils were grade 6.

When we compared the parameters such as tonsils' height, weight and width, we found that in both children and adults, tonsils' sizes is a significant parameter in tonsillectomies.

The tonsil size had a correlation with the rate of tonsillectomies that were 8 percent of tonsillectomies were in group 1, 14/6 percent of tonsillectomies were in group 2, 16/3 percent of tonsillectomies were in group 3, 15/7 percent of tonsillectomies were in group 4, 18 percent of tonsillectomies were in group 5 and 27/4 percent of tonsillectomies were in group 6.

## Discussion

This matter was proved in other studies, for examples in an article that was published in otolaryngology-head and neck surgery, annual meeting of the American meeting of otolaryngology-head and neck surgery on august 2008 and in another article that was published in otolaryngology-head and neck surgery, on January 2009, which stressed on the correlation between tonsillar hypertrophy and tonsillectomy.

We found that the rate of tonsillectomy was increased proportionally with tonsils' sizes in both groups children and adults with hypertrophy of tonsils.

We found that in most cases, rate of tonsillectomy had a statistical correlation with tonsil size based on grading from 1 to 6. However, tonsil size in both group children and adults may help to predict the success of rates of tonsillectomy preoperatively and tonsil size can be a significant parameter for tonsillectomy preoperatively. In patients with palatine tonsil hypertrophy, the larynx and pharynx, nose and paranasal sinuses must be examined for diseases such as septal deviation, polyps, hypertrophy of adenoid, that can influence the success rate of tonsillectomy. In conclusion, tonsillectomy correlated with tonsil size in both groups children and adults. The rate of tonsillectomy increased proportionally with tonsil sizes in both groups children and adults.

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