Clinicopathological study of Salivary gland disorders in a tertiary care hospital, Lahore.

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ABSTRACT… Objective: To describe the demographic and histological features of salivary gland pathologies at tertiary care hospital. Study Design: Retrospective Descriptive. Setting: Shalamar Institute of Health Sciences, Lahore. Period: February 2012 to February 2017. Material & Method: 17548 surgical specimens were received during this period. Among these, 50 cases were diagnosed as salivary gland disorders. Statistical analysis was carried out using SPSS version 22. Results: 50 cases were diagnosed as salivary gland disorders out of 17548 surgical resections. Salivary gland disorders were divided into non-neoplastic group (n= 15) and neoplastic group (n = 35), which was further divided into: (i) Benign tumors, (n= 26) and (ii) Malignant tumors, (n= 9). Conclusion: Salivary gland disorders are rare diseases to be encountered clinically. Chronic sialadenitis among non-neoplastic disorders, pleomorphic adenoma among benign tumor and mucoepidermoid carcinoma among malignant tumors were the commonest.

Key words: Pleomorphic Adenoma, Salivary Gland, Sialadenitis.


INTRODUCTION
Salivary glands are exocrine organs and are distributed in head and neck region. These are small structures in the head and neck, but can give rise to a wide variety of pathological conditions. Salivary gland disorders include a wide spectrum of non-neoplastic (infections, inflammatory, autoimmune) and neoplastic (benign and malignant) disorders. Salivary gland neoplasms are rare and they range from 3%¹ -6%² of all head and neck tumours. The clinical presentation of salivary gland tumour can be localized or diffused; mobile or fixed; may or may not be associated with pain. The complexity of the neoplasm depends on variety in the histological appearances.

Approximately more than 50% of salivary gland tumours are benign, and 80% of all salivary gland neoplasms arise from the parotid gland.³⁴ The frequency of malignant lesions varies according to site. Among the malignant tumours, majority arises in minor salivary glands followed by submandibular and parotid gland.³⁵ The objective of the study is to describe the demographic and histological features of salivary gland pathologies at tertiary care hospital. Rationale of the study is to document histological features of salivary gland pathologies and their distribution in salivary glands.

MATERIAL & METHODS
A retrospective analysis of data of five years (February 2012 to February 2017) was retrieved from archives of Histopathology section, Shalamar Institute of Health Sciences, Lahore. Haematoxylin & Eosin stained slides of cases of salivary gland disorders were retrieved and reviewed by two Consultant Histopathologists independently. Statistical analysis was carried out using SPSS version 22. Ethical committee & Institutional Review Board of Shalamar Medical and Dental College & Hospital approved the study with reference no. SMDC/IRB/14-02/155 dated: 14-2-2019.
RESULTS
Fifty cases were diagnosed as salivary gland disorders out of 17548 surgical biopsies presented to Pathology Laboratory, Shalamar Institute of Health Sciences over a period of five years (February 2012- February 2017). Salivary gland disorders were divided into: Non-neoplastic group, n=15 (30%) and neoplastic group, n=35 (70%). Neoplastic group was further divided into: Benign tumours, n=26 (52%) and malignant tumours, n=9 (18%).

In non-neoplastic group, 40% were females and 60% were males with M: F ratio of 1:1.5, however, in neoplastic group, 54% were males and 46% were females with M: F ratio of 1:1.8. Maximum number of patients in non-neoplastic group was presented in less than 20 years of age, benign tumours was between 21-50 years and in malignant tumours was between 52-60 years of age with mean age ± SD of 33.6±19.6, 36 ±17.7 and 54.8 ±9.2 years respectively. In neoplastic group (n=35), parotid gland involvement was present in 24 (68.8%) among which 13 were males and 11 were females; submandibular gland involvement was 8 (22.6%) among which 3 were males and 5 were females; and minor salivary glands were involved in 3 (8.7%) and all were present in males.

Pathological diagnosis in non-neoplastic group (n=15) was chronic sialadenitis (n=11), abscess (n=1), chronic sclerosing sialadenitis (n=1), benign epithelial cyst (=1) and lymphoepithelial cyst (n=1) whereas in neoplastic group, benign lesions (n=26) were pleomorphic adenoma (n=19), Warthin’s tumour (n=5) oncocytoma (n=1) and schwannoma (n=1). Among malignant lesions (n=9), adenoid cystic carcinoma (ACC) was seen in two cases, mucoepidermoid carcinoma (MEC) in 3 cases, one case each of acinic cell carcinoma, polymorphous low grade adenocarcinoma (PLGA), salivary duct carcinoma (SDC) and non-Hodgkin’s lymphoma (NHL).

