Original Research Article

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Various spectrum of lesion in palatine tonsil underwent for tonsillectomy in tertiary care center: a two years retrospective study

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ABSTRACT

Background: Palatine tonsils are paired masses of lymphoid tissue which act as immunologic barrier against the entry of pathogenic organism into the respiratory and digestive tracts. Despite their protective function, tonsils are prone to infection. Chronic tonsillitis is a disease with repeated attacks of acute tonsillitis or a sub-clinic form of a resistant or poorly treated infection. Objective of the study was to know the various clinico-pathological finding in palatine tonsil underwent for tonsillectomy.

Methods: This was a retrospective study where 105 cases (unilateral-15, bilateral-86 and tonsillar biopsy in 04) of histopathologically identified tonsillectomy specimens were included. The available data for all the patients as regards to age, sex and clinical symptoms was collected. Representative bits were taken from formalin fixed tonsillectomy specimens in which hematoxylin and eosin (H and E) staining was done.

Results: Amongst the cases, 79 cases showed chronic tonsillitis. Other lesions were chronic tonsillitis with actinomycosis in 11 cases, acute on chronic tonsillitis in 07 cases, granulomatous tonsillitis in 03 cases, Acute ulcerative tonsillitis with micro abscesses in 01 case and Reactive lymphoid hyperplasia in 02 case. Two malignancies were observed - one case of poorly differentiated carcinoma and another case of lymphoma.

Conclusions: This study showed that chronic tonsillitis is a common problem facing in all age groups and histopathology play a key role in diagnosing both benign and malignant lesion of tonsil therefore deciding the proper management.

Keywords: Palatine tonsil, Tonsillectomy, Tonsillitis, Histopathology

INTRODUCTION

Tonsillar and adenoid diseases are the most common health-related issues in ear, nose and throat (ENT) diseases in children and adults. The palatine tonsils are paired nodular masses of lymphoid tissue situated on either side of the oropharynx having an extremely remarkable role in the antimicrobial defense of the body. They are covered by non-keratinized stratified squamous epithelium along with deep crypts that invaginate into the parenchyma, in which B-lymphocytes are found.

Tonsillitis is one of the commonest infectious diseases seen commonly in the young age group.

Various organisms including viruses like *Reo* virus, *Adenovirus, Influenza* virus and *Echo* virus, and bacteria like beta-hemolytic *Streptococcus* are implicated in causation of tonsillitis. Rarely, it can be caused by fungi or parasites.⁴ Chronic tonsillitis is still the commonest indication for tonsillectomy.⁵ One of the definite indications is asymmetric tonsil for histopathological evaluation to rule out malignancy.^{6,7}

Tonsillectomy is generally indicated when there are frequent attacks of acute tonsillitis. Other indications of tonsillectomy include obstructive sleep apnea, quinsy, tonsillitis, tonsillar cysts and suspicion of malignancy adeno-tonsillectomy is performed in children with obstructive sleep apnea. We report 105 cases of enlarged tonsil, out of which 101 cases were undergone for tonsillectomy and 04 cases for tonsillar biopsy.

This study was conducted for studying the clinicopathological findings of various lesions of palatine tonsils underwent for tonsillectomy in various age groups.

METHODS

This was a retrospective study conducted in Department of ENT in T.S. Misra Medical College and Hospital, Lucknow (U.P.) during the period of January 2018 to 2020. The cases included were from different age groups from children to elderly having repeated attacks of Acute Tonsillitis. The cases having history of allergy and any other chronic illness (diabetes mellitus, hypertension, TB and asthma) were excluded.

All the cases were admitted for surgery in ENT department and cases were done in general anesthesia (GA) with nasal intubation and tissue was sent for histopathology in pathology department. Necessary approvals were taken from ethical committee of the institution. The available data for all the patients as regards age, sex, clinical symptoms was collected from the medical records section and hospital information system (HIS).

Histopathological reports of the patients who undergone tonsillectomy were also retrieved. Pre-operative clinical histories which included clinical presentation, clinical course and complete medical history were gleaned from the record and clarified with the operating notes. Total 105 cases were operated out of which tonsillectomy was done in 101 cases unilateral-15, bilateral-86 and tonsillar biopsy was done in 04 cases. Tonsillar tissues sent for Histopathological examination in pathology department where the specimens were fixed in 10% formalin. Representative bits were taken from formalin fixed tonsillectomy specimens whereas biopsies were submitted entirely to make paraffin blocks. The sections were cut at 3-4 microns thickness and were stained with hematoxylin and eosin (H and E). Microscopic examination was done.

