Original Article* / *Çalışma - Araştırma

Histopathologic examination of routine tonsil and adenoid specimens: Is it a necessary approach?

Rutin tonsil ve adenoid spesimenlerinin histopatolojik incelemesi: Gerekli bir yaklaşım mı?

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Objectives: This study aims to investigate whether it is necessary to perform histopathologic examination of the specimens of tonsillectomy and/or adenoidectomy.

Patients and Methods: In this retrospective and multicenter study, 1021 pediatric and adult patients (557 males, 464 females; median age 8 years; range 5 to 13 years) who underwent adenoidectomy and/or tonsillectomy were included. Of the patients, 809 (79.3%) were pediatrics, while 212 (20.7%) were adult. Age, gender, histopathologic diagnosis and risk for malignancy in the patients with malignant diagnosis were reviewed using present patient records.

Results: Adenotonsillectomy was performed on 396 patients (38.8%), tonsillectomy on 266 patients (26%) and adenoidectomy on 359 patients (35.2%). Of the 1021 patients, 1011 (99%) received a benign histopathologic diagnosis, while 11 (1%) receieved malignant diagnosis. Malignant diagnosis was present only in adult patients. All patients diagnosed with a malignancy had one or more preoperative risk factors. No unexpected malignant diagnosis was found in any of the patients without preoperative risk factors.

Conclusion: We concluded that histopathologic diagnosis may not be required for the patients without preoperative risk factors, particularly pediatric patients.

Key Words: Adenoidectomy; histopathologic examination; tonsillectomy.

Amaç: Bu çalışmada adenoidektomi veya tonsilektomi spesimenlerinin rutin histopatolojik incelemesinin gerekli olup olmadığı araştırıldı.

Hastalar ve Yöntemler: Retrospektif ve çok merkezli bu çalışmaya adenoidektomi veya tonsilektomi ameliyatı olan 1021 çocuk ve erişkin hasta (557 erkek 464 kadın; ortanca yaş 8 yıl; dağılım 5-13 yıl) dahil edildi. Toplam hastaların 809'u (%79.3) çocuk, 212'si (%20.7) erişkin idi. Hastaların yaş, cinsiyet, histopatolojik tanıları ile malign tanı konulan hastalarda malignite açısından risk faktörleri mevcut hasta kayıtları kullanılarak incelendi.

Bulgular: Hastaların 396'sına (%38.8) adenotonsilektomi, 266'sına (%26) tonsilektomi, 359'una (%35.2) adenoidektomi yapıldı. Histopatolojik tanı 1021 hastanın 1011'inde (% 99) bening, 11'inde (%1) malign idi. Yalnızca erişkin hastalarda malign tanı mevcuttu. Malign tanı konulan hastaların tümünde cerrahi öncesinde malignite açısından bir veya daha fazla risk faktörü vardı. Cerrahi öncesi risk faktörü taşımayan hiçbir hastada beklenmedik malignite görülmedi.

Sonuç: Adenotonsilektomi ameliyatı sonrası, özellikle çocuk hastalar başta olmak üzere, risk faktörü taşımayan hastalarda rutin histopatolojik incelemenin gerekli olmadığı sonucuna varıldı.

Anahtar Sözcükler: Adenoidektomi; histopatolojik inceleme; tonsilektomi.

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Tonsillectomy and adenoidectomy are among the most common operations performed by otolaryngologists on pediatric patients.[1,2] The routine indications for tonsillectomy and/or adenoidectomy include recurrent tonsillitis, adenotonsillitis, and airway obstruction caused by tonsillar hypertrophy and/or adenoid hypertrophy. Suspected neoplasm, dysphagia due to adenoid and/or tonsillar hypertrophy, peritonsillar abscess, and halitosis caused by tonsillar crypts are among the non-routine indications for adenoidectomy and/or tonsillectomy.[3,4] Histopathologic examination of all surgical specimens is often standard practice for establishing important diagnoses, such as malignancies, and for medicolegal purposes.

