

Original paper

Histopathological Examination of Tonsillectomy Specimens in Karbala, Iraq

Haider M. Kadam, Ahmed Abdullah Alwan, Anwar Sadiq Al-Dahan

Al-Hussian Teaching Hospital, Karbala, Iraq

Abstract

Background: Tonsillectomy and adenotonsillectomy are the most common surgical operations done by E.N.T surgeon all over the world. No clear agreement worldwide on histopathological examination of tonsillectomy and adenoidectomy specimens when there is no suspicion of malignancy.

Objectives: To assess the real need of routine histopathological examination in tonsillectomy without signs or symptoms of malignancy.

Methods: Tow hundred-thirty-nine patients submitted for tonsillectomy because of different indications at Department of Otolaryngology, Al-Hussian Teaching Hospital, Karbala during the period 1st May 2016 to 30th September 2017, and histopathological examination of tonsillectomy specimens were done for all patients.

Results: A prospective case series study, total of 239 patients submitted to tonsillectomy, there were 135 (56.5%) males and 104 (43.5%) females patients (M/F 1.3:1). Regarding the histopathological examination of palatine tonsils, 208 (87%) patients presented chronic nonspecific tonsillitis; no patients with chronic specific tonsillitis; 29 (12.1%) patients with reactive hyperplasia; Eight of our patients (3.34%) had clinical suspicion of malignancy and only 2 (0.8%) patients had tumour as B cell lymphoma, one man 35 years old the other woman 40 years old

Conclusions: Histopathological examination of tonsillectomy specimens is indicated only when there is preoperative suspicion of malignancy. Naked-eye examination is a good substitute for histopathological examination, no cost and no time consuming.

Keywords: Tonsillectomy specimens, histopathological examination, routine histopathology, malignancy, hypertrophy.

Introduction

Tonsillectomy only and adenotonsillectomy are the most common surgical operations done by ear, nose, and throat (E.N.T) surgeon all over the world.^(1,2) The recurrent tonsillitis, obstructive sleep apnea, peritonsillar abscess, suspicion of malignancy, and halitosis are the prevalent indications for tonsillectomy^(3,4,5,6,7,8,9). The popular indication for tonsillectomy in the past was recurrent tonsillitis, while nowadays the obstructive sleep apnea has become the most common indication for tonsillectomy due to the increased use of antibiotics and the development of protective methods^(4,5). There is no clear unanimity on whether benign

looking tonsil and adenoids specimens should be examined histopathologically. The clinical evaluation for the need to perform histological examination in which cases in tonsillectomy or adenoidectomy and in both is gaining more importance, because of the cost of these histopathological examinations and the loss of effort power in the laboratory⁽¹⁰⁾.

Malignant tumors of the tonsil might be suspected clinically, but biopsy is required for definite histopathological diagnoses. Therefore, tonsillectomy is done for biopsy purposes in all patients with a suspicion of malignancy. In children the risk of occult malignancy was reported to be quite low⁽¹¹⁾, and tonsillar non-Hodgkin's lymphoma

*for correspondence email: awainat9@gmail.com

is the most important malignancy spotted⁽¹²⁾. The incidence of malignancy in adult patients after tonsillectomy varies from 2% to 10%⁽¹³⁾, and the squamous cell carcinoma is the most common tonsillar malignancy⁽¹⁴⁾. Diagnosis of tonsillar malignancy is very difficult when the tonsil looks normal with no palpable neck lymph nodes⁽¹⁵⁾.

The aim of this study is to recognize the real need for routine histopathological examination of tonsillectomy specimens in patients with no risk factors for malignancy.

Patients and Methods

A prospective case series study was carried out on a convenient sample of 239 patients, at E.N.T Department Al-Hussian Teaching Hospital, Karbala during the period 1st May 2016 to 30th September 2017. They were patients who were prepared for tonsillectomy for different indications; recurrent tonsillitis, obstructive sleep apnea, and suspicion of malignancy are the main indications for tonsillectomy.

