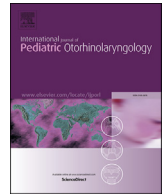




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Routine pathologic examination of tonsillectomy specimens: A 10-year experience at a tertiary care children's hospital[☆]



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ABSTRACT

Objective: To review histopathologic diagnoses from tonsillectomy specimens and determine whether routine pathologic exam is necessary.

Methods: Pathology reports of patients undergoing tonsillectomy from 2005 to 2014 at our pediatric tertiary care hospital were reviewed. Histopathologic diagnoses were recorded with special attention to identification of malignancy.

Results: A total of 8807 paired tonsil specimens were sent to pathology over a 10-year course. Gross analysis was performed on all. Microscopic histopathologic analysis was performed on 612 (6.95%) specimens with all but one demonstrating strictly reactive lymphoid hyperplasia. The single specimen (0.16%) demonstrated follicular hyperplasia with focal necrotizing granulomatous lymphadenitis without organisms identified on special staining. The surgeon requested pathologic diagnosis to rule out lymphoma in 4 of 8087 (0.05%) of the specimens. No malignancies were identified. The approximate charges for gross examination of a paired tonsillectomy specimen and microscopic examination were \$136.10 and \$294.54, respectively. Over the 10 year period of the study, total charges were estimated at \$1,115,340 (gross) and \$180,258 (microscopic).

Discussion: Microscopic analysis of tonsil specimens is unlikely to identify abnormal pathology that changes patient management. This study suggests that neither gross nor microscopic pathologic examination of tonsillectomy specimens is necessary on a routine basis. Histologic analysis of tonsils should be requested only on a case by case basis when clinical suspicion for malignancy is high. Avoiding routine pathologic exam of tonsils may be cost effective and medically safe.

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1. Introduction

Tonsillectomy is the second most common pediatric ambulatory surgical procedure performed in the United States with 530,000 pediatric tonsillectomies performed in 2006 [1]. Today, the focus of healthcare delivery revolves around.

Decreasing costs in order to increase value. As such, many measures have been examined to decrease costs associated with

common procedures, such as tonsillectomy. One potential approach to limit expenses associated with tonsillectomy includes evaluating the need for routine pathologic examination of all tonsil specimens.

The need for routine pathologic examination can be questioned, as the majority of tonsil specimens are benign. Thus, many argue that the costs and labor outweigh the benefits of pathologic examination. However, malignancy has been diagnosed in specimens from patients without suspicion for cancer diagnosis. Randall et al. [2] reported 6/13,457 (0.044%) pediatric tonsil specimens were diagnosed with malignancy in their literature review. However, only 2/13,457 (0.015%) were diagnosed with occult malignancy, as the other 4 had signs or symptoms concerning for cancer. Additionally, Booth and Wang [3] reported 2 out of 740 (0.27%) pediatric patients diagnosed with occult malignancies in their literature search in 2013.

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Given the conflicting information, no past or present consensus exists regarding the need for routine pathologic examination of tonsil specimens. Dohar and Bonilla [4] conducted a survey to the American Society of Pediatric Otolaryngology, which revealed that 56% of institutions sent their tonsil specimens for gross and microscopic pathologic examination in 1996. At that time, 42% of institutions sent specimen for gross examination only, while only 2% did not send tonsils for any form of pathologic review. A follow-up survey performed by Strong et al. [5] in 2001 was sent to members of the American Academy of Otolaryngology Head and Neck Surgery and revealed a trend from 1989 to 1999 towards sending tonsil specimens for gross examination only. The primary explanations for the change in practice were cost and data published in supporting literature in 29% of the surveyed population, with supporting literature alone contributing to change in practice in 22%, and costs in 28%.

In keeping with this trend, tonsils were routinely sent for gross pathologic examination at our institution, with the option to request specific histopathologic examination prior to 2015. The surgeon could request further pathologic evaluation based upon signs or symptoms in the patient that may be concerning for malignancy. These high risks factors have been well described by Beaty et al. [6] and include personal history of cancer, tonsil asymmetry, tonsil firmness on palpation, visible lesions, constitutional symptoms, unexplainable weight loss, or concomitant cervical adenopathy. Other factors that may prompt concern for malignancy may include progressive tonsillar hypertrophy despite appropriate medical management or immunocompromised status [7].

