

Histopathology of the Tonsil, is it Important?

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Objective: A prospective study was performed to assess the value of histopathological microscopic examination of excised normal looking tonsils.

Methods: Between January 1995 to July 1996, 180 patients underwent tonsillectomy. Excised tonsils were processed and subjected to histopathological microscopic examination.

Results: Ninety five percent (171 patients) had chronic tonsillitis with chronic lymphoid hyperplasia. In six patients with chronic tonsillitis actinomyces were detected. Non-Hodgkin's lymphoma was diagnosed in one patient aged above 40 years. A rare finding was the finding of heterotopic (choristoma) cartilage in one tonsil. Other findings included chronic tonsillitis with warty irregular surface (1), chronic tonsillitis with micro-abscesses (4), fibrosed tonsils (1), reactive tonsillitis with crypts showing a collection of cholesterol (1).

Conclusion: In our study histopathological examination of the tonsils revealed diversity of pathological entities including non-Hodgkin lymphoma, choristoma, micro abscess, micro-organisms like actinomyces and cholesterol clefts. This emphasizes the importance of histopathological examination of tonsils after tonsillectomy inspite of its normal appearance.

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Tonsillectomy is a quite common procedure in ENT practice. Many ENT surgeons depend only on macroscopic examination and ignore the importance of further tonsil microscopic examination. This study was done to examine the value of microscopic examination of excised tonsils.

The walls of the alimentary and respiratory tracts contain large amounts of non-encapsulated lymphoid tissue and lymphoid nodules. These are collectively termed "the epitheliolymphoid" or "gut-associated lymphoid" tissue.

Lymphoid tissues are particularly prominent in the pharynx and nasopharynx, which include tubal, palatine, and lingual tonsils. They form a ring of gut-associated lymphoid tissue around the entrance of respiratory and alimentary tracts, known as Waldeyer's ring¹.

Tonsillectomy is an operation performed for diverse indications, among which recurrent episodes of acute tonsillitis is the commonest. Other indications include unilateral tonsillar enlargement, a second attack of quinsy (peritonsillar abscess), sleep apnea syndrome and during surgical treatment of glossopharyngeal neuralgia or during the excision of the elongated styloid process in Eagle's syndrome². In general histopathological findings can be benign (chronic tonsillitis with chronic lymphoid hyperplasia) or malignant ranging from lymphoma to squamous cell carcinoma; and in some rare instances, primary extramedullary plasmacytoma³ and primary amyloidoma

of the tonsil⁴. An infrequent finding is heterotopia or choristoma⁵, a condition in which aggregates of normal tissue components is detected in aberrant locations.

METHODS

Between January 1995 to July 1996, one hundred eighty patients underwent tonsillectomy by one of the ENT surgical teams at KHMC (King Hussein Medical Center). Chronic tonsillitis, non-responsive to medical therapy, constituted the main indication for the procedure. Tonsillectomy was performed under general anesthesia and the dissection method was used for removal of the tonsils. Hemostasis was secured by using ligatures or electrical bipolar cautery.

The tonsils were excised and immersed in 10% formalin solution before specimens were sent to the histopathology laboratory.

RESULTS

The mean age of the study population was 10.2 years (Range 2 to 60 years). There were 105 males and 75 females with a mean age of 9.9 and 10.7 years respectively.

The most common histopathological finding was that of chronic lymphoid hyperplasia due to chronic tonsillitis (171 patients); but in 6 of those patients actinomyces were detected.

Four patients were more than 40 years old. Two of them

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presented with signs and symptoms of peripheral sleep apnea syndrome due to bilateral huge tonsils and the other two had unilateral tonsillar enlargement. Histopathological examination of the tonsils taken from those four patients revealed that 3 had chronic reactive lymphoid hyperplasia and one had non-Hodgkin lymphoma.

The biopsy in another patient (aged 35 years) who presented with recurrent episodes of tonsillitis not responsive to medical therapy showed heterotopic cartilage in one tonsil (choristoma) in addition to chronic lymphoid hyperplasia.

Fifty four percent of the study population had at least one sibling who suffered from chronic tonsillitis in his/her early childhood. Of those siblings 15% had tonsillectomy.

Seventy one percent of the patients were from the middle or low income in the society and this suggests the presence of a close relation between the combination of socioeconomic and nutritional status with the disease.

Other histopathological findings were chronic tonsillitis with warty irregular surface (1), chronic tonsillitis with micro abscess (4), fibrosed tonsils (1), reactive tonsillitis with crypts that show cholesterol clefts (1).

DISCUSSION

The tonsil consists of a mass of lymphoid follicles supported by a fine connective tissue framework. Acute infection of the tonsils is most frequent in childhood, presumably because immunity to common organisms has not been established. Chronic tonsillitis is better defined as recurrent attacks of tonsillitis, with more than 6 attacks of genuine tonsillitis occurring per year for at least 2 consecutive years. Histopathological examination of tonsils in chronic tonsillitis reveals chronic reactive lymphoid hyperplasia.

Histopathological examination may rarely reveal heterotopia or choristoma, which are aggregates of normal tissue components in aberrant locations. In 1961⁵ Taylor and Martin were the first to report choristoma in the salivary gland tissue and the middle ear. In 1996 D Bhargava et al⁶ reported two patients who presented with chronic tonsillitis and had histopathological evidence of heterotopic bone and cartilage upon microscopic examination of the excised tonsils. The same authors reviewed the English literature of the last ten years and quoted no previous report of such heterotopic bone or cartilage formation in the tonsils. In our present series one patient had evidence of cartilaginous tissue. Other

reports of heterotopic bone formation have been described in other organs like the eye⁷, salivary glands⁶, middle ear⁶ and the renal pelvis⁸.

One additional patient in our present series had a non-Hodgkin lymphoma and as expected he presented with unilateral tonsillar enlargement of recent onset.

In 6 patients with chronic tonsillitis actinomyces were detected. Actinomyces are gram positive bacilli that often branch, giving it fungal appearances. Actinomyces often reside in the tonsillar crypts and gingivo-dental sulci and can cause deep neck infection that is not confined to facial compartments but spread indiscriminately across the facial planes. The hallmark of actinomycosis is a chronic granuloma with sulfur granules seen on naked eye examination. Diagnosis is best made by biopsy, since the bacillus is fastidious and grows with difficulty. Penicillin is the drug of choice and should be given for 6 to 12 months⁹.

CONCLUSION

In our study histopathological examination of the tonsils revealed diversity of pathological entities including non-Hodgkin lymphoma, choristoma, micro abscess, micro-organisms like actinomyces and cholesterol clefts. This emphasizes the importance of histopathological examination of tonsils after tonsillectomy inspite of its normal appearance.

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