DISCUSSION
We observed male to female ratio of 1.2:1 which is in concordance with Kizil et al⁶ and Adebiyi et al⁷, however, Fonseca et al⁸ and Vasconcelos et al⁹ observed slight increase in female group i.e., M: F ratio of 0.8:1 and 0.9:1 respectively. Majority of the research groups observed parotid gland being the most vulnerable to develop neoplastic lesions, similar to the present study.²⁹ In contrary to this, Taghavi et al observed high frequency in minor salivary glands involvement (81%)¹¹, that seems to be very unusual.

In the present study, benign neoplasm were present in 74.3% of patients and malignant in 25.7% of cases, making benign to malignant ratio of 3:1, which was almost consistent with a study conducted by Wang et al who observed 75.4% benign and 24.6% malignant cases.¹⁰ Kizil et al made similar observations, as more benign neoplasms i.e., 69% as compared to malignant tumours i.e., 31%.⁶ Omhare et al also reported as 67.2% benign tumours and 32.8% as malignant lesions.² However, Lawal et al. observed opposite ratio as more of malignant cases (53.5%) in comparison to benign tumours (46.5%)¹², which is in concordance with Adebiyi et al as 57% and 43% respectively.⁷

In the present study, the frequency of pleomorphic adenoma was highest (73%) that is consistent with most of the literature i.e., Qureshi et al: 82.1%¹³, Fonseca et al: 85%, Lawal et al: 88%¹², Omhare et al: 66.6%, Vasconcelos et al: 79.1%.⁹ Warthin’s tumor was second most common benign tumor with a frequency of 19% in present study and 6.8%, 9.7%, 2.5% and 18.6% in Qureshi et al, Fonseca et al, Omhare et al and Vasconcelos et al respectively.²⁸ Oncocytoma was observed in 2.8% by Qureshi et al¹³ and 0.2% by Fonseca et al, however, 4% was noted in our study group.

In our research, a single case of Schwanna was diagnosed which was involving parotid gland. Literature shows that 0.8% of all Schwannomas are facial nerve related. Most of the Schwannomas are intrateemporal, only 9% are extratemporal.²¹⁴

The most common malignant tumors in the present study is MEC (33%) followed by ACC (22%), PLGA (11%) & acinic cell carcinoma (11%). Mucoepidermoid carcinoma is considered as most common in various studies conducted by Qureshi et al (63.2%)¹³, Fonseca et al (31.4%)⁸,
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To VSH et al (24.4%)\textsuperscript{15}, Omhare et al (42.1%)\textsuperscript{2}, and Taghavi et al (27.1%).\textsuperscript{11} However, acinic cell carcinoma was seen the commonest by Tabatabas et al (35.8%)\textsuperscript{16}, Lawal et al (42.1%)\textsuperscript{1} and Vasconcelo et al (58.3%).\textsuperscript{9} Salivary duct carcinoma comprised of 11% in the present study, 17.7 % by To VSH et al\textsuperscript{15} and 2.1 % by Taghavi et al.\textsuperscript{11} Acinic cell carcinoma was seen the commonest by Tabatabas et al (35.8%)\textsuperscript{16}, Lawal et al (42.1%)\textsuperscript{1} and Vasconcelo et al (58.3%).\textsuperscript{9} Salivary duct carcinoma comprised of 11% in the present study, 17.7 % by To VSH et al\textsuperscript{15} and 2.1 % by Taghavi et al.\textsuperscript{11} Acinic cell carcinoma was ranked third by most of the studies in literature\textsuperscript{8,11,16} and so in the present study. Non-Hodgkin lymphoma comprise 3% of cases in study conducted by Qureshi et al\textsuperscript{13} and 11% in the present study.

CONCLUSION
Salivary gland disorders are rare diseases to be encountered clinically. Chronic sialadenitis among non-neoplastic disorders, Pleomorphic adenoma among benign tumour and Mucoepidermoid carcinoma among malignant tumours were the commonest.


REFERENCES


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**AUTHORSHIP AND CONTRIBUTION DECLARATION**

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