RESULTS

In all cases of chronic tonsillitis, the most common age group affected is 21-30 years comprising of 35.2% followed by age group of 31-40 years comprising of 27.6%. In elderly age group of age more than 50 years comprising of 4.7% present as odynophagia (Table 1).

Most common clinical presentation was recurrent intermittent episodes of throat pain & odynophagia comprising of 55.2% followed by recurrent throat infection 14.3% (Table 2).

Table 1: Distribution of cases in different age groups.

Age group in years	N	Percentage
1-10	09	8.6
11-20	19	18.1
21-30	37	35.2
31-40	29	27.6
41-50	06	5.7
51-60	03	2.8
61-70	02	1.9

Table 2: Most common clinical presentation.

S. no.	Symptoms	Percentage
1.	Throat pain	38.1
2.	Odynophagia	17.1
3.	Recurrent throat infection	14.3
4.	Dysphagia or voice quality changes	12.4
5.	History of fever and cough	8.6
6.	Snoring	5.7
7.	Apneic spells	3.8

Most common clinical signs were congestion of tonsils, anterior pillars and peritonsillar region seen in 47.6% cases. Jugulodigastric lymph nodes were palpable in cases of chronic tonsillitis. Two malignant cases were reported had unilateral enlargement of tonsil along with ulcero-proliferative growth seen in 1.9% (Table 3).

Table 3: Most common clinical sign.

S. no.	Common signs	Percentage
1.	Congestion of tonsils, anterior pillars and peritonsillar region	47.6
2.	Enlarged tonsil	24.7
3.	Halitosis	20.0
4.	Cheesy material in crypts of tonsil	1.9
5.	Fibrosis	3.81
6.	Growth and ulceration	1.9

Out of 105 cases, 101 cases were tonsillectomy and 04 cases were tonsillar biopsy out of which 46 cases were males and 59 cases were females, ranging in age from 1-70 years. Female mean age was of 30 years and a male mean age of 34 years. A slight predominance of females 56.2% was noted (Figure 1). Amongst 105 cases, histopathological examination showed 78 cases showed chronic tonsillitis only (Table 4). In our study, 11 cases of chronic tonsillitis showed actinomycotic colonies, however there was no tissue reaction (Figure 2A).

Table 4: Distribution of cases on the basis of histopathological findings.

S. no.	Diagnosis	N	Percentage
1.	Chronic tonsillitis	78	74.2
2.	Chronic tonsillitis with actinomycosis	11	10.5
3.	Acute on chronic tonsillitis	07	6.7
4.	Granulomatous tonsillitis	03	2.8
5.	Reactive lymphoid hyperplasia	02	1.9
6.	Acute ulcerative tonsillitis with micro abscesses	01	0.95
7.	Squamous cell carcinoma	02	1.9
8.	Undifferentiated carcinoma/lympho ma	01	0.95
	Total	105	100

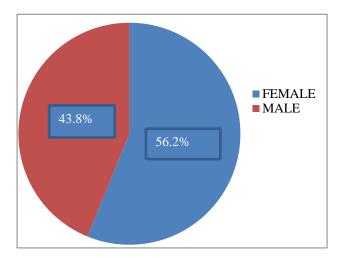


Figure 1: Percentage of distribution of cases in male and female.

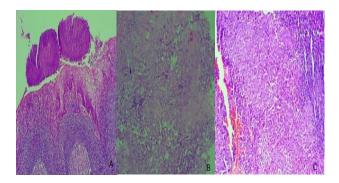


Figure 2: Histopathology picture of tonsil (A) actinomycetes colonies, (B) squamous cell carcinoma and (C) undifferentiated carcinoma/lymphoma.

07 cases of were acute on chronic tonsillitis, acute ulcerative tonsillitis with micro abscesses in one case and reactive lymphoid hyperplasia in two case were seen. Granulomatous tonsillitis was seen in three cases. Malignancy in tonsil was observed in 3 cases, out of which two cases reported squamous cell carcinoma (Figure 2B) and one as undifferentiated carcinoma/lymphoma (Figure 2C).