A thorough history and follow up of patients were conducted focusing on patient's age, gender, tonsil size, cervical lymphadenopathy, halitosis, congested pillar, episodes of acute tonsillitis per year, history of fever, peritonsillar abscess, obstructive sleep apnea and snoring, suspicion of malignancy, and histopathological findings. Palatine tonsils size were graded according to the L. Brodsky classification, in grade 0 (0 – tonsils) inside the tonsillar fossa with no air obstruction; in grade I (1+ - tonsils) slightly out of the tonsillar fossa presenting 25% air obstruction; in grade II (2+ - tonsils) presenting 25-50% air obstruction; in grade III (3+ - tonsils) presenting 50-75% air obstruction; in grade IV (4+ - tonsils) presenting more than 75% air obstruction⁽¹⁶⁾.

Tonsillectomy under general anesthesia were done by our team for all patients using dissection technique. Specimens were immediately placed in sterile tube with 10% formalin and send for histopathological

analysis at Al-Hussian Teaching Hospital Lab. fixed with formalin and sectioned and stained with hematoxylin and eosin and examined using light microscopy. The pathology findings reported as chronic nonspecific tonsillitis, reactive hyperplasia, chronic specific tonsillitis, and benign and malignant neoplasms.

This research was approved by the Ethics and Research unit of Al-Hussian Teaching Hospital. Patients or their families signed an informed consent form before operation, after discussing with them the surgical procedure, anesthesia, and expected postoperative events. Further, the confidentiality of patient's information was assured.

IBM SPSS for window, version 24 was used for statistical analysis, quantitative data was expressed as mean and standard deviation (SD). Qualitative data was expressed as frequency (N.) and percentage (%) Chi-squared test was used for statistical analysis, and P value of less than 0.05 was considered statistically significant.

Results

A total of 239 patients submitted to tonsillectomy, there were 135 (56.5%) males and 104 (43.5%) females patients (M/F 1.3:1). The age range was 1.9 to 42 years, and the mean age is 10.07 (SD 7.8) year. Two-hundred thirteen (89.1%) patients were younger than 20 years and only 26 (10.9%) patients were older than 20 years. Indications were mainly due to recurrent tonsillitis and/or hypertrophy of palatine and pharyngeal tonsils. The demographic and clinical presentation of all patients as shown in tables 1, 2, 3. Regarding the histopathological examination of palatine tonsils, 208 (87%) patients presented chronic nonspecific tonsillitis; no patients with chronic specific tonsillitis; 29 (12.1%) patients with reactive hyperplasia; Eight patients (3.34%) had clinical suspicion of malignancy and only 2 (0.9%) patients had tumor as B cell lymphoma, one man 35 years old the other woman 40 years old as shown in (table 4).

Table 1. Age group association with tonsil size in tonsillectomy patients in Al-Hussian Teaching Hospital in Karbala/ Iraq (n=239)

Age group	Tonsil size and % of enlargement					total
	Normal size	25%	25-50%	50-75%	>75%	
1-10	7	25	44	40	62	178
11-20	2	13	9	7	4	35
21-30	1	6	5	1	3	16
31-40	0	1	5	2	1	9
41-50	0	0	1	0	0	1
total	10	45	64	50	70	239

Chi-square=24.54, p=0,001

Table 2. The distribution of tonsillitis recurrence in tonsillectomy patients in Al-Hussian Teaching Hospital in Karbala/ Iraq (n=239)

Tonsillitis rate	N.	percentage
< 4 times/ year	10	4.2%
4-6 times/year	138	57.7%
> 6 times/year	91	38.1%
total	239	100%

Table3. The presenting signs and symptoms in tonsillectomy patients in Al-Hussian Teaching Hospital in Karbala/ Iraq (n=239)

Clinical signs and symptoms	Yes N (%)	No N (%)
L.N	134 (56.1%)	105 (43.9%)
Halitosis	76 (31.8%)	163 (68.2%)
Congested pillar	132 (55.2%)	107 (44.8%)
fever	176 (73.6%)	63 (26.4%)
Peritonsillar abscess	1(0.41%)	238 (99.59%)
OSA/snoring	157 (65.7%)	82 (34.3%)
tumour	2 (0.9%)	237(99.1%)