2. Materials and methods

The study was submitted and accepted for expedited IRB Review. A retrospective review was conducted on all tonsil specimens from tonsillectomies with or without adenoidectomy at Arkansas Children's Hospital from 2005 to 2014. The specimens were then categorized into those that were sent for gross examination only versus those that were sent for gross and histopathologic examination. Special requests from the surgeon to the pathology

department were also identified. Of the specimen sent for further investigation, the final histopathologic diagnosis was reviewed with specific attention to malignancy. Additional pathology records associated with the source of the tonsil were also reviewed to ensure there was not a future tissue diagnosis of malignancy in any of the patients.

3. Results

Over our 10 year study period, 8807 paired tonsillectomy specimens were received by the pathology department. Gross examination was performed on all of the specimens. 612 (6.95%) underwent further histopathologic examination based on surgeon request or pathologist's determination. Over the 10-year period, there was a trend to fewer cases being sent by surgeons for microscopic examination, as seen in Fig. 1. Of the 612 tonsil specimens sent to pathology, the surgeon requested to rule-out a specific diagnosis in 6 cases (Fig. 2). In 4 (0.05%) of the cases, the surgeon asked to exclude lymphoma (Fig. 3). The surgeon requested to rule-out graft versus host disease in one case and rule-out lymphoproliferative disorder in the remaining one. Seven (0.07%) of the

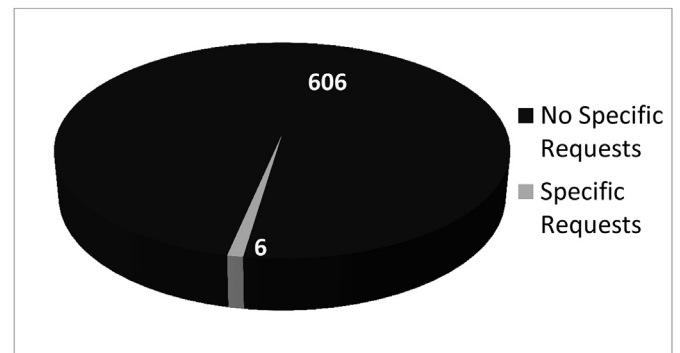


Fig. 2. Total number of specimens sent for histopathologic examination based on specific surgeon request to rule-out certain disease entities.

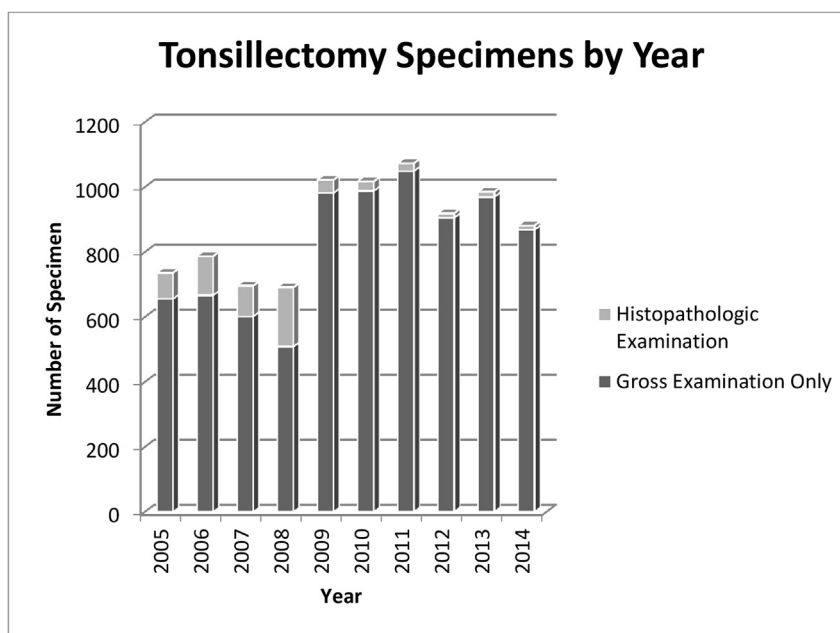


Fig. 1. Number of tonsillectomy specimens sent for gross and histologic examination by year between 2005 and 2014.

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