The aim of this study was to investigate whether it is necessary to send all the specimens of tonsillectomy and/or adenoidectomy for histopathologic analysis.

PATIENTS AND METHODS

This study was designed as a retrospective and multicenter study. In all clinics, all the specimens of tonsillectomy and/or adenoidectomy are routinely sent for histopathologic examination. A retrospective study review was performed on 1021 adult and pediatric patients (557 males, 464 females; median age 8 years; range 5 to 13 years) who underwent tonsillectomy, adenoidectomy, or adenotonsillectomy. The study was approved by The Ethical Committee of Cumhuriyet University, Medical Faculty. The records were reviewed for each patient's age, sex, and histopathologic diagnosis. In addition, we investigated and recorded whether patients with malignant histopathologic diagnoses had risk factors, such as a family history of cancer, presence of a neck mass, systemic symptoms, weight loss, constitutional symptoms, tonsillar lesions, firmness, asymmetry, current systemic disease, and/or immunosuppressive medication use.

Adenoidectomy and/or tonsillectomy specimens were directly stored in glasses with 10% formaldehyde and sent for histopathologic examination at the Pathology Department at our institution.

RESULTS

The baseline demographics and medical characteristics of the 1021 patients are shown in Table 1.

Adenotonsillectomy was performed on 396 (38.8%) patients, tonsillectomy on 266 (26%) patients, and adenoidectomy on 359 (35.2%) patients. Of the 1021 patients, 1011 (99%) had benign histopathologic diagnoses. None of the 809 pediatric patients received a malignant pathologic diagnosis. Of the 212 adult patients, 201 (94.8%) were pathologically diagnosed as benign and 11 (5.2%) as malignant. Thus, the overall incidence of malignant pathologic diagnoses was 11 out of 1021 (1%). Of the patients with malignant diagnoses, 10 out of 11 were diagnosed with lymphoma, and one was diagnosed with squamous cell carcinoma. The charts of the 11 patients with malignant diagnoses were further reviewed; all the patients had undergone tonsillectomy because of a suspected malignancy. All patients diagnosed with a malignancy had two or more preoperative risk factors. Palatine tonsil asymmetry and neck lymphadenomegaly were observed in all patients

Table 1. Baseline demographic and clinical characteristics of all patients

	n	%	Median (years)	Range
Age*			8	5-13
Male	557	54.5		
Females	464	45.4		
Pediatric age group (<16 years)	809	79.3	7	
Adult patient	212	20.7	27	
Operation				
Adenoidectomy	359	35.2		
Tonsillectomy	266	26		
Adenotonsillectomy	396	38.8		

* Median (Q1-Q3).

with a malignant diagnosis. Three of the patients had a family history of cancer. No unexpected malignant diagnoses were reached for any of the patients without preoperative risk factors.

DISCUSSION

In 1965, Weibel[5] was the first to speak against histopathologic examination during routine tonsillectomies. Histopathologic examination of routine tonsillectomy and/or adenoidectomy specimens does not usually change a patient's clinical course. A non-routine pathologic diagnosis is very rare given routine indications for adenotonsillectomy. Therefore, there is controversy regarding the necessity to routinely send tonsil and adenoid specimens for histopathologic examination.[6-9] Hospitals differ as to whether they routinely send tonsil and adenoid specimens for histopathologic examination. In most hospitals, for medicolegal purposes, histopathologic examination is performed on all adenotonsillectomy specimens as a standard practice, while in some hospitals, histopathologic examination is performed only for those patients presenting preoperative risk factors with clinical findings suspicious for malignancy.[7,10,11]

The histopathology of adenotonsillar tissue is used to diagnose adenotonsillar malignancies, such as squamous cell carcinoma and lymphoma. Adenotonsillar malignancy is rare and usually observed in patients with preoperative risk factors. However, since malignancy leads to serious consequences, caution is required with patients with preoperative risk factors, such as a family history of cancer, presence of a neck mass, asymmetric tonsils, systemic symptoms, weight loss, constitutional symptoms, tonsillar lesions, and firmness.[2,10,12]

