Original Research Article

Journal of College of Medical Sciences-Nepal, Vol-20, No.4, Oct-Dec 2024
ISSN: 2091-0657 (Print); 2091-0673 (Online) Open Access
DOI: 10.3126/jcmsn.v20i4.73084

Evaluating the Necessity to Perform Histopathologic Examination in Routine Tonsillectomy Specimens

Rajendra Nepali[1], **Tulika Dubey**[1], **Neeraj KC**[1], **Suman Poudel**[2], **Banita Gurung**[3]

[1]Department of Otorhinolaryngology & Head and Neck Surgery, Gandaki Medical College Teaching Hospital and Research Center, Pokhara, Nepal, [2]Department of Pathology, Gandaki Medical College Teaching Hospital and Research Center, Pokhara, Nepal, [3]Department of Pathology, Nepal Cancer Hospital and research center, Kathmandu, Nepal.

ABSTRACT

Background

Tonsillar diseases are common in adults and pediatric populations, and tonsillectomy is the most frequently performed surgery by Otolaryngology, Head and Neck surgeons. There is controversy over whether regular tonsillectomy specimens require histopathological examination. Healthcare resources conduct microscopic and histopathologic investigations so that malignancy is not missed and to prevent medicolegal proceedings. The purpose of this study is to ascertain whether a histological investigation of the removed tonsils is required or not.

Methods

A four-year retrospective chart review of adult and child patients who underwent tonsillectomies at the Department of Otolaryngology, Head, and Neck Surgery at Gandaki Medical College Teaching Hospital and Research center, Pokhara, Nepal, from January 2018 to December 2021 was included. The study sample included 173 patients whose postoperative tonsil specimens were routinely sent for histopathological evaluation to diagnose unexpected malignancy. Non-routine indications for tonsillectomy surgery were not included in our analysis. The data obtained included biodata and histopathological diagnoses.

Results

Among the 173 patients who met our inclusion criteria, 16(9.2%) were children and 157(90.8%) were adults. There were 63(36.4%) males and 110(63.6%) females. The histopathological diagnosis was chronic tonsillitis with hyperplasia (39.3%), chronic tonsillitis (26%), follicular tonsillitis (18.5%), and chronic suppurative tonsillitis (16.2%).

Conclusions

In the absence of risk factors, malignancy in excised tonsils is very rare; therefore, routine histopathological assessment is not necessary. This will help to escape the financial burden for patients and the waste of pathologists' time.

Keywords: histopathology; malignancy; tonsillectomy.

INTRODUCTION

Tonsillar diseases are common in adult and pediatricpopulations.[1] Tonsillectomy is one of the most commonly performedsurgeries by ENT surgeons for various indications in both childrenand adults. Indications include recurrent tonsillitis, peritonsillar abscess,obstructive sleep apnea, snoring, suspected neoplasms etc.[2] The necessity of submitting specimens for histological investigation in routine tonsillectomy cases is debatable, however it is preferable to do so because it may be simpler to identify infections and malignancy.[3-5] Tonsillar malignancy is becoming common, so it is important to performhistopathological examinations in cases of clinical suspicion of malignancy,but this leads to an unnecessary financial burden on the patient and waste of the pathologist's time. Duringthat period healthcare resources could be betterallocated to other specimens

Correspondence: Dr. Rajendra Nepali, Department of Otorhinolaryngology & Head and Neck Surgery, Gandaki Medical College Teaching Hospital and Research Center, Pokhara, Nepal. Email: drrajendra28@gmail.com, Phone: +977-9856023277.
Article received: 2024-04-09. **Article accepted**: 2024-06-5. **Article published**: 2024-12-31.

needing attention.6-7 Therefore,the histopathological examination of tonsillectomy specimen must be evaluated.Thus, this study aimed to identify the importance of histopathologicalevaluation of routine tonsillectomy specimens.

