

Evaluating Salivary Gland Lesions: Histopathological AnalysisArun Roy¹, Md. Imteyaz Alam², Poonam Kumari³¹Assistant Professor, Department of Pathology, Darbhanga Medical College and Hospital, Darbhanga, Bihar, India²Tutor Department of Pathology, Darbhanga Medical College and Hospital, Darbhanga, Bihar, India³Professor & Head, Department of Pathology, Darbhanga Medical College and Hospital, Darbhanga, Bihar, India

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Conflict of interest: Nil

Abstract**Aim:** The aim of the present study was to assess 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 for the period of 2 years. The source of data was from the biopsies of lesions of salivary glands that were received at Department of Pathology. A total of 50 cases were studied. The material required for the study was collected from the Department of Pathology.**Results:** Pleomorphic adenoma constitutes the most common lesion with 18 cases (36%) followed by Chronic sialadenitis 10 cases (20%). In non neoplastic lesion cystic lesion have slightly male predominance. In Benign lesion pleomorphic adenoma is most common. In malignant lesion Mucoepidermoid was most common. The age range was 17 to 75 years. Benign tumors are more common over malignant.**Conclusion:** Pleomorphic adenoma was the commonest salivary gland tumor observed in both sexes. Mucoepidermoid carcinoma was the most common among the malignant salivary gland tumors followed by adenoid cystic carcinoma.**Keywords:** Salivary gland lesions, Pleomorphic adenoma, Mucoepidermoid carcinomaThis is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.**Introduction**

Salivary glands (SGs) are compound exocrine glands which are mainly composed of a ductal and an acinar portion. They are classified into major and minor SGs which are found throughout the submucosa of oral cavity. [1] SGs lesions are ranged from non-neoplastic lesions like inflammation, cysts etc. to neoplastic benign or malignant lesions. Neoplasm of the SGs is relatively uncommon and represents less than 2% of all tumors of the human. [2] SGs tumors are of particular interest to both pathologists and surgeons because they show considerable variations with regard to biological and clinical behavior; and pose a diagnostic challenge due to their complex histopathological features. [3,4]

Salivary gland lesions form about 2-6.5% of all head and neck neoplasm in adults [5], and present as enlarged masses which are usually accessible for FNAC. They are not generally subjected to incisional or needle biopsy techniques because of the risks of fistula formation, or in the case of neoplasm, of tumour implantation. There is no evidence that these complications occur with FNAC.

[6] There are three pairs of major SGs (Parotid, Submandibular, and Sublingual glands) and in the submucosa of the oral cavity occur many minor salivary glands. [7] The causes of salivary gland swelling are different, like inflammatory process, cysts, or tumors, and often it is difficult to point out whether the swelling is arising from salivary gland proper or from adjacent structures such as lymph nodes, soft tissues, or skin. [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 aim of the present study was to assess 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 2 years. The source of data was from the biopsies of lesions of salivary glands that were received at Department of Pathology. A total of 50 cases were studied. The material required for the study was collected from the Department of Pathology.

Methods of collection of data: A total of 50 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

Table 1: Morphological spectrum of salivary gland lesion

LESIONS	NO.OF CASES	%
Chronic sialadenitis	10	20
Chronic sialadenitis with sialadenosis	1	2
Cystic lesion	2	4
Pleomorphic adenoma	18	36
Mucoepidermoid carcinoma	2	4
Adenoid cystic carcinoma	2	4
Warthin's tumour	2	2
Myoepithelial carcinoma	2	2
Epithelial-myoepithelial carcinoma	1	2
Basal cell adenoma	2	4
Rosai doff man disease of parotid gland	1	2
Monomorphic adenoma	1	2
Metastatic carcinoma	1	2
Acinic cell carcinoma	1	2
Secondary amyloidosis of salivary gland	1	2
Non hodgkins lymphoma of salivary	1	2
Salivary duct carcinoma	1	2
Adenocarcinoma of parotid gland	1	2
TOTAL	50	100

Pleomorphic adenoma constitutes the most common lesion with 18 cases (36%) followed by Chronic sialadenitis 10 cases (20%).

