

Histopathological Analysis of Salivary Gland Lesion

Pooja N Gauswami¹, Nandita P Mehta², Hansa M Goswami³

¹Post graduate Resident, ²Additional Professor, ³Professor & Head, Department of Pathology,
B. J. Medical College, Asarwa Ahmedabad, Gujarat, India

Abstract

Lesions of the salivary glands present an interesting subject matter because of their great histologic diversification. This study was carried out to study the histopathological spectrum of salivary gland lesions and to know their pattern of distribution. The study was done with retrospective data from January 2014 to August 2018 and in the department of Pathology BJ Medical College civil Hospital Ahmedabad. Out of total 100 cases, 73(73%) were neoplastic and 27(27%) were non neoplastic. Overall there is male predominance over female. The age range of 17 to 75 years. Benign tumors are more common over malignant. Parotid was the most common site for the location of tumors (67%) and Pleomorphic adenoma was the commonest salivary gland tumor observed in both sexes. Muco-epidermoid carcinoma was the most common among the malignant salivary gland tumors followed by adenoid cystic carcinoma.

Keywords: Salivary gland, Pleomorphic adenoma, Mucoepidermoid carcinoma.

Introduction

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 latter of either serous or mucinous type.¹ 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). 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.²

Aim and Objectives

1. To study the morphological appearances of salivary gland lesions.
2. To observe the prevalence of salivary gland lesions.
3. To evaluate the incidence, age at occurrence, sex ratio among the patients with salivary lesions who attended civil hospital, Ahmedabad.
4. To compare and observe the results of this study

Corresponding author:

Pooja N Gauswami

E-mail: pngoswami8.5030@gmail.com

with other studies in the contemporary literature.

Materials and Method

Type of study: The material required for the study was collected from January 2014 to August 2018 from the Department of Pathology, BJ Medical College, Ahmedabad for 4.5 years.

Source of data: The present study titled “A Histopathological study of salivary gland lesions” was conducted in the Department of Pathology, BJ medical college, Ahmedabad from January 2014 to August 2018. The source of data is from the biopsies of lesions of salivary glands that were received at Department of Pathology through The civil hospital, Ahmedabad. A total of 100 cases were studied.

Sample size: The study comprised of 100 cases that were received during the period January 2014 to August 2018.

Methods of collection of data: A total of 100 specimens of salivary gland lesions were analyzed. In the study patient’s history and clinical details were noted from the original request forms, specimens were fixed in formalin and the sections were taken from the lesion, its margin surrounding tissues and lymphnodes if any. These sections were stained with hematoxylin and eosin, and in selected cases special stains like PAS was done after mounting on a slide.

Inclusion criteria:

1. Non neoplastic disorders of major and minor salivary glands.
2. Benign lesions of major and minor salivary glands.
3. Malignant lesions of major and minor salivary glands.

Exclusion criteria: 1) Inadequate and improperly fixed tissue biopsies

Results / Observation

The present study includes all the cases of salivary gland lesions that are reported in the Dept. of Pathology, BJ Medical College Ahmedabad over a period of 4 years that is from January 2014 to August 2018. This study includes a total of 100 cases. During study it is observed that In our study maximum number of cases are seen

in Parotid gland constituting 67 cases(67%) followed by Submandibular gland constituting 18 cases (18%).It is also noted during study that Neoplastic lesions(73%) are more common than the Non neoplastic lesions(27%). In our study maximum numbers of salivary neoplasms are benign neoplasms – 48 cases(65.75%) compared to malignant neoplasm which constitute 25 cases(34.24%)

Table No.1:Morphological spectrum of salivary gland lesion

Pleomorphic adenoma constitutes the most common lesion with 40 cases (40%) followed by Chronic sialadenitis 21 cases(21%).

LESIONS	NO.OF CASES	%
Chronic sialadenitis	21	21
Chronic sialadenitis with sialadenosis	1	1
Cystic lesion	5	5
Pleomorphic adenoma	40	40
Mucoepidermoid carcinoma	10	10
Adenoid cystic carcinoma	7	7
Warthin’s tumour	3	3
Myoepithelial carcinoma	1	1
Epithelial-myoepithelial carcinoma	1	1
Basal cell adenoma	2	2
Rosai doffman disease of parotid gland	1	1
Monomorphic adenoma	1	1
Metastatic carcinoma	2	2
Acinic cell carcinoma	1	1
Secondary amyloidosis of salivary gland	1	1
Non hodgkins lymphoma of salivary	1	1
Salivary duct carcinoma	1	1
Adenocarcinoma of parotid gland	1	1
TOTAL	100	

Table No 2: Gender wise spectrum of salivary lesion

	MALE	FEMALE	TOTAL
NON-NEOPLASTIC LESION	14	13	27
Chronic sialadenitis	10	11	21
Chronic sialadenitis with sialadenosis	1	0	1
Cystic lesion	3	2	5
BENIGN NEOPLASTIC LESION	25	23	48
Pleomorphic adenoma	19	21	40
Warthin's tumour	3	0	3
Basal cell adenoma	1	1	2
Monomorphic adenoma	0	1	1
Rosai doffman disease of parotid	1	0	1
Secondary Amyloidosis of salivary	1	0	1
MALIGNANT LESONS OF SALIVARY	12	13	25
Mucoepidermoid Carcinoma	4	6	10
Adenoid cystic carcinoma	2	4	6
Acinic cell carcinoma	1	0	1
Metastatic carcinoma	2	0	2
Adenocarcinoma of parotid	0	1	1
Myoepithelial carcinoma of salivary	1	0	1
Epithelial myoepithelial carcinoma	1	0	1
Non hodgkins lymphoma of salivary	0	1	1
Salivary duct carcinoma	1	0	1
TOTAL	51	49	100

From above table overall salivary gland lesions are slightly female predominance. In non neoplastic lesion cystic lesion have slightly male predominance. In Benign lesion pleomorphic adenoma is most common In malignant lesion Mucoepidermoid is most common.