METHODS

A retrospective crosssectional study was conducted in the department of Department of Otolaryngology, Head and Neck Surgery of Gandaki Medical College Teaching Hospital and Research center, Pokhara, Nepal from January 2018 to December 2021. The proposal was approved by Institutional Ethical Committee (Ref. No. 164/079/080) of the Gandaki Medical College Teaching Hospital and Research center. Data were obtained from medical records of operation theater, out patient Department, record section and Pathology Department by using the semi-structured proforma. Patients with recurrent tonsil infection, symptomatic tonsillar hypertrophy, peritonsillar abscess as per consultant diagnosis were included in the study while tonsillar asymmetry, unilateral tonsillar hypertrophy, ulcer on tonsils and suspicion of malignancy were excluded. Histopathology findings were noted. The tonsil specimens, after the surgery, were transferred to the Department of Pathology in a labelled container with 10% neutral buffered formalin (NBF) with an attached request form. Registration of the specimen in the laboratory with a specific laboratory number was done. Gross visual inspection was done by a certified pathology assistant and grossing of the specimen was done by a consultant pathologist. The specimen was left overnight for tissue processing with the help of an automatic tissue processor. Before sectioning the tissue at 3 to 4 micrometer thickness with a semi-automatic rotatory microtome the specimen was embedded in paraffin wax to make a paraffin block. Slides were prepared and stained with H & E (hematoxylin and eosin) and other special stains, ZN staining (Ziehl Nelson Stain), Giemsa Stain, and PAS Stain (Periodic Acid Schiff), whenever required. The consultant pathologists and residents examined each slide; however, pathologist gave the final diagnosis. The data thus obtained was entered in Microsoft Excel sheet, which was further analyzed by using SPSS 16.0.

RESULTS

A total of 173 patients who met our inclusion criteria, were included in this study. The mean age was 28.39 years ranging from 8 years to 60 years Among them 16(9.20%) with a mean age of 12.63 years were children and 157(90.80%) with a mean age of 29.99 years were adults. There were 63(36.40%) male and 110(63.60%) female with a ratio of 1:1.75 (Figure 1).

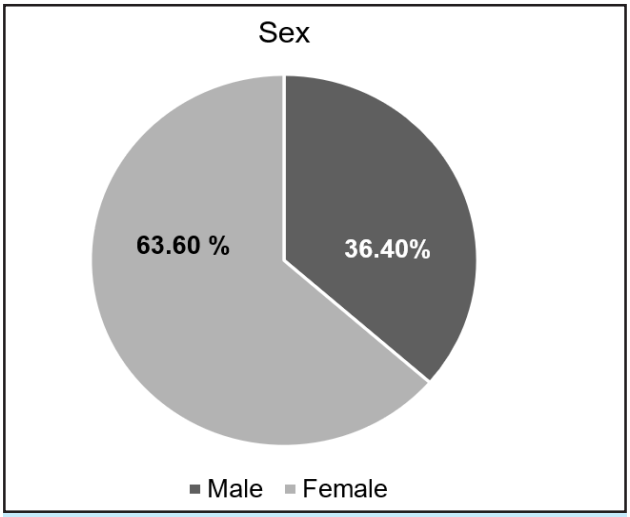

Figure 1. Sex distribution of patients who underwent tonsillectomy surgery.

The histopathological diagnosis was chronic tonsillitis with follicular hyperplasia in 68(39.30%), chronic tonsillitis in 45(26.00%), follicular tonsillitis in 32(18.50%) and chronic suppurative tonsillitis in 28(16.20%) respectively (Table 1).

Table 1. Distribution by histopathologic diagnosis and its frequency.

Diagnosis	Frequency (%)
Chronic tonsillitis with follicular hyperplasia	68 (39.30)
Chronic tonsillitis	45 (26.00)
Follicular tonsillitis	32 (18.50)
Chronic suppurative tonsillitis	28 (16.20)
Malignancy	-

