

Characteristics of Tonsil Patients Undergoing Surgical Procedures at Bhayangkara Hospital, Denpasar, January-June 2026

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Article history

Submitted: 2026/04/01; Revised: 2026/06/11; Accepted: 2026/07/13

Abstract

Tonsillitis is a common Ear, Nose, Throat, Head and Neck Surgery (ENT-BKL) disease that can develop into chronic tonsillitis, requiring operative measures such as tonsillectomy or adenotonsillectomy. The characteristics of patients undergoing surgical procedures need to be known as a basis for evaluating clinical services and management. This study describes the characteristics of tonsillitis patients undergoing surgical procedures at Bhayangkara Hospital, Denpasar, from January to June 2026. The study used a retrospective descriptive design utilizing secondary data from patient medical records. The sample was determined using consecutive sampling techniques according to inclusion and exclusion criteria. Analysis was conducted descriptively using frequency distribution and percentages. A total of 25 patients met the study criteria. Patients were predominantly male (56%), while women were 44%. The 3–20 year age group was the largest group diagnosed with chronic adenotonsillitis (36%) and chronic tonsillitis (36%). The 21–60 year age group was entirely diagnosed with chronic tonsillitis (28%). Tonsillectomy was performed in 64% of patients, while adenotonsillectomy was performed in 36% of patients based on clinical diagnosis. Patients were predominantly young, with a relatively balanced gender distribution. The choice of surgical procedure was based on the clinical diagnosis and age-specific tonsil and adenoid development.

Keywords

adenotonsillectomy, patient characteristics, tonsillectomy, chronic tonsillitis, ENT-BKL.



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INTRODUCTION

The tonsils are a pair of lymphoid tissues located on the right and left sides of the oropharynx, part of Waldeyer's lymphatic ring (Arambula et al., 2021; Masters & Lasrado, 2025). These organs play a crucial role in the body's defense system, particularly in childhood, as they serve as the first line of defense against microorganisms entering the respiratory and digestive tracts. Tonsils recognize antigens that enter the body and then stimulate an immune response through the

formation of lymphocytes and antibodies. This immunological activity makes the tonsils crucial in maintaining a balanced immune system. However, continuous exposure to antigens also makes the tonsils susceptible to inflammation, especially if the body's defenses are weakened or if recurrent infections occur. This inflammation of the tonsils is known as tonsillitis and is one of the most common conditions encountered in daily practice in the field of Ear, Nose, Throat, Head, and Neck Surgery (ENT-BKL). Tonsillitis is reported to be the most common ENT disorder after nasopharyngitis, with an incidence of approximately 3.8%.¹

Tonsillitis is an inflammatory process generally caused by bacterial or viral infections (Singh et al., 2023). Transmission of the disease can occur through droplets, the air (airborne), direct contact with contaminated hands, or close contact such as kissing. Based on the duration of the disease, tonsillitis is divided into acute and chronic tonsillitis. Acute tonsillitis is inflammation of the tonsils that lasts less than three weeks, while chronic tonsillitis is characterized by enlarged tonsils accompanied by recurrent infections or persistent inflammation over a long period. Chronic tonsillitis often causes recurring complaints that interfere with the patient's quality of life and may be an indication for surgical procedures such as tonsillectomy or adenotonsillectomy if conservative therapy no longer provides optimal results.²

The clinical manifestations of tonsillitis vary widely, ranging from sore throat, difficulty swallowing (dysphagia), fever, malaise, to enlarged cervical lymph nodes (Perry, 2021; Srinivasan & Raja, 2024). A physical examination generally reveals hyperemic, enlarged tonsils, and exudate in the form of a fibrous layer or pus in the tonsillar crypts. In chronic cases, recurrent inflammation causes structural changes in the tonsils, including scar tissue formation, crypt enlargement, debris accumulation, and persistent bacterial colonization. This condition not only increases the frequency of recurrent infections but can also lead to complications such as airway obstruction, obstructive sleep-disordered breathing, peritonsillar abscess, and reduced quality of life due to disturbances in eating, sleeping, and daily activities. ³ Therefore, appropriate diagnosis and management are essential to prevent complications and improve the patient's quality of life.

Tonsillitis remains a significant health problem in many countries. Although the World Health Organization (WHO) has not published specific global prevalence figures, it estimates that approximately 287,000 children under 15 years of age undergo tonsillectomy or adenotonsillectomy each year (Hikma et al., 2025; Spencer et al., 2025). Of these, 248,000 children (86.4%) undergo adenotonsillectomy, while approximately 39,000 children (13.6%) undergo tonsillectomy without adenoid

removal. 1 These data indicate that tonsillectomy remains one of the most frequently performed ENT surgical procedures in the pediatric age group. A study by Kraft et al. in the UK also reported an annual incidence of recurrent sore throats of 100 cases per 1,000 population, with a higher prevalence in children than in adults. 4 These facts illustrate that tonsillitis is not only a clinical problem but also impacts quality of life, the burden on healthcare services, and significantly increases treatment costs.

