HISTOPATHOLOGY IN CHRONIC TONSILLITIS: A RETROSPECTIVE ANALYSIS

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ABSTRACT: Tonsillectomy is a frequently performed surgical procedure in otolaryngology. The most common indication being chronic tonsillitis. Routine histopathological examinations of the resected tonsillar tissue is a gray area with no formal consensus among otolaryngologists. The description in literature of accidental discovery of underlying malignancy in the resected tonsillar specimens adds to the conundrum whether it is mandatory to examine all tonsillar tissue. **AIMS AND OBJECTIVES:** To retrospectively analyze histopathological reports of tonsillar tissue resected under the specific indication of chronic tonsillitis and document the major histological features in chronic tonsillitis. **PATIENTS AND METHODS:** One hundred and fifty eight tonsillar specimens from seventy nine patients were retrospectively analyzed and the major histopathological features documented. Majority of patients were in the 11-20 years age group (37.97%). A slight male predominance (51.90%) was seen over females (48.10). **CONCLUSIONS:** A tetrad of histopathological findings constitute chronic tonsillitis with reactive lymphoid hyperplasia seen in hundred percent of tonsillar specimens. No tonsillar specimen demonstrated underlying malignancy. It is our contention that subjecting a case of chronic tonsillitis to histopathological examination is unnecessary irrespective of the age group.

KEYWORDS: Chronic tonsillitis, Tonsillectomy, Histopathology.

INTRODUCTION: Chronic tonsillitis is a common inflammatory disease of childhood. The incidence of tonsillitis peaks between 5 to 6 years of age though it can involve the extremes of ages below 3 years and above 50 years.¹ Group A Beta Hemolytic Streptococci [GABHS] is the most common implicated organism in tonsillitis.² Chronicity implies either recurrent episodes of GABHS or a chronic carrier state of GABHS interspersed with overlapping viral pharyngitis. The treatment often depends on the number of episodes of throat infection per year along with associated complaints like lack of weight gain,³ decreased scholastic performances,⁴ and sleep apnoea.⁵ The widely adopted practice in the chronic case is recommendation of Tonsillectomy, which continues to be a very common practice in childhood around the world. An area of discordance is whether the removed tonsillar tissue should be subjected to Histopathological Examination (HPE). The proponents of mandatory HPE point out to accidental findings of occult carcinomas and lymphomas to propagate their espousal to the cause for HPE.⁶ As a department policy at our institute all tonsils removed under the indication of Chronicity are sent for HPE. This study aims to retrospectively audit all such specimens sent over the last 3 years and document the histopathological changes occurring in the chronically inflamed tonsil and its association if any with the degree of chronicity. This study also aims to postulate if a mandatory histopathological examination is necessary when chronically inflamed tonsils are removed.

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METHODS: This is a retrospective analysis done at Chettinad Hospital and Research Institute between the years 2012-2015. Histopathology reports of all tonsils removed under the indication of chronic tonsillitis were analyzed and the findings documented and correlated with the degree of chronicity. The tonsillectomy specimens were fixed in 10% buffered formalin, routinely processed and embedded in paraffin. The paraffin sections are stained with Hematoxylin and Eosin and examined under microscope.

Chronic tonsillitis is generally defined as:⁷

1. Greater than 7 episodes per year.
2. Greater than 5 episodes in the preceding two years.
3. Greater than 3 episodes in the preceding three years.

Associated clinical findings in chronic tonsillitis were hyperemia of anterior tonsillar pillars, bilaterally enlarged jugulodigastric lymph nodes with bilaterally enlarged tonsils.

Inclusion Criteria:

1. Children greater than 3 years of age diagnosed with chronic tonsillitis.
2. Chronically inflamed tonsils causing OSAS in children.
3. Patients with streptococcal pharyngitis and valvular heart disease.

Exclusion Criteria:

1. Unilateral enlargement of tonsil.
2. Acute tonsillitis.
3. Tonsils removed in cases of occult neck primary with neck secondaries.
4. Tonsils removed as part of styloid process removal.
5. Tonsils removed as part of uvulopalatopharyngoplasty procedure.

RESULTS: PATIENTS: Seventy-nine patients with one hundred and fifty eight tonsils removed and subjected to histopathological analysis during the review period were identified. Patient ages varied from three to fifty years. A majority of patients diagnosed with chronic tonsillitis fell in the age group between 11-20 years (37.97%), while the age group between 0-5 years comprised the least (11.39%). Adults comprised 17.73% of the patients. Males comprised 51.90% of the population with females comprising 48.10%.

