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Original Research Article

Histomorphological Study of Salivary Gland Lesions: A Study at Tertiary Care Centre

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Abstract:

Introduction: Salivary gland tumors are uncommon. They account for about 3 % of all head and neck tumors. Two third of the tumors are benign and one third are malignant. The parotid gland is most frequently involved, while minor salivary glands and submandibular glands are less commonly affected. Since benign tumors are common, the malignant tumor is important to diagnose for proper treatment and clinical management of patient.

Objective: The objectives of this study are 1) to diagnose & classify various salivary gland tumors into non-neoplastic lesions & neoplastic lesions based on their histomorphology & 2) to find out which salivary gland affected more & which lesions (non-neoplastic lesions & neoplastic) are common.

Materials and Method: Present study was done at tertiary care hospital and medical college, NAMO Medical Education & Research Institute and Shree Vinoba Bhave Civil Hospital, Silvassa. The period of study is for 3 years. (2020-2022). Total 40 cases were studied with salivary gland lesions. The specimens were properly fixed with 10% of formalin and sections were stained with hematoxylin and eosin & then Histopathological examination done to classify salivary gland lesions.

Results: In the present study out of 40 studied cases 28 cases are neoplastic and 12 cases are non-neoplastic. Out of 28 neoplastic cases 20 cases are benign and 8 cases are malignant. The most common benign tumor is pleomorphic adenoma. The most common malignant tumor is mucoepidermoid carcinoma. The most commonly involved salivary gland is parotid gland. The most common non-neoplastic lesion is chronic sialadenitis.

Conclusion: Histopathological examination is mainstay for proper diagnosis of salivary gland lesions and to differentiate into neoplastic and non-neoplastic lesions for better clinical management and treatment of the patients.

Keywords: Salivary Gland Tumors, Neoplastic and Non-Neoplastic Lesions and Histomorphological Study.

Introduction

Salivary gland tumors are uncommon. They account for about 3% of all head and neck tumors. The majority of these tumors occur during fourth and fifth decades of life. Two third tumors are benign and one third are malignant. [1] The non-neoplastic lesions of salivary gland can clinically present as tumors/swellings and pathological findings may have resemblance with other tumors of salivary gland. Non-neoplastic lesions consist of inflammatory disorder due to infection, autoimmune or granuloma related, obstructive, idiopathic and developmental disorders. [2,3] Overall the incidence of salivary gland neoplasms show high female preponderance than male.[4] The parotid gland is most frequently involved while minor salivary glands are less commonly involved. The commonest benign tumor is pleomorphic adenoma which frequently involves the parotid glands, followed by submandibular and minor salivary glands. Mucoepidermoid carcinoma is the most common malignant tumor of salivary gland. [1]

Objective

The objectives of this study are 1) to diagnose & classify various salivary gland tumors into non-neoplastic lesions & neoplastic lesions based on their histomorphology & 2) to find out which salivary gland affected more & which lesions (non-neoplastic lesions & neoplastic) are common.

Material and Methods

The present study was done in the Department of Pathology, NAMO Medical Education & Research Institute and Shree Vinoba Bhave Civil Hospital Silvassa, Dadra and Nagar Haveli. The study period was from Jan 2020 to December 2022 (3 years period). The study was of prospective type. Total 40 specimens of salivary glands received in histopathology laboratory were grossly examined and sectioned after 10% formalin fixation was done. Specimen sections processed then embedded in paraffin followed by histopathology slide preparation and these slides then stained with routine Hematoxylin and Eosin stain. The Alcian Blue stain also done in some cases wherever required.

The Microscopic Examination of stained slides was done by histopathologist to diagnose & classify various salivary gland tumors into non-neoplastic lesions & neoplastic lesions based on their histomorphology.

Both non-neoplastic and neoplastic lesions were included in the study and Neoplastic lesions were classified according to the latest WHO classification of salivary gland tumors. Data of each salivary gland case was entered in Microsoft excel for analysis.

Results and Observations

Table 1: Showing salivary gland lesions reported in the present study.

