Original Article

Evaluation of Clinical Results and Pathological Findings of Tonsillectomy Samples in People 16 Years and Younger

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ABSTRACT

The main indications for tonsillectomy are recurrent infection, pre-tonsillar abscess, and obstructive sleep apnea and suspected malignancy. Incisional biopsy or Excisional biopsy is needed when a tonsillectomy is examined for suspected malignancy. According to the above, the purpose of this study is to evaluate the clinical results and pathological findings of tonsillectomy samples in people 16 years and younger. This case control study was performed with the participation of 305 patients under 18 years of age who were candidates for tonsillectomy surgery; Samples obtained after surgery were measured using Brodsky criteria and their results were evaluated and compared with pathology results. Surgical indications for 102 patients with symmetrical tonsils, including 46 cases with chronic tonsillitis (1.45%), hypertrophy of the tonsils with obstruction in 24 cases (23.5%), and recurrent infections of the tonsils with hypertrophic palate in 32 patients (4.31). %) Was. Pathologically studied samples in the control group were reactivemphoid hyperplasia in 56 cases (9.54%), lymphoidhyperplasia with fibrosis in 24 cases (23.5%) and chronic tonsillitis in 22 cases (21.5%). Tonsillectomy with indication of chronic tonsillitis and recurrent tonsillitis in patients who are otherwise normal examination is secondary to benign hyperplasia or anatomical factors. Therefore, the presence of asymmetry without suspicious appearance factors and significant signs and symptoms and progressive enlargement of the tonsils and concomitant adenopathy and a history of malignancy or immunodeficiency do not suggest malignancy and have no diagnostic value.

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Introduction

Tonsils and adenoids can be affected by a variety of infectious or obstructive diseases. Each person must be examined separately for surgery. The following should be considered: a) the tonsils and adenoids are structurally separate but interdependent, and careful evaluation is necessary to determine appropriate action for each particular patient. B) There are certain relative or absolute barriers to any surgery on the tonsils and adenoids. C) In appropriate cases, surgical treatment can have a significant effect on the quality of life of a person with tonsillitis and adenoids [1-3].

Clinically, the greatest concern is the pathological diagnosis of tonsils and adenoids in the pediatric lymphoma population [4]. Tonsillectomy with or without adenoidectomy remains one of the most common surgical procedures performed. On the other hand, the concern to ignore the rare and unexpected cases of malignancy has led to the microscopic examination of all specimens of the palate and third tonsil in many centers [5].

Discussion about the value of pathological examination of a tonsillectomy and adenoidectomy specimens in children undergoing surgery for obstructive sleep apnea and recurrent tonsil infections. In addition, routine pathological examination of these samples is costly [6].

Other uncommon diseases that may affect the population of children with tonsillitis include other malignancies such as Langerhans' cell histiocytosis, lipid storage disease, and inflammatory granulomatosis. Without proper criteria for asymmetric specimens, there is no fixed standard for cases to be pathologically examined and it is an arbitrary process [7].

In the pediatric population, non-epithelial malignancies such as lymphoma often present with normal mucosa and asymmetry of the palatine tonsils (unlike in adults with squamous cell carcinoma, in which the tonsils are injured). During the examination of the patient, the size of the palate is recorded by the physician using a scale of +1 to +4. With +1 minimum, the tonsil tissue of the palate is located in the tonsillar cavity and in +4, the tonsil tissue of the palate extends to the midline [8,9].

Size scaling of both the left and right tonsils is performed using the +1-4 scale, which clinically determines the symmetry of the palate tonsils. In one study, only 48% of cases that were clinically felt to have asymmetry were corrected by a pathological examination to determine their asymmetry, and the tonsils were found to be symmetrical [10]. Therefore, in many cases, clinical examination did not reveal asymmetry, which is due to the placement of a tonsil in a more medial position in the tonsillar cavity or asymmetry of the tonsillar mucosa, and with pathological examination after surgery, their asymmetry can definitely be considered [11].

Some studies suggest that the criteria by which a specimen should be examined microscopically include asymmetry of the right palate relative to the left during examination of the appearance of the specimens. However, the criteria for this asymmetry are not well defined pathologically [12].

Unilateral tonsillar enlargement (UTE) is relatively common in children, even in the absence of malignancy or infection, and is clinically determined using quantitative scales [13].