Age is a factor closely related to the occurrence of tonsillitis (Pankhania et al., 2021). Tonsil immunological activity begins to increase from around three years of age, reaching maximum activity during childhood, and then changing with age. Tonsils and adenoids tend to hypertrophy during childhood in response to high antigen exposure. After puberty, the lymphoid tissue gradually involutes, decreasing in size and activity. This physiological process makes children and adolescents more susceptible to recurrent tonsil infections than adults. 5 In addition to age, various other factors such as housing density, exposure to cigarette smoke, environmental hygiene, nutritional status, immune system, and a history of recurrent upper respiratory tract infections also contribute to the development of chronic tonsillitis.

The decision to perform surgery on a patient with tonsillitis is based not only on the presence of the disease but also on the patient's clinical characteristics, frequency of recurrence, degree of tonsil enlargement, adenoid involvement, and its impact on respiratory and swallowing functions (Rothrock, 2022). Therefore, information on the characteristics of patients undergoing surgery is crucial as a basis for evaluating health services and developing more effective management strategies. A description of the distribution of patients by age, gender, diagnosis, and type of surgery can help healthcare providers understand the pattern of cases treated and serve as a basis for planning ENT-BKL services.

Data on the characteristics of tonsillitis patients undergoing surgery at Bhayangkara Denpasar Hospital is still limited, especially for the most recent service period. This information is essential for evaluating the appropriateness of the diagnosis and the surgical procedure performed and for identifying patterns of patient characteristics requiring surgical intervention. Based on these conditions, this study aims to describe the characteristics of tonsillitis patients undergoing surgery at Bhayangkara Denpasar Hospital from January to June 2026, based on gender, age group, disease diagnosis, and type of surgery performed. The results are expected to provide information for the development of ENT-BKL services, support clinical decision-making, and serve as a reference for further research on the epidemiology and management of tonsillitis in Indonesia.

METHODS

This study is a quantitative study with a retrospective descriptive design. The descriptive approach was chosen because the study aimed to provide an overview of the characteristics of tonsillitis patients undergoing surgical procedures at Bhayangkara Hospital, Denpasar, without interfering with the variables studied (Clark-Carter, 2024; Johnson & Christensen, 2024). The retrospective design was used because all research data were obtained from the medical records of patients who had received healthcare services in the previous period, allowing the researcher to only conduct a search and analysis of the available data.

The study was conducted at the Ear, Nose, Throat, Head and Neck Surgery (ENT-BKL) Clinic of Bhayangkara Denpasar Hospital. Data collection was conducted in July 2026, while the data analyzed came from the medical records of patients who underwent tonsillectomy during the period of January to June 2026. Bhayangkara Denpasar Hospital was chosen as the research location because it is one of the referral hospitals that has specialist ENT-BKL services with a number of tonsillectomies and adenotonsillectomies that are representative enough to describe the characteristics of patients undergoing tonsillectomy procedures.

The study population was all patients diagnosed with tonsillitis and received services at the ENT-BKL Clinic of Bhayangkara Hospital, Denpasar, during the period of January to June 2026. The study sample was determined using a consecutive sampling technique, namely all subjects who met the research criteria were included sequentially until the entire eligible population during the study period was covered. This technique was chosen because it is suitable for retrospective studies using medical record data and allows all eligible data to be analyzed, thus minimizing selection bias.

The study's inclusion criteria included all patients diagnosed with chronic tonsillitis or chronic adenotonsillitis who underwent tonsillectomy or adenotonsillectomy at Bhayangkara Hospital, Denpasar, between January and June 2026 and had complete medical records. Exclusion criteria included patients diagnosed with tonsillitis who did not undergo surgery, patients with incomplete medical records, and patients with illegible data or missing important information required for the study. The variables observed in this study included the patients' demographic and clinical characteristics. Demographic characteristics consisted of the patients' gender and age group. Age was categorized into groups of 3–20 years and 21–60 years based on the distribution of the data obtained. Clinical characteristics included the disease diagnosis, namely chronic tonsillitis and chronic

adenotonsillitis, and the type of surgery performed, namely tonsillectomy (TE) and adenotonsillectomy (ATE). All variables were measured based on data recorded in medical records without any direct measurement of the patients.

The research instrument consisted of a data extraction sheet compiled by the researcher based on the study variables. The sheet was used to record information obtained from patient medical records, including research identification number, age, gender, medical diagnosis, and type of surgery performed. The use of a data extraction sheet aimed to maintain uniformity in the data collection process so that all necessary information could be systematically documented.