Salivary Gland Lesions	Number of cases and percentage (%)
Neoplastic lesions	30 (75%)
Benign tumor	25 (83%)
Pleomorphic adenoma	20 (66.7%)
Warthins tumor	3(10%)
Basal cell adenoma	1(3.33%)
Benign spindle cell tumor	1(3.33%)
Malignant tumor	5(17%)
Mucoepidermoid carcinoma	3(10%)
Adenoid cystic carcinoma	1(3.33%)
Adenocarcinoma	1(3.33%)
Non-neoplastic Lesions	10(25%)

Table 2: Showing non-neopastic and neoplastic cases incidence of present study and its correlation with other study.

	Present study	Anushree CN et al.[5]	Ma'aita et al.[6]
Non- neoplastic	75%	70%	68.4%
Neoplastic	25%	30%	31.6

Among the Neoplastic cases, benign lesions (83%) were common than malignant (17%), which were also observed by Anushree CN et al.[5] and Sushmita et al.[7], Ali et al.[8] and Nepal A et al.[9]. Shown in the table 3.

Table 3: Showing Benign and Malignant cases incidence of present study and its correlation with other studies.

	Present study	Anushree CN et al.[5]	Sushmita et al.[7]	Ali et al.[8]
Benign Neoplasm	83%	40%	65%	74%
Malignant Neoplasm	17%	30%	35%	36%

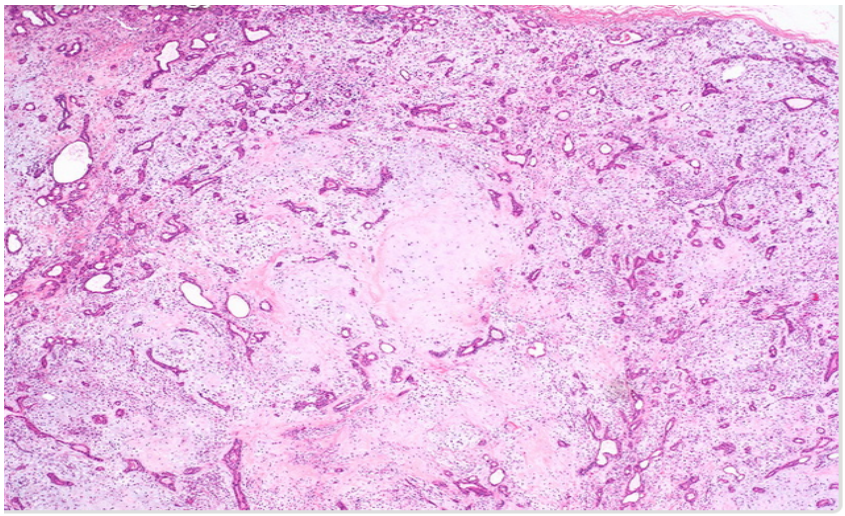

Figure 1: Pleomorphic adenoma. Picture showing - epithelial and myoepithelial cells arranged in cords, and tubules with chondromyxoid stroma. (H and E stain, 10X view)

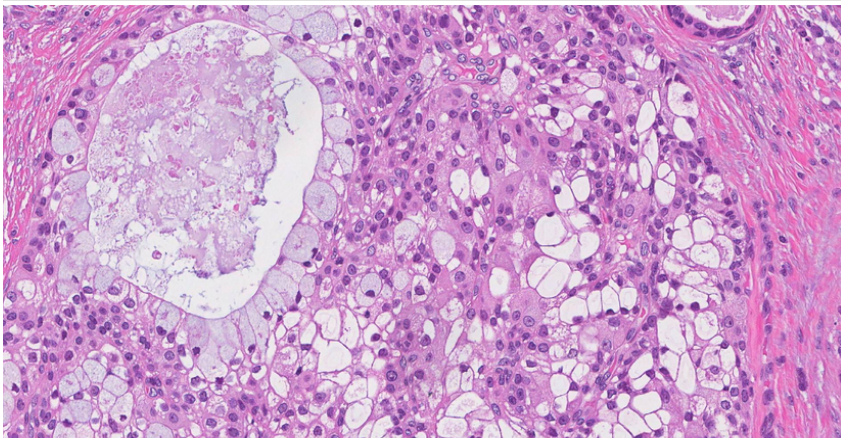

Figure 2: Mucoepidermoid carcinoma. Picture showing large mucus cells forming cyst and intermediate and squamous cells in the solid nests. (H and E stain, 10X view)