In fact, in patients with or without cervical adenopathy and other signs of malignancy, it is difficult to determine the presence of tonsillar malignancy due to its size. The main indications for tonsillectomy are recurrent infection, pre-tonsillar abscess, and obstructive sleep apnea and suspected malignancy. Incisional biopsy or Excisional biopsy is needed when a tonsillectomy is examined for suspected malignancy. But when it comes to performing tonsillectomy solely for asymmetric enlargement of the tonsils due to the complications of tonsil enlargement without any other clinical findings, this is questionable. According to the above, the purpose of this study is to evaluate the clinical results and pathological findings of tonsillectomy samples in people 16 years and younger

Material and Methods

Study design: This case control study was performed on 305 patients who underwent tonsillectomy and adenotonsillectomy in Tabriz University of Medical Sciences during 2018-2020; done. In this study, 106 patients (44 girls and 62 boys aged 4-16 years with a mean age of 10 years) with asymmetry in tonsils who underwent tonsillectomy with a control group of 102 patients (40 girls and 62 boys aged between 16- 5 years with a mean age of 10 years) who were compared with tonsillectomy with asymptomatic tonsillar hypertrophy were selected. And there is no indication for surgery. Study participants entered the study in an accessible and consecutive manner by observing the inclusion / exclusion criteria.

Inclusion / Exclusion Criteria: Inclusion criteria included ages between 2 and 18 years, a candidate for tonsillectomy, and having symptoms of tonsillitis approved by a physician. Exclusion criteria included previous history of tonsillectomy and patients with weakened immune systems and coagulation disorders; Also, any patient with known risk factors such as cervical adenopathy, systemic signs and symptoms, fever, night sweats, dysphagia, weight loss, suspicious appearance of tonsils (presence of mass, wound or area with abnormal pigmentation), malignant history or Immune deficiency was excluded from the study.

Methods: The study variables included: age, sex, and complications of surgery. Findings from Brodsky's standard pathology, according to which:

++ If more than 75% of the airway is occupied by the tonsils. +3 if 75-50% is occupied by air and 2+ if 50-25% is occupied by air. +1 If less than 25% is occupied by air. All patients who entered the study underwent a complete clinical examination before surgery under the close supervision of the supervisor and all findings were entered in the questionnaire by the project manager. Then the clinical diagnosis was considered and the pathology questionnaire was completed after preparation. In clinical examination, tonsil size was assessed using Brodsky classification. Any difference of at least +1 between the left and right palate tonsils was assumed and recorded as asymmetric tonsils. Tonsillectomy was performed using dissection and Snare technique. The surgeon measured and recorded the size of both tonsils removed at their maximum length. Pathology report and clinical history were reviewed to show a significant and related pathology finding and clinical finding, and in an attempt to better identify asymmetry at the time of pathology evaluation, 106 samples were re-measured. Then the left and right tonsils were compared.

Statistical analysis: The collected data were entered into SPSS Ver 20 statistical software; Mean and standard deviation, frequency and percentage were used to display the information and Two-tailed paired student's t test was used to compare the obtained data. At all times, the value of P Value below 0.05 was considered significant.

Ethical considerations: After the approval of this plan in the ethics committee of Tabriz University of Medical Sciences (IR.TBZMED.REC.1398.1292), the objectives of the study were explained to the patients and after obtaining their informed consent, the study began. No costs were incurred by patients and participation in the rejection of this study was optional.

Results

Of the 305 patients who underwent tonsillectomy during the mentioned period, 106 patients (44 girls and 62 boys aged 4-16 years with an average age of 10 years) with asymmetry in the tonsils and 102 patients (40 girls and 62 boys with Ages between 5-16 years and mean age 10 years) were associated with tonsils. There was no statistically significant difference between the two groups in age, sex, surgical indication and type of surgery.

Indications for tonsillectomy in 106 patients with asymmetry including chronic tonsillitis in 50 patients (2.47%), obstructive tonsillar hypertrophy (sleep disturbance, snoring) in 18 patients (17%) and recurrent tonsil infections with hypertrophy in 35 patients (35%). 8%). Sixty-two samples (99.58%) were reactivemphoid hyperplasia,

lymphoidhyperplasia in 16 cases (15%) and chronic tonsillitis in 28 cases (4.26%) were on pathological examination.

Surgical indications for 102 patients with symmetrical tonsils, including 46 cases with chronic tonsillitis (1.45%), hypertrophy of the tonsils with obstruction in 24 cases (23.5%), and recurrent infections of the tonsils with hypertrophic palate in 32 patients (4.31). %) Was. Pathologically studied samples in the control group were reactivemphoid hyperplasia in 56 cases (9.54%), lymphoidhyperplasia with fibrosis in 24 cases (23.5%) and chronic tonsillitis in 22 cases (21.5%).

