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Histopathological study of salivary gland lesions

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Abstract

Background: Salivary glands are exocrine organs that secrete components of saliva that both break down carbohydrates and lubricate the passage of food. A swelling involving the salivary gland may be as a result of inflammation, cyst or neoplasm. Aim of the study: The aim of the study was to find incidence and histopathological patterns of salivary gland lesions at tertiary care hospital civil hospital Ahmedabad, Gujarat between June 2016 to October 2018.

Material & Method: The present study comprised of a total 144 surgical resection specimens and biopsy of lesions of salivary gland and studied over a consecutive period of about 2 years and 5 months (June 2016 to October 2018) in a tertiary care hospital civil hospital Ahmedabad, Gujarat.

Conclusion: In the present study the commonest gland involved was the parotid gland in both the sexes. Male & female ratio m:f- 1.48:1. The benign tumours reported here were at younger age (21-50 years) and malignant tumours at older age (31-70 years). Among the benign tumours, pleomorphic adenoma was the commonest accounting for 51 % of all tumours. Among the malignant tumours, mucoepidermoid carcinoma was the commonest accounting for 7.84 % of all tumours.

Keywords: Tumors, Gland, Sexes.

Introduction

Salivary glands are exocrine organs that secrete components of saliva that both break down car Bo

hydrates and lubricate the passage of food. A swelling involving the salivary gland may be as a result of inflammation, cyst or neoplasm. 30% of parotid masses and 85% of submandibular masses are non-neoplastic. Tumours of salivary glands are uncommon and comprise less than 3% of all tumours of head and neck. Salivary glands are generally not subjected to incisional or core biopsy because of the possible risk of fistula, facial nerve injury and tumour implantation in the cases of neoplasms.

Aim of study

• To study the incidence and histopathological patterns of salivary gland lesions at tertiary care hospital civil hospital Ahmedabad, Gujarat between June 2016 to October 2018.

• To study the morphological and clinicopathological correlation of salivary gland lesions.

• To study the age and sex wise incidence of various salivary gland lesions.

• To compare the data and other investigations with similar studies.

Material and method

The present study comprised of a total 144 surgical resection specimens and biopsy of lesions of salivary gland and studied over a consecutive period of about 2 years and 5 months (June 2016 to October 2018) in a tertiary care hospital civil hospital Ahmedabad, Gujarat.

Descriptive cross-sectional study of cases including detailed clinical data of age, sex, clinical features, and type of lesion of patients were obtained from LIS system of hospital.

Result and observations

The present study was done from June 2016 – October 2018. The total number of 144 cases of salivary gland lesions were studied at tertiary care hospital civil hospital Ahmedabad, Gujarat.

Table 1: Total salivary gland lesions.

Lesions	Male	Female	Total no of cases	Percentage
Sialadenitis	25	17	42	29.17%
Benign salivary gland	2	1	3	2.08%
Benign lymphoepithelial cyst of salivary gland	3	4	7	4.86%
Benign cystic swelling - ranula	1	0	1	0.70%
Mucous retention cyst	1	2	3	2.08%
Mucus extravasation cyst	2	2	4	2.78%
Lipoma	4	0	4	2.78%
Basal cell adenoma	1	2	3	2.08%
Pleomorphic adenoma	28	24	52	36.11%
Warthin's tumor	7	0	7	4.86%
Mucoepidermoid carcinoma	5	3	8	5.56%
Adenoid cystic carcinoma	3	1	4	2.78%
Poorly differentiated carcinoma	1	1	2	1.38%
Polymorphous low grade adenocarcinoma	0	1	1	0.70%
Malignant round cell tumour	1	0	1	0.70%
Salivary duct carcinoma- high grade	1	0	1	0.70%
Acinic cell carcinoma.	1	0	1	0.70%
Total	86	58	144	100%

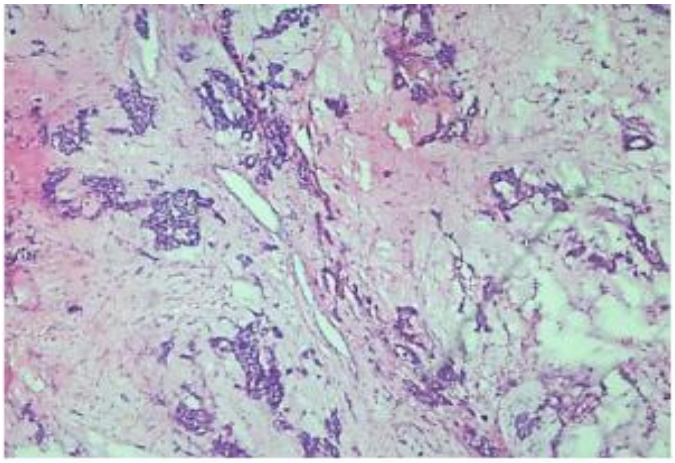

Figure 1: Pleomorphic adenoma.

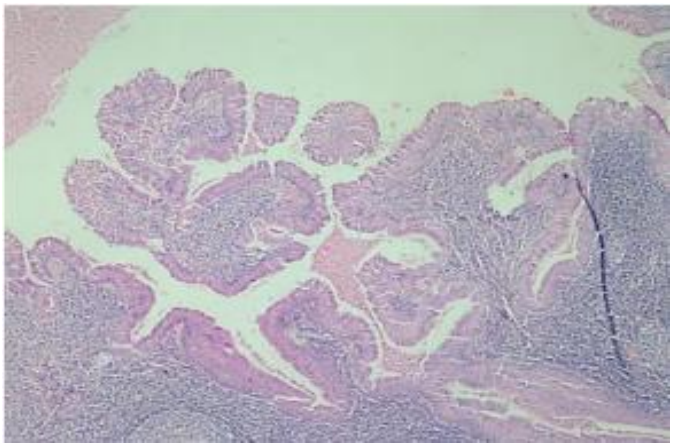

Figure 2: Warthin's Tumour.