Table 4. The association of age groups and histopathology in tonsillectomy patients in Al-Hussian Teaching Hospital in Karbala/ Iraq (n=239)

Age group	Histopathological types			
	Chronic N.S tonsillitis	Chronic specific tonsillitis	Reactive hyperplasia	tumour
1-10 y	159	0	19	0
11-20y	29	0	6	0
21-30y	13	0	3	0
31-40y	6	0	1	2
41-50y	1	0	0	0
total	208(87%)	0(0%)	29(12.1%)	2(0,9%)

Discussion

Among 239 patients, in this study there was a male predominance with a male to female ratio of 1.3:1 which corresponded with the general population ratio as mentioned in other studies⁽¹²⁻¹⁴⁾. The common age group in our study, was the first and second decade of life, and the majority of the cases in this study were children

(89.1%) this was in agreement with other studies^(17, 18, 19).

In the literatures, inflammatory lesion of palatine tonsil (chronic nonspecific tonsillitis) was the main histopathological diagnosis observed with a rate of 99%^(18,19) and this was similar to the finding in this study. The histopathological evaluation of the palatine tonsils is not a routine diagnostic method of recurrent tonsillitis, and its value remains controversial. Histopathological

examination of tonsillectomy specimens indicated mainly to rule out unexpected disease, especially low-grade non-Hodgkin's lymphomas and malignancy^(20,21). However, the incidence of unexpected clinically important diseases of the tonsil is low, though not extremely rare as mentioned by other studies^(20,22). Histopathological examination and diagnosis of uncertain disease may also be required in adult patients with or without risk factors^(23,24). Errilic, Aydin and Kocer concluded that while tonsillectomy is a frequently made operation but there is little information about the histological diagnosis of a tonsillar specimen⁽²⁵⁾. Williams and Brown presented that histopathological examination of all routine tonsils and adenoids for patients in the first decade of life is not indicated. Naked eye examination is still recommended⁽²⁶⁾. Beaty et al recommended that histopathological examination should be done for patients with certain risk factors⁽²⁷⁾.

Felippe et al.⁽²⁸⁾, presented in their study of more than two thousands adult and pediatric patients with tonsillectomy, where only four patients (0.19%) of malignancy were faced on histological examination; these with risk factors, tonsillar hypertrophy, and cervical lymphadenopathy. In the present study of 239 patients, only 2 cases of malignancy (0.8%) which were lymphoma; the affected patients had risk factors; asymmetric tonsillar hypertrophy, cervical lymph node enlargement and weight loss. No patient of unexpected malignancies was detected in the present study while the rates reported in other studies were: 0.18%,⁽⁸⁾ 0.07%,⁽²⁹⁾ and 0.006%.⁽³⁰⁾, this may be due to a small number of patients included in this study. Younis et al.⁽¹⁷⁾ stated that no malignancy in a sample of more than two thousand pediatric patients, while found 40 patients (11.8%) out of 349 adult patients, had malignancy, all patients with malignancy had preoperative risk factors. All those authors recommended that macroscopic examination is sufficient; histopathological examination of tonsillectomy specimens should only be done for

patients with preoperative risk factors. Oluwasanmi et al.⁽³¹⁾, concluded that histopathological examination of tonsillectomy specimens is needed for patients with no history of recurrent acute tonsillitis, those with big tonsils and those over age of 40 years.

Conclusions

Till now there is still argument among all Otorhinolaryngologist to send all tonsillectomy specimens for histopathology because of low rate of malignancy as reported by most previous studies. In this study, the rate of malignancy was also low (0.8%) and all patients affected had preoperative risk factors. Therefore, we advise that histopathologic examination is required only when patients have preoperative risk factors. Naked-eye examination is a good substitute for histopathological examination since it is cost effective and is not time consuming.

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