Table 2: Gender wise spectrum of salivary lesion

	MALE	FEMALE	TOTAL
NON-NEOPLASTIC LESION	7	6	13
Chronic sialadenitis	5	5	10
Chronic sialadenitis with sialadenosis	1	0	1
Cystic lesion	1	1	2
BENIGN NEOPLASTIC LESION	13	12	25
Pleomorphic adenoma	8	10	18
Warthin's tumour	2	0	2
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	6	6	12
Mucoepidermoid Carcinoma	1	1	2
Adenoid cystic carcinoma	1	1	2
Acinic cell carcinoma	1	0	1
Metastatic carcinoma	1	0	1
Adenocarcinoma of parotid	0	1	1
Myoepithelial carcinoma of salivary	1	1	2
Epithelial myoepithelial carcinoma	0	1	1
Non hodgkins lymphoma of salivary	0	1	1
Salivary duct carcinoma	1	0	1
TOTAL	26	24	50

In non neoplastic lesion cystic lesion have slightly male predominance. In Benign lesion pleomorphic adenoma is most common. In malignant lesion Mucoepidermoid was most common.

Table 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	2	3	1	1	1	1	1	10
Chronic sialadenitis with sialodensis	0	0	0	0	1	0	0	0	1
Lymphoepithelial cyst	0	0	0	0	1	1	0	0	2
Monomorphic adenoma	0	0	0	1	0	0	0	0	1
Pleomorphic adenoma	0	1	3	4	4	4	2	0	18
Warthin's tumor	0	0	0	0	1	0	1	0	2
Basal cell adenoma	0	0	0	0	0	0	2	0	2
Seconadary amyloidosis ofsalivary	0	0	0	0	0	1	0	0	1
Mucoepidermoid carcinoma	0	0	1	0	0	0	1	0	2
Adenoid cystic carcinoma	0	0	1	0	1	0	0	0	2
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 ofsalivary gland	0	0	0	0	0	0	1	1	1
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	1
Non hodgkins lymphoma	0	0	0	0	1	0	0	0	1

The age range was 17 to 75 years. Benign tumors are more common over malignant.

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.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). [10]

Pleomorphic adenoma constitutes the most common lesion with 18 cases (36%) followed by Chronic sialadenitis 10 cases (20%). In non neoplastic lesion cystic lesion have slightly male predominance. Ersoz C. et al, observed that SGs lesions were affected more in female. [11] In contrast to above, we observed that SGs lesions were found predominantly in male, which is similar to the finding reported by Cajulis RS. et al [12] and Gandhi SH. et al. [13] In Benign lesion pleomorphic adenoma is most common. In malignant lesion Mucoepidermoid was most common which was comparable to Boccato P et al [14] (Neoplastic lesions 69.98%) and Jayaram G, Dashini M [15] studies (Neoplastic lesions 74.5%). The age range was 17 to 75 years. Benign tumors are more common over malignant.

In clinical practice, the histopathological diagnosis of salivary gland tumors is made carefully through the assessment of the growth pattern of the tumor borders, histological architecture, cellular structure and differentiation, and components of the tumor stroma, along with the clinical information. Although hematoxylin-eosin (HE) staining is still the gold standard method used for diagnosing the salivary gland tumor, immunohistochemistry (IHC) can enhance the accuracy of such analysis, while its role may be limited. IHC can be a helpful tool when in cases to investigate the subjects that cannot be assessed by histological examination, such as the cell nature and differentiation status, cell proliferation, and tumor protein expression.

Conclusion

Pleomorphic adenoma was the commonest salivary gland tumor observed in both sexes. Mucoepidermoid carcinoma was the most common among the malignant salivary gland tumors followed by adenoid cystic carcinoma.

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