

Indications of Tonsillectomy and Adenoidectomy in Dr. Hasan Sadikin General Hospital Bandung

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Abstract

Background: Tonsillectomy is the intervention to take out the palatine tonsils either whole or sub capsular, while adenoidectomy is the intervention of extraction of the adenoid gland which is commonly done with curettage method. Both interventions are done to eliminate repeated infections and also obstructions due to inflammation and hypertrophy of the tonsils and adenoids. This study was conducted to examine the indications of tonsillectomy and adenoidectomy in the Departement of Otorhinolaryngology and Head Neck Surgery Dr. Hasan Sadikin General Hospital Bandung in the period of January 2009–December 2011.

Methods: A cross-sectional descriptive study was conducted in October–November of 2012 using 207 medical records of patients who had tonsillectomy and adenoidectomy executed in the Department of Otorhinolaryngology and Head Neck Surgery Dr. Hasan Sadikin General Hospital, Bandung in the period of January 2009–December 2011. Data collected were age, gender, main complaint, tonsil size, history of repeated infections, history of snoring as well as of Obstructive Sleep Apnea Syndrome (OSAS). The indication for tonsillectomy and adenoidectomy such as infection, obstruction and neoplasia was selected.

Results: The indications of tonsillectomy and adenoidectomy were infection at 106 (51.2%) patients, obstruction at 100 (48.3%) patients, and neoplasia at 1 (0.05%) patient.

Conclusions: The most numerous indications for tonsillectomy and tonsilloadenoidectomy in the Department of Otorhinolaryngology and Head Neck Surgery Dr. Hasan Sadikin General Hospital were infection.

Key words: Adenoid, adenoidectomy, indication, tonsil, tonsillectomy.

Introduction

Tonsillectomy, adenoidectomy, or tonsilloadenoidectomy are surgical procedures to treat repeated episodes of chronic infections and tonsillitis. This procedure is also done to eliminate symptoms of Obstructive Sleep Apnea Syndrome (OSAS).^{1,2} In some patients, the inflammation of tonsils can also involve the adenoids, or lymphatic tissues of the nasopharynx.

The involvement of inflammation of the adenoid can cause discomfort on the afflicted because of the addition to the infectious symptoms. Symptoms which arise in tonsillitis and adenoiditis are among others: throat pain, difficulty to swallow, high grade fever, obstructed nose, and also repeated cough and cold.³ In other conditions, OSAS causes

disturbance on normal ventilation in sleep due to prolonged partial obstruction as well as intermittent complete obstruction of the airway. This can be fatal, especially on children which can cause abnormalities in the neurodevelopment, growth disturbance, and cardiorespiratory functional failure.²

Chronic and hyperplastic forms of tonsil and adenoid can cause decrease of quality of life on the afflicted because of the decrease in the physiological function of an afflicted body.^{4,5} As such, appropriate treatment and attention is needed in this case. The management of this case can be non-surgical or surgical, in which non-surgical treatments often use antibiotics and analgesics. Surgical intervention can be in the form of tonsillectomy and adenoidectomy which can be done on patients who have fulfilled certain indications for the surgery, which commonly are: airway obstruction

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Table 1 Characteristics of Patients Based on Age and Sex

Characteristic	Frequency (n=207)	%
Age (years old)		
2-8	58	28
9-15	97	46.9
16-22	28	13.5
23-29	12	5.8
30-36	5	2.4
37-43	3	1.4
44-50	3	1.4
< 50	1	0.5
Sex		
Male	114	55.1
Female	93	44.9

and also history of repeated infections.⁶ Data from Cipto Mangunkusumo Hospital, Jakarta of this case showed a decrease in the surgical interventions from the year 1999–2003.⁷

Although generally, statistical data shows decline in the surgical intervention for tonsillectomy and adenoidectomy, this treatment is still regarded able to increase the quality of life of the patients and can still be a treatment of choice for the afflicted considering poor response of medicinal treatments on chronic cases and hypertrophy. And as antibiotics developed, it became one of the factors which may change the indication for surgery. Furthermore, data of indications for tonsillectomy and adenoidectomy are also needed so that patients know the indication for surgery from the most recent study, and thus patients indicated for the intervention will not be marginalized.

National data of tonsillectomy and adenoidectomy indications in Indonesia had not been reported, especially in West Java. The study was conducted to examine the indications for tonsillectomy and adenoidectomy in the Department of Otorhinolaryngology and Head Neck Surgery Dr. Hasan Sadikin General Hospital in the period of January 2009–December 2011.

Methods

A cross-sectional descriptive study was conducted in October–November of 2012 using 207 medical records of patients who had tonsillectomy and adenoidectomy executed

in the Department of Otorhinolaryngology and Head Neck Surgery Dr. Hasan Sadikin General Hospital, Bandung in the period of January 2009–December 2011. Data collected from medical record were age, gender, main complaint, tonsil size, history of repeated infections, history of snoring as well as of Obstructive Sleep Apnea Syndrome (OSAS). The indication for tonsillectomy and adenoidectomy such as infection was determined from the main complaint of patients, while obstruction was determined by history of OSAS and neoplasia was determined by complaints and tonsil biopsy were selected.