DISCUSSION

One of the most routinely performed surgery is tonsillectomy.[8,9] After tonsillectomy histopathologic examination is generally performed but there is still a debate whether routine histopathologic examination of tonsil specimens is necessary or not. Some ENT surgeons send all tonsil specimens for routine histopathologic examination, some

send only specimens of adults and others send only in cases of suspicion of malignancy or some specific rare diagnosis.[10,11] Beaty et al.[2] defined the criteria for suspicious clinical history and findings regarding the risk factors for tonsillar malignancy, which included a history of head and neck cancer, tonsillar asymmetry, obvious lesions, ulcers or a hard consistency when the tonsil is palpated, unexplained weight loss or constitutional symptoms, and cervical lymphadenopathy. Initial symptoms are ipsilateral otalgia, difficulty moving the tongue, nasal voice, halitosis, and nasal reflux, in addition to dysphasia, which does not seem to be related to an acute illness. Additional symptoms, including drooling, bloody saliva, trismus, and changed vocal tones, suggest deep tumor involvement. Mohamed et al.[12] listed risk factors for malignancy in old age patients including constitutional symptoms, a history of smoking, consuming betel nut or paan leaf, a history of malignancy, and findings on examination including tonsil asymmetry, tonsil lesions, and neck masses. In our retrospective review of histopathologic results of 173 tonsil specimens, there were no any malignancy findings which is similar to previous studies.[13,14] The outcome of these studies might lead one to abandon routine histopathologic analysis of tonsil specimens and this has been discussed in previously in the literature.[9,11,15] The primary motive for doing a histopathologic examination of tonsil tissues, according to the majority of authors, is the worry of missing a malignancy. Although the incidence of unsuspected malignancy is low, it is not zero. Earlier research suggested a risk of unexpected malignancy up to 0% to 1% in both children and adults.[9,16,17] most study did not find unsuspected malignancy, and therefore, few surgeons suggest routine histopathologic analysis of tonsil specimens.[8,18-22] A review of the literature has shown that it increases the financial burden of the patients until clinically significant risk factors are immediately apparent for histological evaluation, rather than being beneficial to them, especially in developing countries.[18,22-23] However, because of potential legal concerns for doctors, it may be desirable to histopathologically investigate the tonsil specimen in cases where an unexpected cancer is discovered during regular evaluation.

CONCLUSIONS

The histologic assessment of tonsil specimens is required when preoperative suspicion is present and the findings indicate potential malignancy risk factors; this evaluation should not be disregarded. However, clinicians fear legal action for a missed diagnosis. Histopathologic evaluation of tonsil specimens done without suspicion of malignancy can cause financial loss for the patients and time loss for clinicians when they can focus on other important specimens in a developing country like Nepal. There isn't any unexpected malignancy in our study; however, some other studies do. We conclude that a meta-analysis is required in this particular circumstance.

Conflict of interest: None

Funding: None

REFERENCES

1. Guerra MM, Garcia E, Pilan RR, Rapoport PB, Campanholo CB, Martinelli EO. Antibiotic use in post-adenotonsillectomy morbidity: a randomized prospective study. Braz J Otorhinolaryngol. 2008;74(3):337-41. PMID: 18661005. [DOI] [PubMed]
2. Beaty MM, Funk GF, Karnell LH, Graham SM, McCulloch TM, Hoffman HT, et al. Risk factors for malignancy in adult tonsils. Head Neck. 1998;20(5):399–403. [DOI] [PubMed]
3. Anim J, Dawlaty E. Tuberculosis of the tonsil revisited. West Afr J Med 1991;10:194-7. PMID: 1911491. [PubMed]
4. Balica NC, Poenaru M, Preda MA, Boia ER, Burlacu ON, Horhat ID, et al. Primary tonsillar tuberculosis - case report. Rom J Morphol Embryol. 2019;60(1):267–71. PMID: 31263855. [PubMed]
5. Berkowitz RI, Mahadevan M. Unilateral Tonsillar Enlargement and Tonsillar Lymphoma in Children. 1999;108(9):876-9. [DOI]
6. Randall DA, Martin PJ, Lester. Routine Histologic Examination is Unnecessary for Tonsillectomy