Age(years)	Number of cases	Percentage
0-10	7	4.86%
11-20	15	10.41%
21-30	35	24.30%
31-40	21	14.58%
41-50	38	26.38%
51-60	16	11.11%
61-70	9	6.25%
71-80	3	2.10%
Total	144	100%

Table 2: Age distribution pattern in salivary gland lesions.

Age(years)	Non neoplastic lesions	Benign	Malignant
0-10	4	3	0
11-20	4	9	2
21-30	14	18	3
31-40	6	15	0
41-50	8	24	6
51-60	3	8	5
61-70	2	6	1
71-80	1	1	1
Total	42	84	18

Table 3: Age wise distribution of salivary gland lesions.

Sex	Number of cases	Percentage
Male	86	59.72%
Female	58	40.28%
Total	144	100%

Table 4: Sex distribution pattern in Salivary gland lesions

Site	Number of cases	Percentage
Parotid	80	55.56%
Submandibular	46	31.94%
Sublingual	6	4.16%
Minor salivary gland	12	8.33%
Total	144	100%

Table5: Site distribution pattern in salivary gland lesions.

	Number of cases	Percentage
Non neoplastic lesions	42	29.16%
Neoplastic lesions-benign	84	58.33%
Neoplastic lesions-malignant	18	12.50%
Total	144	100%

Table 6: Incidence of neoplastic and non-neoplastic lesion.

Discussion

Salivary gland tumours are relatively uncommon and represent less than 2% of all human tumours. Approximately 65% to 80% arise within the parotid.

Approximately 15% to 30% of tumours in the parotid glands are malignant. By contrast, approximately 40% of submandibular, 50% of minor salivary gland, and 70% to 90% of sublingual tumours are cancerous. Thus, the likelihood that a salivary gland tumour is malignant is inversely proportional, roughly, to the size of the gland.

In the present study, salivary gland lesions were common in the 5th decade followed by 3rd decade which was similar to study by Chatterjee MT, Panda PK. The occurrence of the salivary gland lesions was common in male patients as in the study conducted by DAS DK et a178(1994-1999) but unlike the study conducted by Roland NJ et al80(1989-1992) in which the lesions were common in female patients.

Table 7: Frequency of Neoplastic and Non-Neoplastic salivary gland lesions reported by various studies.

Sr. No.	Series	No. of cases	Neoplastic (%)	Non- Neoplastic (%)
1	Laishram RS, Kumar KA104 (2002-2011)	104	75	25
2	Jayaram G, Dashini M106 (1993-2000)	141	74.5	25.5
3	Present study	144	70.83	29.16

Non-neoplastic lesions

In this study, out of total 144 cases, 42 cases were non neoplastic lesions. Sialadenitis was the majority of the cases including both acute sialadenitis (1 case) and chronic sialadenitis (41 cases) represented 29.16% of all cases. Submandibular gland was the most common site involved.

It showed male predilection and most common in 3rd decade of life.

Neoplastic lesions

In the present study 102 cases, out of total 144 cases were neoplastic lesions. 84 cases were benign and 18 were malignant. In this study, pleomorphic adenoma was most common tumour accounting for 51% of all tumours and peak incidence was reported in 5th decade with male predominance. Parotid gland was the most common site involved by pleomorphic adenoma.

In the benign category pleomorphic adenoma was the commonest followed by Warthin's tumour and benign lymphoepithelial cyst comprising 6.86% (7 cases) of all neoplastic lesions.

While from malignant lesions mucoepidermoid carcinoma was the most common tumour accounting 7.84% (8 cases) of all tumours and peak incidence was reported in 5th decade with male predominance. Second common tumor reported in present study was adenoid cystic carcinoma.

Table 8: Comparison of Malignant salivary gland lesion.

Lesions	Kishan Bookya et al109	Present study
Mucoepidermoid carcinoma	15(50%)	8(44.44%)
Adenoid cystic carcinoma	9(30%)	4(22.22%)
Salivary duct carcinoma	-	1(5.55%)
Carcinoma ex pleomorphic adenoma	2(6.6%)	-
Poorly differentiated carcinoma	2(6.6%)	2(11.11%)
Polymorphus low grade adenocarcinoma	-	1(5.55%)
Malignnat round cell tumor	-	1(5.55%)
Acinic cell carcinoma	2(6.6%)	1(5.55%)

Conclusion

In the present study,

❖ 80 cases (55.56%) in parotid gland, 46 cases (31.94%) in submandibular gland, 6 cases (4.16%) in sublingual gland and 12 cases (8.33%) in minor salivary gland were reported. The commonest gland involved was the parotid gland in both the sexes.

❖ Majority of cases reported in the age group of 21-60 years and there were 86 males (59.72%) and 58 females (40.28%). Male & female ratio m:f-1.48:1.

❖ The benign tumours reported here were at younger age (21-50 years) and malignant tumours at older age (31-70 years).

❖ There were 42 cases (29.16 %) of non-neoplastic lesions and 102 cases (70.83%) of neoplastic lesions.

❖ Among the benign tumours, pleomorphic adenoma was the commonest accounting for 51 % of all tumours.

❖ Among the malignant tumours, mucoepidermoid carcinoma was the commonest accounting for 7.84 % of all tumours.

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