Beaty et al.[13] retrospectively reviewed 453 patients over 18 years of age who underwent tonsillectomy. They reported that 25 of the patients had tonsillar malignancy, and of these patients, 23 had two or more preoperative risk factors, two patients had one preoperative risk factor, and tonsillar malignancy was not seen in patients who did not have any preoperative risk factors. Yasan et al.[14] retrospectively reviewed 1217 patients younger than 16 years who underwent routine adenoidectomy with or without tonsillectomy. They excluded patients with suspected malignancy. They operated on 30 of the patients twice and one patient three times for adenoid hyperplasia. Only one out of 1217 patients was found to have a malignant tumor (plasmocytoma). This patient had been operated on twice for adenoid hyperplasia. They concluded that the trauma resulting from primary adenoidectomy could have caused the development of plasmocytoma, and they argued that histopathologic examination is not necessary for routine adenoidectomy patients operated on due to classical clinical findings. Instead, histopathologic examination should only be performed in revision cases or cases with suspicious clinical findings. Felippe et al.[15] retrospectively reviewed histopathologic findings for 2103 patients who underwent tonsillectomy. They found malignancy in only four of the patients, all of whom had preoperative risk factors. Ridgway et al.[16] reviewed the histopathologic findings for 15.120 pediatric and adult patients with tonsillectomy. They did not find any unexpected histopathologic findings. They reported that the patients with malignancy had preoperative risk factors. Younis et al.[10] retrospectively reviewed 2.438 patients with adenoidectomy and/or tonsillectomy. Of these patients, 2.099 were in the pediatric age group and 339 were adult patients. Of the adult patients, 24 had squamous cell carcinoma and six had lymphoma. All patients with malignancies had preoperative risk factors. They reported that histopathologic examination was unnecessary, particularly for pediatric patients without clinical suspicion. Yasan et al.[14] retrospectively analyzed 1184 patients that underwent adenoidectomy. They performed a revised adenoidectomy procedure on 33 of the patients, and only found solitary plasmocytoma in one patient (3%). No unexpected pathology was observed in any of the patients. Erdag et al.[9] retrospectively analyzed 2.743 pediatric patients that underwent adenotonsillectomy due to chronic or recurrent infections and obstructive hypertrophy. None of the patients with a risk of malignant diagnosis were included in the study. They reported that none of the patients had unexpected malignancy.

In a survey conducted among the 111 members of the American Society of Pediatric Otolaryngology, Dohar and Bonilla[1] asked whether members routinely submit adenoidectomy and/or tonsillectomy specimens for histopathologic examination. Of the respondents, 56% reported performing routine histopathologic examinations;

42% reported performing gross examinations and using histopathologic examinations only in suspicious cases; and 2% reported performing no histopathologic examinations.

Some authors have argued that although the possibility of unsuspected malignancy is low, all specimens must undergo routine histopathologic examination. Ridgway et al.[16] found six pediatric patients with non-Hodgkin lymphoma among patients who underwent tonsillectomy with routine indications over a 13-year period. Five of six pediatric patients had one or more risk factors. They reported that all specimens must be examined histopathologically in routine tonsillectomy.

In our study, we examined 1.021 histopathology diagnoses established using adenotonsillectomy specimens over a seven-year period. We observed malignancy in only 11 patients, all of whom had presented one or more preoperative risk factors for malignancy. They were all adults, and no cases of unexpected malignancy were found in the pediatric age group.

In conclusion, the results obtained as to the necessity of histopathologic examination of routine adenotonsillectomy specimens were consistent with the review of the literature. We conclude that histopathologic diagnosis may not be required for patients, especially pediatric patients, without preoperative risk factors. Consequently, the labor and financial loss resulting from unnecessary histopathologic examinations could be avoided. Multidisciplinary, multicenter studies are needed to reach a definitive conclusion on this issue.

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