or Adenoidectomy. The Laryngoscope. 2007;117(9):1600–4. [DOI]
7. Netser JC, Robinson R, Smith RD, Raab SS. Value-Based Pathology: A Cost- Benefit Analysis of the Examination of Routine and Non-routine Tonsil and Adenoid Specimens. American Journal of Clinical Pathology. 1997;108(2):158–65. [DOI]
8. Younis RT, Hesse SV, Anand VK. Evaluation of the Utility and Cost-Effectiveness of Obtaining Histopathologic Diagnosis on All Routine Tonsillectomy Specimens. The Laryngoscope. 2001;111(12):2166–9. [DOI] [PubMed]
9. Garavello W, Romagnoli M, Sordo L, Spreafico R, Gaini RM. Incidence of Unexpected Malignancies in Routine Tonsillectomy Specimens in Children. The Laryngoscope. 2004;114(6):1103–5. [DOI] [PubMed]
10. Strong EB, Rubinstein B, Senders CW. Pathologic Analysis of Routine Tonsillectomy and Adenoidectomy Specimens. Otolaryngology–Head and Neck Surgery. 2001;125(5):473–7. [DOI] [PubMed]
11. Dohar JE, Bonilla JA. Processing of Adenoid and Tonsil Specimens in Children: A National Survey of Standard Practices and a Five-Year Review of the Experience at the Children's Hospital of Pittsburgh. Otolaryngology-Head and Neck Surgery. 1996;115(1):94–7. [DOI] [PubMed]
12. Mohamad I, Hassan S, Salim R. The routine histopathological examination of tonsillectomy specimens at hospital universiti sains malaysia - a retrospective study and its implication. Malays J Med Sci. 2007;14(1):53–5. PMID: 22593652. [PubMed]
13. Dewil B, Jorissen M, Lemkens P. Routine pathological evaluation after tonsillectomy: is it necessary? B-ENT. 2006;2(3):103–8. PMID: 17067078. [PubMed]
14. Aydin A, Erkiliç S, Bayazit YA, Koçer NE, Ozer E, Kanlikama M. Relation between actinomycosis and histopathological and clinical features of the palatine tonsils: a comparative study between adult and pediatric patients. Rev Laryngol Otol Rhinol. 2005;126(2):95–8. PMID: 16180348. [PubMed]
15. Williams MD, Brown HM. The adequacy of gross pathological examination of routine tonsils and adenoids in patients 21 years old and younger. Human Pathology. 2003;34(10):1053–7. [DOI]
16. Alvi A, Vartanian AJ. Microscopic examination of routine tonsillectomy specimens: is it necessary? Otolaryngology--Head and Neck Surgery. 1998;119(4):361–3. [DOI] [PubMed]
17. Ikram M, Khan MA, Ahmed M, Siddiqui T, Mian MY. The histopathology of routine tonsillectomy specimens: results of a study and review of literature. Ear Nose Throat J. 2000;79(11):880–2. PMID: 11107690. [PubMed]
18. Ibekwe MU, Onotai L.O. Routine histopathologic evaluation of adenoidectomy or tonsillectomy specimens in Nigerian children: how relevant? J Med Med Sci. 2012;3(3):179–83. [Link]
19. Adoga A, Nuhu S, Ma`an D. Is routine histopathology of tonsil specimen necessary? African Journal of Paediatric Surgery. 2011;8(3):283. [DOI]
20. Pontes T, Braga E, Matos W, Rebechi F, Matsuyama C, Rebechi G. Are Histologic Studies of Adenotonsillectomy Really Necessary? International Archives of Otorhinolaryngology. 2013;17(04):387–9. [DOI]
21. Özbay I, Gençoğlu M, Balıkçı HH, Kucur C, Oğhan F. Histopathological analysis of tonsillectomy specimens: a report from Southeastern Anatolia. Kulak burun bogaz ihtisas dergisi. 2014;24(5):254–8. [DOI] [PubMed]
22. Adeyemo A, Okolo C, Ogunkeyede S. Evaluation of Histopathology Examination of Routine Tonsillectomy and Adenoidectomy Specimens in Developing Countries. Journal of Pediatric Sciences. 2011;3(3):1-5. [Link]
23. Chow W, Rotenberg BW. Discontinuing routine histopathological analysis after adult tonsillectomy for benign indication. The Laryngoscope. 2015;125(7):1595–9. [DOI] [PubMed]

Citation: Nepali R, Dubey T, KC N, Poudel S, Gurung B. Evaluating the Necessity to Perform Histopathologic Examination in Routine Tonsillectomy Specimens. JCMS Nepal. 2024; 20(4): 356-59.