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Original Research Article

A Hospital Based Evaluation of the Histopathological Spectrum of Salivary Gland Lesions and to Know Their Pattern of Distribution

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Abstract

Aim: The objective of the present study was to evaluate the histopathological spectrum of salivary gland lesions and to know their pattern of distribution.

Methods: The present study was conducted in the Department of Pathology, Darbhanga medical College and Hospital, Darbhanga, Bihar, India for the period of 1 year. The study included all the cases of salivary gland neoplasm irrespective of their sites that had undergone surgery in the hospital. Total 40 cases were included.

Results: Most of the cases showed male predominance and were commonly found between the age group 31-40. Most common site involved was submandibular region. Chronic Sialadenitis was the common non neoplastic salivary gland lesion accounting for 32.5% Pleomorphic adenoma was the most common benign tumor and Mucoepidermoid carcinoma was the most common malignant tumor found in the present study.

Conclusion: This study concluded that pleomorphic adenoma was the commonest benign salivary gland tumors and among malignant tumors; mucoepidermoid carcinoma was the commonest. Histopathological examination remains gold standard because of their varied histomorphological features, it helps to differentiate between nonneoplastic and neoplastic lesions and deciding course of management.

Keywords: Salivary gland, Pleomorphic adenoma, Mucoepidermoid carcinoma, histopathology

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Introduction

Salivary glands are unique among the secretary glands with a more heterogenous group of tumors showing greatest histological diversity. Salivary gland system includes three pairs of major glands – Parotid, Submandibular and Sublingual and many minor glands in the mucosa of the oral cavity, lips, floor of mouth, gingival, cheek, hard and soft palate, tonsillar areas and oropharynx. [1] The spectrum of salivary gland lesions is wide and the relative incidence of neoplastic versus non neoplastic lesions is variable in different studies. [2] Salivary gland tumors account for 2% of all human neoplasm and relatively uncommon. [3] Salivary glands tumors are rare with annual incidence <1/100000 inhabitants. These tumors show wide range of morphological diversity between different tumor types and sometimes within an individual tumor mass. [4]

Salivary gland tumor comprises about 3% of all head and neck tumors. Benign tumors are more common when compared to malignant tumors. In the parotid gland, about 80% of the tumors are benign, whereas in the submandibular gland it drops to 60% and in the oral cavity, malignant salivary gland tumors outnumber the benign tumors. [5,6] In India, overall incidence of SGTs can be ascertained from the cancer registry established by Indian Council of Medical Research. [7] However, the geographic area and population covered by these registries are small and perhaps unrepresentative of the Indian population. In addition, there is a limited published literature on SGTs in Indian population. [8]

Minor salivary gland lesions are most frequently seen in the oral cavity. Approximately 64-80% of all primary salivary gland tumors are found in the Parotid gland and 10 to 15% in the submandibular gland. Majority of Salivary gland tumors are of benign histology with pleomorphic adenoma being the most common. The probability of malignancy is relatively inversely proportional to the size of the gland. A diagnosis of salivary gland neoplasm must

be considered in any patient who presents with a mass in the parotid or submandibular region or a sub mucosal mass in the oral cavity or pharynx. A preoperative sonography combined with FNAC, CT scan and MRI in some cases provides necessary clues prior to surgery. Although FNAC is a tool for pre-operative evaluation, Histopathology still remains the gold standard in giving the final diagnosis. Most patients with malignant salivary gland tumors are in the sixth or seventh decade of life. [9]

The objective of the present study was study the histopathological spectrum of salivary gland lesions and to know their pattern of distribution.

Materials and Methods

The present study was conducted in the Department of Pathology, Darbhanga medical College and Hospital, Darbhanga, Bihar, India for the period of 1 year. The study included all the cases of salivary gland neoplasm irrespective of their sites that had undergone surgery in the hospital. Total 40 cases were included.