Table no.3 age wise distribution of salivary gland lesion

Lesion	0-10 years	11-20 years	21-30 years	31-40 years	41-50 years	51-60 years	61-70 years	>70 Years	Total
Chronic sialadenitis	0	4	5	2	4	4	1	1	21
Chronic sialadenitis with sialodensis	0	0	0	0	1	0	0	0	1
Lymphoepithelial cyst	0	0	2	0	1	1	0	0	4
Monomorphic adenoma	0	0	0	1	0	0	0	0	1
Pleomorphic adenoma	0	2	7	6	13	8	4	0	40
Warthin's tumor	0	0	0	0	1	0	2	0	3
Basal cell adenoma	0	0	0	0	0	0	2	0	2
Seconadary amyloidosis of salivary	0	0	0	0	1	1	0	0	2
Mucoepidermoid carcinoma	0	1	2	3	2	1	1	0	10
Adenoid cystic carcinoma	0	0	1	0	1	4	0	0	6
Acinic cell carcinoma	0	1	0	0	0	0	0	0	1
Adeno ca of salivary	0	0	0	0	0	0	0	1	1
Salivary duct carcinoma	0	0	0	0	0	1	0	0	1
Epithelial Myoepithelial ca of salivary gland	0	0	0	0	0	0	1	1	2
Rossai doffman disease of parotid	0	0	1	0	0	0	0	0	1
Metastatic carcinoma of salivary	0	0	0	0	0	1	1	0	2
Non hodgkins lymphoma	0	0	0	0	1	0	0	0	1
Total	0	8	19	12	25	21	12	3	100

Discussion

The salivary gland disorders represent a distinct group of disorders affecting both the major and minor glands. Histologically salivary gland tumors represent the most heterogeneous group of tumors of any tissue in the body.

Among the major salivary glands Parotid is the most commonly involved (67%) in our study followed by submandibular gland and least common is minor glands. The study was comparable to Bashir S et al,³ Ahmed et al,⁴ and Rewusuwan et Al⁵ as described below.

Table no 4: Comparison of site of lesion of salivary gland

SITE	Bashir S et al ³	Ahmed et al ⁴	Rewusuwan et al ⁵	Present study
PAROTID	65.30%	70%	79%	67%
SUBMANDIBULAR	20.40%	18%	18%	18%
MINOR	4.02%	12%	2%	15%

Table no. 5: Comparative morphological spectrum of salivary gland lesion

Series	No. of cases	Neoplastic(%)	Non- Neoplastic(%)
Boccatto P et al ⁶ (1979-1995)	816	69.98	30.02
Jayaram G, Dashini M ⁷ (1993-2000)	141	74.5	25.5
Present study	100	73	27

Now according to type of lesion Neoplastic lesion(73%) are more common than Non neoplastic (23%)lesion which is comparable to Boccatto P et al⁶ and Jayaram G, Dashini M⁷ studies as shown in above table.Now we can observe that Among the non neoplastic lesion chronic sialadenitis is the most common lesion.

While discussing gender distributions in different studies it is noted that M:F ratio is 1.18:1 in Eric G et al,⁸ 1.28:1 in Das DK et al⁹ and 1:0.9 in present study which is comparable to most of the study and it shows that overall salivary neoplasm are mostly equally distributed in genders with slightly male predominance as in our study.

Table no.6: Comparison of incidence of neoplasm of salivary gland

Series	Total	Benign(%)	Malignant(%)
Bashir S et al ³	94	61.5	38.75
Shrestha S et al ¹⁰	176	62.5	32.5
Present study	100	65.75	34.24

So, from the above study it is indicated that Benign lesion(65.75%) are more common than Malignant lesion(34.24%) and present study correlate with the Bashir S et al³ and Shrestha S et al.¹⁰

In benign lesion pleomorphic adenoma is the most common lesion(40%) with peak age incidence in 5th decade with slightly female predominance. The second most common benign tumor is warthin's tumor(3%) predominantly found in males due to its strong association with smoking.In malignant neoplasm

maximum cases are mucoepidermoid carcinoma (10%) followed by adenoid cystic carcinoma(6%).Both the lesion have female preponderance.

Summary and Conclusion

This study is a retrospective study conducted in department of pathology civil hospital Ahmedabad from January 2014 to August 2018.

Total 100 no.of cases were studied.This study carried out to study overall histopathological lesion of

Salivary glands, to know the spectrum of benign and malignant lesion,sex ratio and age incidence among the variety of lesion.

Following observation are noted in present study.

1)During the study period total 100 cases were noted.

2)Parotid 67%is the most common site of salivary gland lesion.

3)In non neoplastic lesion chronic sialadenitis is most common lesion.

4)Benign lesion are more common than malignant lesion.

5)Among the benign lesion pleomorphic adenoma is most common and in malignant lesion mucoepidermoid carcinoma is most common.

6)Overall slightly male predominance but in malignancy female are more commonly affected than male.

7)Peak age incidence is 5th decade.

8)Histopathological examination is most important method to study salivary gland lesion.

Ethical Clearance- All procedures performed were in accordance with the ethical standards of the institution.

Source of Funding- Self

Declaration of Conflicts of Interest: The authors declare that they have no conflicts of interest.

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