HISTOPATHOLOGICAL FINDINGS: All one hundred and fifty eight tonsils (100%) subjected to histopathological examination demonstrated reactive lymphoid hyperplasia, surface ulcerations (39.24%) and bacterial colonies (36.71%) contributed to the other major histopathological findings. One tonsil (0.63%) demonstrated the presence of cartilage tissue which could be explained as a choristoma.⁸ significantly none of the one hundred and fifty eight tonsils demonstrated the presence of metaplasia, atrophy or fibrosis. Presence of salivary gland tissue (12.66%) and mucus glands (2.53%) could be explained as due to resection of adjacent normal oropharyngeal mucosa during tonsillectomy.

DISCUSSION: Serdar Ugras et al.⁹ in their study of histopathological findings of chronic tonsillitis in palatine tonsils concluded that slight to moderate lymphocytic infiltrations in surface epithelium,

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crypt abscess and or diffuse lymphocytic infiltrations were pathognomic of chronic tonsillitis. The presence of lymphoid hyperplasia was documented in only 45% of tonsils. Mohammed Ali Hiari.¹⁰ in his prospective study to assess the value of histopathological examination in post-tonsillectomy specimens had chronic lymphoid hyperplasia (95%) as the major histopathological feature.

Williams and Brown.¹¹ in their retrospective study of routine tonsillectomy specimens in patients aged 21 years or younger concluded that microscopic examination of all routine tonsils and adenoids for individuals 21 years or younger is not indicated. Dell Aringa et al.¹² in a retrospective study of 250 patients with palatine tonsil hypertrophy established reactive lymphoid hyperplasia in 82% of patients. Significantly none of the tonsil specimens harboured malignancy.

In our study, all one hundred and fifty eight tonsils had reactive lymphoid hyperplasia (100%) followed in descending order of frequency surface ulceration (39.24%), bacterial colonies (36.71%) and crypt abscess (7.59%). There were no distinct histopathological features in the adult tonsillectomy specimen as opposed to the tonsillectomy specimens from the paediatric age group. Significantly no tonsil specimen exhibited features of neoplasia, atrophy or fibrosis.

It is our contention that the tetrad of histopathological features suggestive of chronic tonsillitis should be:

1. Reactive lymphoid hyperplasia.
2. Surface ulceration.
3. Bacterial colonies.
4. Crypt abscess.

Granulations, keratin flakes in crypts, cholesterol clefts and tonsillar cysts comprise less than 5% of histopathological findings and therefore should not be considered pathognomic of chronic tonsillitis.

Fig. 1: Bacterial Colonies

Fig. 2: Reactive Lymphoid Hyperplasia

TONSILS:

Age in Years	No. of Patients	Percentage %
0-5	9	11.39
6-10	26	32.91
11-20	30	37.97
>20	14	17.73
Table 1: Age Distribution		

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Graph 1

Sex	No. of Patients	Percentage%
Male	41	51.9
Female	38	48.1

Table 2: Sex Ratio

Graph 2

Sl. No.	Pathological Conditions	No. of Tonsils	Percentage
1	Reactive Lymphoid Hyperplasia	158	100
2	Surface Ulcerations	62	39.24
3	Bacterial Colonies	58	36.71
4	Salivary Gland Tissues	20	12.66
5	Granulations	16	10.13
6	Abscess	12	7.59
7	Neutrophil Infiltrates	8	5.06
8	Keratin Flakes	6	3.80
9	Mucus Glands	4	2.53
10	Cholesterol Cleft	2	1.27
11	Cyst	2	1.27
12	Cartilage	1	0.63
13	Atrophy	0	0
14	Fibrosis	0	0

Table 3: Common Pathological Conditions

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Graph 3

CONCLUSION: Considering the absence of neoplasia in any of the one hundred and fifty eight tonsillar specimens and lack of specific differentiating features between adult and paediatric tonsillectomy specimens, it's our recommendation that subjecting a tonsil removed under the indication of chronic tonsillitis for routine histopathological examination is unnecessary and could constitute an economic burden on the patient. Histopathological examination of tonsillar tissue could be considered if patients have signs and symptoms suggestive of a more sinister pathology like significant multiple cervical lymphadenopathy, associated significant weight loss and unilateral tonsillar enlargement.

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