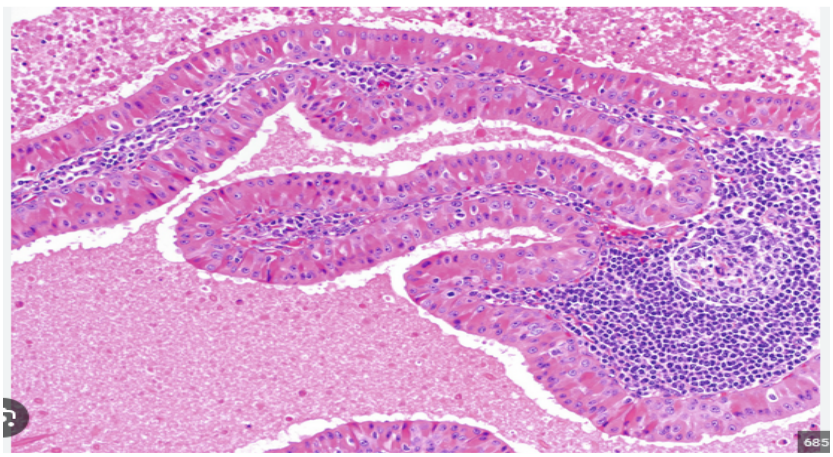

Figure 3: Warthins tumor (low grage type). Picture showing papillary cystic structures lined by bilateral oncocytic epithelial cells and surrounded by lymphoid stroma including germinal centers. (H and E stain, 10X view)

In the present study, total 40 cases of salivary gland were studied; 30 cases (75%) were neoplastic and 10 cases (25%) were non-neoplastic. Out of 30 cases 25 were Benign (83% among neoplastic) and 5 were malignant (17% among neoplastic). Pleomorphic Adenoma was the commonest benign tumor followed by Warthin tumor. Mucoepidermoid carcinoma was the commonest malignant tumor of salivary gland. Parotid gland was the most commonly involved gland followed by minor salivary gland and submandibular gland.

Discussion

Salivary gland tumors are uncommon. They account for about 3 % of all head and neck tumors. [1]. In the present study, we observed that out of 40 cases, majority were neoplastic (75%) followed by non-neoplastic lesions (25%), which are also observed by Anushree CN [5] and Ma'aita et al.[6] same is shown in the table 2.

In the present study, we concluded that pleomorphic adenoma was the commonest benign tumor of major and minor salivary gland followed by Warthin tumor. The similar observation were done by the Anushree CN et al.[5], Sushmita et al.[7], Nagarkar et al.[10] and Vargas et al [11] .

The mixed type of histology was the commonest histology we observed in pleomorphic adenoma which is similar to study Sushmita et al.[7] and Bhavani et al [12] who also reported the mixed type to be commonest in the pleomorphic adenoma.

In the present study, most common malignant tumor diagnosed was the mucoepidermoid carcinoma which is similar to the Anushree CN et al.[5], Sushmita et al [7], Ali et al.[8], Richardson et al.[13].

In the present study, parotid gland was the commonest salivary gland involved followed by submandibular and minor salivary glands, which is similar to study of Sushmita et a.l[7] and Vergas et al.[11].

In the present study, benign tumors were commonest in the 4^{th} and 5^{th} decades, while malignant tumors were common in the 6^{th} decade which is similar to the Sushmita et al.[7] and Bhavani et al.[12].

In the present study, females were commonly affected than males & it is similar to the study of patel KG et al.[15] study. Adenoid cystic carcinoma which was the second most common malignant tumor & minor salivary glands commonly involved by this tumor. This finding is similar to the Bhavani et al.[7], Rewusuwan et al study.[14]

Conclusion

Salivary gland tumors are rare neoplasm, but histopathological findings are important to differentiate between neoplastic and nonneoplastic lesions. The histomorphological findings are essential to establish final diagnosis, typing and for grading of the salivary gland neoplasm.

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