Results

There were 2155 patients in the Department of Otorhinolaryngology and Head Neck Surgery Dr. Hasan Sadikin General Hospital, Bandung in the period of January 2009 to December 2011 and 897 (42%) of them were tonsillitis and adenoditis patients. From those 897 patients, 23% or 207 of them had tonsillectomy or tonsilloadenoidectomy executed on them. The number of patients who were treated in 2009 was 114 patients, in the year 2010 it was 26 patients, and in the year 2011 it was 67 patients. From patients who were treated, 94 (44.7%) of them were intervened with tonsillectomy without adenoid gland extraction, 114 (54.8%) had tonsilloadenoidectomy and no standalone adenoidectomy was found.

The majority of patients were 9–15 years old (46.5%) and the least was >50 years old

Table 2 Indications for tonsillectomy or tonsilloadenoidectomy

Indications for Surgery	Frequency	%
Infections	106	51.2
Obstruction	100	48.3
Neoplasia	1	0.5

(Table 1). The average age of patients who had tonsillectomy or tonsilloadenoidectomy was 13.55, while the median was at 11, and a standard deviation of 8.7, with the youngest was at 2 years old and the oldest was 53. Most of these patients were male (55.1%), while female patients was 44.9%.

From all patients who had tonsillectomy or tonsilloadenoidectomy, 106 (51.2%) of them were patients with indications for surgery such as repeated infections, 100 patients (48.3%) had indication of airway obstruction, and 1 (0.5%) were with neoplasia indication (Table 2)

Table 3 showed that 200 (96.6%) of 207 patients were treated for a main complaint of repeated infections. In which the repeated infections category was the result of the grouping of several signs such as enlarged tonsils, sensation of obstruction in the throat, repeated cough and cold, swelling in the neck, obstructed nose, and pain when swelling. While 7 (3.4%) complained of snoring.

The Tonsil size of patients who had tonsillectomy and adenoidectomy were related to the indication of surgery. In which the tonsil size were determined by comparing the tonsil size with the oropharynx space. Here, size 0 indicates that the tonsil is inside

the fossa tonsillary, 1 indicates that the tonsil fills <25% of the oropharynx, 2 indicates that the tonsil fills 25–50% of the oropharynx, 3 indicates that the tonsil fills 50–75% of the oropharynx, and 4 indicates that the tonsil fills >75% of the oropharynx. Most patients had a tonsil size equivalent to grading T3 which was 147 patients (71%), T4 was 48 patients (23.2%), T2 was 10 patients (4.8%), and T1 was 1 patient (0.5%).

Discussions

In this study, it was found that the indications for tonsillectomy and adenoidectomy were infection with the highest percentage at 51.2%, obstruction at 48.3%, and neoplasia at 0.5%. This result is in agreement with the recommendation of the American Academy of Otolaryngology–Head and Neck Surgery that two of the most common indications found are repeated infections and airway obstructions such as sleep disturbance. However, the indications of patients in America were in opposite to those in Germany where the majority of tonsillectomy and adenoidectomy were executed because of airway obstruction.^{8,9}

This study showed that the majority

Table 3 Distribution of Main Complaint and Tonsil Size of Patients Who Had Tonsillectomy or Tonsilloadenoidectomy

Distribution	Frequency	%
Main Complaint		
Repeated Infections	200	96.9
Snoring	7	3.4
Tonsil Size		
T0	0	0
T1	1	0.5
T2	10	4.8
T3	147	71.0
T4	48	23.3
No Information	1	0.5

of patients who underwent tonsillectomy or tonsilloadenoidectomy were in the age category of 9–15 years old. This is similar to a study done in America where the patients who underwent tonsillectomy and tonsilloadenoidectomy were 15 years old or younger. A study in Pakistan also stated that this intervention was mostly done on patients who were 11–15 years old.¹⁰ But this is in contrast to Ibadan who stated that this intervention was done mostly on patients aged 0–5 years old.¹¹ This can be related to the immunological functions of tonsils which are active at the age of 4–10 years old and start to reduce after puberty.¹²

In this study, the patients who were treated with tonsillectomy and tonsilloadenoidectomy were mostly male. This study is similar to the ones conducted in Brazil and Finland in which the majority were male.^{2,10} However, this is in contrary with the studies done in America and Switzerland in which the majority of patients treated were female, this is thought to be caused by the difference in the average age of patients at time of treatment.^{2,13}

Repeated infections were the main complaint amongst patients who were to be treated with tonsillectomy and tonsilloadenoidectomy aside from snoring. This study yielded different result than the one conducted in Texas, United States of America which stated that the majority of patients were complaining of snoring, sleep apnea, and repeated infections were the least amongst these complaints.¹⁴

The size of tonsils of the patients in this study showed that the majority of them had tonsil sizes of T3 and T4. This is in agreement with the recommendation of the American Academy of Otolaryngology–Head and Neck Surgery which stated that patients with tonsil sizes equivalent to grade T3 and T4 were of primary indication to have tonsillectomy.¹

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