Relevant clinical history along with the site of the lesions was analyzed. The salivary gland tumors were routinely fixed in 10% formalin. Large specimens were cut for proper fixation before grossing. After fixation, adequate sections were given from the tumor, capsules, margins, and base. The slides were routinely stained with hematoxylin and eosin (H & E) stains and also with special stains wherever it was required. The slides were analyzed by two pathologists for a definite diagnosis. The data were analyzed using Microsoft Excel and Statistical Package for the Social Sciences (SPSS) 21.0 version.

Results

Table 1: Demographic data

Age groups in years	N%
10-20	-
21-30	2 (5%)
31-40	20 (50%)
41-50	7 (17.5%)
51-60	8 (20%)
61-70	3 (7.5%)
Gender	
Male	28 (70)
Female	12 (30)

Most of the cases showed male predominance and were commonly found between the age group 31-40.

Table 2: Site wise distribution of salivary gland lesions

Site wise distribution	N%
Parotid Gland	14 (35)
Submandibular Gland	22 (55)
Minor Salivary Gland	4 (10)

Most common site involved was submandibular region.

Table 3: Spectrum of non-neoplastic and neoplastic salivary gland lesions

Spectrum	N%
Non-Neoplastic	
Chronic Sialadenitis	13 (32.5)
Granulomatous Sialadenitis	3 (7.5)
Mucocele	4 (10)
Retention cyst	3 (7.5)
Neoplastic	
Pleomorphic Adenoma	7 (17.5)
Warthins tumor	3 (7.5)
Mucoepidermoid carcinoma	2 (5)
Adenoidcystic carcinoma	2 (5)
Epithelial myoepithelial carcinoma	1 (2.5)
Acinic cell carcinoma	1 (2.5)

Chronic Sialadenitis was the common non neoplastic salivary gland lesion accounting for 32.5% Pleomorphic adenoma was the most common benign tumor and Mucoepidermoid carcinoma was the most common malignant tumor found in the present study.

Discussion

Salivary gland lesions are not so common, especially neoplasms, which constitute less than 1% of all tumors and about 2 to 6.5 percent of all epithelial neoplasms encountered in the head and neck region. Microscopically salivary glands are compound exocrine glands composed of a ductal and acinar portion, the letter of either serous or mucinous type. [10] Although various histologic types of epithelial tumors of the salivary glands exist, some are exceedingly rare and may be the subject of only few case reports. These comprise a wide variety of benign and malignant neoplasms, non-neoplastic lesions which exhibit difference not only in biological behavior but in prognosis as well. Tumors of the salivary glands comprise those in the major glands (parotid, submandibular and sublingual) and the minor glands (e.g. oral mucosa, palate, uvula, floor of mouth, posterior tongue, retromolar area and peritonsillar area, pharynx, larynx, and paranasal sinuses). Salivary gland tumor is rare and comprises a wide variety of benign and malignant neoplasms which shows different biological behavior. There are three major salivary glands, namely parotid, submandibular and sublingual along with other minor salivary glands that are distributed in the oral cavity mucosa. Both neoplastic and non-neoplastic diseases may develop within any of these sites. [11,12]

Most of the cases showed male predominance and were commonly found between the age group 31-40. Musani MA, et al. in their study found the highest number of benign tumors in the 4th decade and malignant tumors in the 5th decade. [13] Shrestha S, et al. in their study showed benign salivary gland tumors being more common in the 4th decade and the peak age incidence for malignant salivary gland tumors was 5th decade. [14] Some studies showed the male predominance in salivary gland tumors. [14,15] Most common site involved was submandibular region. Parotid gland was the most common site of SGTs, followed by submandibular gland and the minor salivary gland in the palate and floor of the mouth. Chronic Sialadenitis was the common non neoplastic salivary gland lesion accounting for 32.5% Pleomorphic adenoma was the most common benign tumor and Mucoepidermoid carcinoma was the most common malignant tumor found in the present study. The study was comparable to Bashir S et al [16] Ahmed et al [17] and Rewusuwan et Al. [18]

Conclusion

This study concluded that pleomorphic adenoma was the commonest benign salivary gland tumors and among malignant tumors; mucoepidermoid carcinoma was the commonest. Histopathological examination remains gold standard because of their varied histomorphological features, it helps to differentiate between nonneoplastic and neoplastic lesions and deciding course of management.

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