All but two cases in the asymmetric group had less than 25% asymmetry in clinical evaluation and physical examination. These two cases had a degree of asymmetry of more than 25%. In evaluating 106 asymmetric tonsils that underwent tonsillectomy, we used three methods to compare left and right ventricular tonsils with emphasis on 2 cases with a degree of asymmetry of more than 25%. No malignancy or abnormal histopathological findings were observed in the two groups.

The longest length of the right tonsil was similar to the longest length of the left tonsil in 22.96% of cases. Only 4 cases showed a difference of 1 cm or more between the longest left and right tonsils. Comparison of the maximum length ratios showed a significant difference in 2 cases with ratios of 4 and 5. In the rest, a ratio of the longest length less than 2 was observed. The volume ratio was less than 2 for most asymmetric populations for 92% and greater than 3 for the rest.

Discussion

Adenoidectomy and tonsillectomy are the most common surgeries performed on children. Asymmetry in the tonsils of the palate is not considered abnormal in terms of size differences. However, a tumor growth should always be considered as a differential diagnosis. In addition to malignancies, chronic infections such as tuberculosis, actinomycosis, recurrent inflammation, lipidstorage disease, benign tumors, and pathology in nearby organs may be the cause of unilateral large UTE tonsils [14].

Similarly, in a study with a control group, no malignancy was found in patients undergoing tonsillectomy who had some degree of asymmetry. This study showed that there is no significant difference in the size of the tonsils between the asymmetric and symmetrical groups. On the other hand, this study showed that the apparent asymmetry should be evaluated based on the tonsillar fossa. According to many researchers, asymmetric and unilateral size of the tonsils is generally the result of asymmetry of the anterior pillars of the tonsils [15,16].

In one study, researchers compared a group of children with unilateral enlargement of the tonsils to another group of children diagnosed with lymphoma. They found that 68% of children with lymphoma had systemic symptoms or cervical adenopathy, while the other group showed no symptoms or lymphoadenopathy. There was no statistically significant difference in measuring the maximum length of the palate tonsils and comparing them with each other and 22.96% of them were similar. This indicates that even in patients who are apparently asymmetric, this asymmetry is not at their maximum length. There are a number of sources that have examined the pathology of asymmetric tonsils, but none of these studies have rated or evaluated this asymmetry. A weight comparison of more than 50 mg is used to compare the tonsils. But it is not clear how valuable this work is. In our study, the ratios of length and volume of palate tonsils in 2 cases showed a significant difference, but in the majority of samples, the length ratio was less than 2 and the volume ratio was less than 2. Several studies have shown that pathological examination of tonsillectomy specimens at all ages is necessary [17–19].

In immunocompromised patients, the potential for malignancy and infection is significantly increased. In a similar study, approximately 10% of children undergoing liver transplant surgery developed post-transplant lymphoproliferative disorders in the head and neck, which is the most common site of involvement of the parent ring. Their clinical manifestation is bilateral tonsillar enlargement and stridor. Therefore, examination of the

adenoids and tonsils of these high-risk individuals should be considered to rule out a latent malignancy pathology [20].

In the present study, according to the obtained statistical findings, a specific pattern and criterion can be presented as the application of asymmetry or one-way tensile magnification. Gross or pathology of all samples is recommended along with 3D measurements. If examination of the samples after the operation shows a difference in length of more than 1 cm and a length ratio of less than 2 and a volume ratio of less than 2, there is no need for microscopic examination. If there is any evidence in favor of microscopic malignancy of the samples is necessary. If histological and pathological examination of the specimen is indicated, a portion of the specimen not placed in the fixative solution should be retained for flow cytometric studies [21].

Limitations

Pathology sampling by two different devices as well as by several different physicians was one of the limitations of this study. It is recommended that all specimens from tonsillectomy and adenotonsillectomy be examined for pathology to rule out various types of malignancies.

Conclusion

Tonsillectomy with indication of chronic tonsillitis and recurrent tonsillitis in patients who are otherwise normal examination is secondary to benign hyperplasia or anatomical factors. Therefore, the presence of asymmetry without suspicious appearance factors and significant signs and symptoms and progressive enlargement of the tonsils and concomitant adenopathy and a history of malignancy or immunodeficiency do not suggest malignancy and have no diagnostic value. Examination of all samples and their three-dimensional measurement by a pathologist based on the criteria presented in the study and, if necessary, microscopic examination of the samples will save time and money.

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