DISCUSSION

There has been a debate on the necessity of histopathological examination of routine tonsillectomy or adeno-tonsillectomy specimens since decades. Tonsils are important components of the immune system and their infections are very frequent. Tonsils are immunologically more active in the first years of life. The pathogenesis of infectious/inflammatory disease in the tonsils most likely has its basis in their anatomic location and their inherent function as organ of immunity, processing infectious material and other antigens and then becoming, paradoxically, a focus of infection/ inflammation.9 During aging, whereas lymphoid tissue regresses, sub epithelial tissue changes into fibrotic tissue and crypts alter into cavities filled with keratin. In case of infection, bacteria that inhabit the crypts spread into the tonsil and leave their toxins and other products in it, eventually leading to polymorphonuclear leukocyte infiltration, swelling, necrosis and surface ulceration in tonsils. 10

Chronic tonsillitis most often affects children, but can be seen in adults, probably due to a local dysfunction of the epithelium. The recurrent nature of acute tonsillitis is attributed to the bacteria surviving intracellularly, thus avoiding antibiotic killing and causing re-infection. Repeated attacks of tonsillitis can lead to tonsillar hypertrophy causing airway obstruction, thus leading to excision.¹¹

In our study patients' age group ranged from 1-70 years, majority of the patients 58.3% were belong in age group of 0-20 years not concide with study done by Manzoor et al. 12 However two patients with tonsillar malignancy were of higher age group. Ugras et al investigated eight histopathological criteria in all palatine tonsils: presence of slight-moderate lymphocyte infiltration in the surface epithelium, presence of abscess leading to the defect in the surface epithelium (Ugras's abscess), presence of diffuse lymphocyte infiltration leading to the defect in the surface epithelium, presence of polymorphonuclear leukocytes in the surface epithelium and in the sub epithelial area, presence of lymphoid hyperplasia, increase in the plasma cells number in the sub epithelial area and in the interfollicular area, presence of fibrosis and presence of atrophy. 13 Seven out of eight criteria they studied were more closely associated with chronic tonsillitis, only one criteria (the presence of lymphoid hyperplasia) was higher in chronic tonsillar hypertrophy compared chronic tonsillitis. In our study the presence of slight-moderate lymphocyte infiltration in the surface epithelium seen in 84 (80.0%) cases. Only two cases are of purely reactive lymphoid hyperplasia.

Actinomycetes are filamentous branched bacteria and live as commensal organisms within the oral cavity. When present in tonsillar tissue, they may present with recurrent tonsillitis along with complaints of sore throat, fever. In our study, eleven cases of chronic tonsillitis showed actinomycotic colonies, however there was no tissue reaction which is similar to study done by Manzoor et al and Sujatha et al. ^{12,14}

Histopathological evaluation is not simply important to rule out malignancy but it is equally important for suspicious cases of TB. We encountered 03 cases of TB who had preoperative risk factors of family history of TB, high ESR, unilateral tonsillar enlargement which is similar to study done by Ozbay et al and Sujatha et al.^{15,14}

Cancer of the palatine tonsils was the most common tumor of the oropharynx. Carcinoma arising from these sites usually is squamous in origin and is related strongly to smoking, HPV infection and, to a lesser degree, alcohol ingestion.¹⁶ However, during the past 2 decades, have numerous studies shown that papillomaviruses (HPV) are a risk factor for the development of oropharyngeal carcinoma.¹⁷ Squamous cell carcinoma (SCC) is the most common malignancy followed by non-Hodgkin's lymphomas (NHL) in the tonsil. NHL of the oral cavity and oropharynx usually account for 13% of all primary extra nodal NHL with approximately 70% occurring in the tonsils.¹⁸ Risk factors for malignancy as old age patient with history of smoking, chewing pan leaf/betel nut, history of cancer constitutional symptoms; associated examination findings such as tonsil asymmetry, tonsil lesion and neck mass similar to the findings of Agoda et al. 19 In our study we observed two cases of poorly differentiated SCC and one case of NHL were noted which is quite similar to study done by Agoda et al and Maharjan et al. 19,20

CONCLUSION

From the present study it was concluded that chronic tonsillitis is a common problem facing in all age group, diagnosed in palatine tonsil. Histopathology play a key role in diagnosing both benign and malignant lesion of tonsil therefore deciding the proper management of the disease.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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