The research procedure began with obtaining research permission from Bhayangkara Hospital, Denpasar, in accordance with applicable regulations. After obtaining approval, the researcher identified all patient medical records that met the inclusion criteria during the study period. A selection process was then conducted based on the inclusion and exclusion criteria, and eligible data were recorded on a data collection sheet. All collected data was reviewed (edited) to ensure completeness and consistency before data processing began. Data processing was carried out through several stages, namely editing, coding, data entry, cleaning, and data analysis. The editing stage was carried out to check the completeness and accuracy of the data obtained. The coding stage aimed to assign a numeric code to each variable category to facilitate statistical processing. Next, the data was entered into the Statistical Package for the Social Sciences (SPSS) software. After the input process was complete, data cleaning was performed to identify possible input errors, duplicate data, or inconsistencies.

Data analysis was conducted univariately because the study's objective was only to describe the characteristics of patients undergoing tonsillectomy. Categorical variables were analyzed using frequency distributions and percentages, then presented in tabular form to facilitate interpretation of the results. The analysis was then explained narratively, comparing the study findings with previous research and relevant theories. This study used secondary data sourced from medical records and therefore did not involve direct contact with patients. All patient identities were kept confidential by not including names or medical record numbers in the research report. The data obtained were used only for scientific research purposes and are presented in aggregate form, preventing individual identification. Furthermore, the study was conducted after obtaining permission from Bhayangkara Hospital Denpasar and adhering to ethical principles of health research, namely respecting

data confidentiality, maintaining patient privacy, and using data responsibly in accordance with the research objectives.

FINDINGS AND DISCUSSION

Results

This study obtained a sample size of 25 individuals who met the inclusion and exclusion criteria. Table 1 shows the distribution of patients by gender: 14 were male (56%) and 11 were female (44%).

Table 1. Sample Frequency Distribution by Gender

Gender	Frequency	Percentage (%)
Man	14	56
Woman	11	44
n	25	100

Table 2 shows the distribution of age and diagnosis of tonsillitis patients who came to the ENT clinic at Bhayangkara Hospital, Denpasar, where 9 patients were found in the age range of 3-20 years who suffered from chronic adenotonsillitis (36%), 9 patients in the age range of 3-20 years who suffered from chronic tonsillitis (36%), and 7 patients in the age range of 21-60 years who suffered from chronic tonsillitis (28%).

Table 2. Sample Frequency Distribution Based on Age and Diagnosis

Age	Diagnosis	
	Chronic Adenotonsillitis	Chronic Tonsillitis
3-20 years	9	9
21-60 years	0	7

Table 3 shows the distribution of surgical procedures performed based on diagnosis. Sixteen patients with chronic tonsillitis underwent tonsillectomy (64%), and nine patients with chronic adenotonsillitis underwent adenotonsillectomy (36%).

Table 3. Frequency Distribution Based on Diagnosis and Surgical Procedure

Diagnosis	Surgical Action (%)	
	Adenotonsillectomy (ATE)	Tonsillectomy (TE)

Chronic Adenotonsillitis	64%	0
Chronic Tonsillitis	0	36%

Discussion

The distribution of patients by gender showed a slightly higher proportion of males than females, at 56% compared to 44%. This relatively small difference suggests that tonsillitis requiring surgery can occur in both sexes with almost equal likelihood. The absence of a significant difference indicates that gender is not a dominant factor in determining the need for surgery in patients with chronic tonsillitis or chronic adenotonsillitis. Other factors such as the frequency of recurrent infections, disease severity, response to conservative therapy, and the anatomical condition of the tonsils likely have a greater influence on the decision to undergo surgery.

These results are similar to Tamara's study at Dr. Rasidin Regional General Hospital, which reported a proportion of male patients of 51.4% and female patients of 48.6%. Sembiring's study at Prof. Dr. RD Kandou General Hospital also showed a nearly identical distribution, with 55% males and 45% females. This similarity in distribution patterns suggests that chronic tonsillitis is a disease that can affect both men and women, with no significant predisposition to one group. The small variations found between studies are likely influenced by sample size, population characteristics, environmental conditions, access to health services, and community habits in seeking treatment for upper respiratory tract infections.

The age distribution shows that the 3–20 age group has the largest number of patients undergoing surgical procedures. This group comprises equal proportions of patients with chronic adenotonsillitis and chronic tonsillitis, while the 21–60 age group is entirely dominated by chronic tonsillitis diagnoses. This pattern indicates that tonsillitis requiring surgical procedures is more common in children and adolescents. This condition aligns with the physiological development of the immune system, as the tonsils and adenoids act as active lymphoid tissues in recognizing antigens entering through the respiratory and digestive tracts. High immunological activity causes the tonsil tissue to experience more frequent stimulation, making it more susceptible to recurrent inflammation and ultimately developing chronic infection.

The dominance of the younger age group also supports Putri's research, which reported that tonsillitis sufferers under 20 years old accounted for 60% of all cases studied. These consistent results suggest that age is an important characteristic associated with the occurrence of chronic tonsillitis. Children and adolescents generally have high levels of social interaction, both at school and at home, increasing their risk of exposure to bacteria and viruses that cause respiratory infections. Repeated exposure to infections can lead to chronic inflammation of the tonsils, rendering conservative therapy ineffective, and surgery the recommended treatment option.

Adults still undergo surgical procedures, although fewer than younger patients. All adult patients in this study were diagnosed with chronic tonsillitis without adenoid involvement. This condition aligns with the physiological involution of the adenoids, which generally begins during puberty, making adenoid enlargement rare in adulthood. Palatine tonsils can still experience chronic inflammation due to recurrent infections, deep crypt formation, debris accumulation, and persistent bacterial colonization. These factors lead to recurrent complaints such as sore throat, dysphagia, halitosis, and impaired quality of life. Therefore, tonsillectomy remains the treatment of choice in adults with clear indications.

The distribution of surgical procedures based on diagnosis demonstrates a congruence between the patient's clinical condition and the surgical procedure performed. All patients with chronic adenotonsillitis underwent adenotonsillectomy, while those with chronic tonsillitis underwent tonsillectomy. This pattern reflects that the surgical procedure was determined taking into account the involvement of the affected organ and following the principles of ENT-BKL disease management. Adenotonsillectomy is chosen when inflammation simultaneously involves the tonsils and adenoids, while tonsillectomy is performed when the disease process is limited to the palatine tonsils.

The higher proportion of tonsillectomies compared to adenotonsillectomies indicates that chronic tonsillitis without adenoid enlargement remained the most common diagnosis requiring surgery during the study period. This finding may be explained by the process of adenoid involution that occurs with age, resulting in fewer cases of chronic adenotonsillitis than chronic tonsillitis. Furthermore, the decision to perform surgery also takes into account clinical indications, such as the frequency of recurrent infections, tonsil size causing airway obstruction, swallowing difficulties, sleep-disordered breathing, and failure of medication therapy to control symptoms.

Overall, the study results indicate that the characteristics of patients undergoing tonsillectomy at Bhayangkara Hospital, Denpasar, have a pattern consistent with the theory of lymphoid tissue development and various previous studies. The predominance of children and adolescents, a relatively balanced gender distribution, and the concordance between diagnosis and surgical procedures indicate that ENT surgery services have been implemented according to clinical indications. These findings illustrate that operative therapy decisions are not only based on the presence of disease, but also consider patient characteristics, disease course, and the physiological development of the tonsils and adenoids according to age. The results of this study can also serve as a basis for evaluating ENT-BKL services and a reference for future research with a larger sample size and more diverse clinical variables, thus producing a more comprehensive picture of the epidemiology of tonsillitis.

CONCLUSION

This study shows that the characteristics of tonsillitis patients undergoing surgical procedures at the ENT Clinic of Bhayangkara Hospital, Denpasar, during

the period of January–June 2026 were dominated by male patients, amounting to 56%, while female patients numbered 44%. Based on age group, the majority of patients undergoing surgery were in the age range of 3–20 years, with proportions of 36% diagnosed with chronic adenotonsillitis and 36% diagnosed with chronic tonsillitis, respectively. Meanwhile, patients aged 21–60 years were all diagnosed with chronic tonsillitis with a proportion of 28%. The results also show a match between the clinical diagnosis and the type of surgical procedure given. Patients diagnosed with chronic adenotonsillitis underwent adenotonsillectomy, while patients diagnosed with chronic tonsillitis underwent tonsillectomy. The distribution of surgical procedures shows that tonsillectomy was the most frequently performed procedure (64%), followed by adenotonsillectomy (36%). These findings indicate that the choice of surgical procedure has taken into account the patient's clinical condition and involvement of tonsil and adenoid tissue according to medical indications.

The age distribution of patients, which is predominantly in the children and adolescents group, is in line with the biological characteristics of the tonsils and adenoids, which have the highest immunological activity at that age, making them more susceptible to chronic infections requiring surgical intervention. Overall, this study provides an overview that the management of tonsil surgery at Bhayangkara Hospital, Denpasar, is in accordance with the clinical diagnosis and age characteristics of the patients. The results of this study are expected to serve as baseline data for the evaluation of ENT-BKL services and as a reference for further research with a larger sample size and a wider range of variables to obtain a more comprehensive picture of the epidemiology of tonsillitis.

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