Original Article

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Clinical and Histopathological Spectrum of Salivary Gland Lesions in A Tertiary Center

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ABSTRACT

Background: The objective of this study was to determine the clinical pattern and histopathological features of salivary gland lesions (SGL) in patients presenting to a tertiary hospital in Southwest Saudi Arabia.

Methods: A retrospective study was conducted in histopathology section of Department of Laboratory Medicine from January 2014 to February 2018 on tissue specimens from salivary gland lesions. The histopathological diagnosis was made according to World health organization classification (2017) based on light microscopy followed by special stains and immunohistochemistry wherever necessary.

Results: A total of 70 specimens were received in hospital during this period. These comprised of 8 inflammatory lesions and 62 tumors. Salivary gland tumors involved 29 males and 33 females, male: female ratio= 0.8:1 with mean age of 44.5 years. 46 (74.2%) were benign and 16 (25.8 %) were malignant. Parotid gland was involved in 47, submandibular gland in 4, sublingual gland in 3 and minor salivary glands in 8 cases.

Conclusions: Our study revealed that tumors are the commonest lesions in specimens of salivary gland masses with pleomorphic adenomas being the predominant tumor (51.6%) . Parotid was the most commonly involved gland with majority of the tumors being benign (82.9%). Submandibular gland was involved by benign lesions in 87.5 % cases out of which 50 % were inflammatory in nature. Sublingual and minor salivary glands were predominantly affected by malignant tumors constituting 70 % of cases.

Keywords: *Salivary Gland Lesions, Tumors, Histopathology*

Introduction

Salivary glands (SG) are exocrine organs responsible for the production and secretion of saliva. They comprise the three paired major glands the parotid (PG), submandibular (SMG) and sublingual (SLG) and the innumerable minor salivary glands (MSG) distributed throughout the mucosa of the oral cavity. Their neoplasms are relatively uncommon and represent less than 2% of all tumors in humans. Malignancy is inversely proportional to the size of the gland [1]. The objective of this study was to determine the clinical pattern and histopathological features of salivary gland lesions (SGL) in patients presenting to this tertiary hospital which caters to southwestern region of Kingdom of Saudi Arabia.

Material and Methods

A retrospective study was conducted in histopathology section of Department of Laboratory Medicine from January 2014 to February 2018 on tissue specimens from salivary gland lesions . The histopathological diagnosis was made according to World health organization (WHO) classification based on light microscopy followed by special stains and immunohistochemistry wherever necessary.The clinical data was obtained from the records of the patients.

Results

A total of 70 specimens were received in hospital during this period . These comprised of 8 inflammatory lesions and 62 tumors .Inflammatory lesions were predominantly sialadenitis (6 cases) , cyst (1 case) and abscess (1 case) . Salivary gland tumors (SGT) involved 29 males and 33 females , male : female ratio being 0.8:1 with mean age of 44.5 years .The age ranged from 1 to 85 years with highest incidence found between 41 to 50 years (18 cases) followed by 31-40 years (15 cases) . In our study of 62 tumors ,46 (74.2%) were benign and 16 (25.8 %) were malignant They were classified into *malignant epithelial tumours-12* (Adenoid cystic carcinoma : 2 , Polymorphous adenocarcinoma : 2 , Mucoepidermoid carcinoma : 2, Acinic cell carcinoma: 1 , Secretory carcinoma : 1 , Salivary duct carcinoma:1 , Squamous cell carcinoma: 2 , Carcinoma – Not otherwise specified: 1) , *benign epithelial tumours -44* (Pleomorphic adenoma : 32 , Warthin tumor: 6 , Basal cell adenoma : 2 , Myoepithelioma: 2 , Oncocytoma: 1 , Ductal papilloma:1) , *benign soft tissue lesions - 2* (Sialolipoma:2) , *hematolymphoid tumours- 3* (Non Hodgkin Lymphoma :2 , Hodgkin Lymphoma :1), *malignant mesenchymal tumor-1* (Sarcoma:1) . PG was involved in 47, SMG in 4 , SLG in 3 and MSG in 8 cases of tumors.

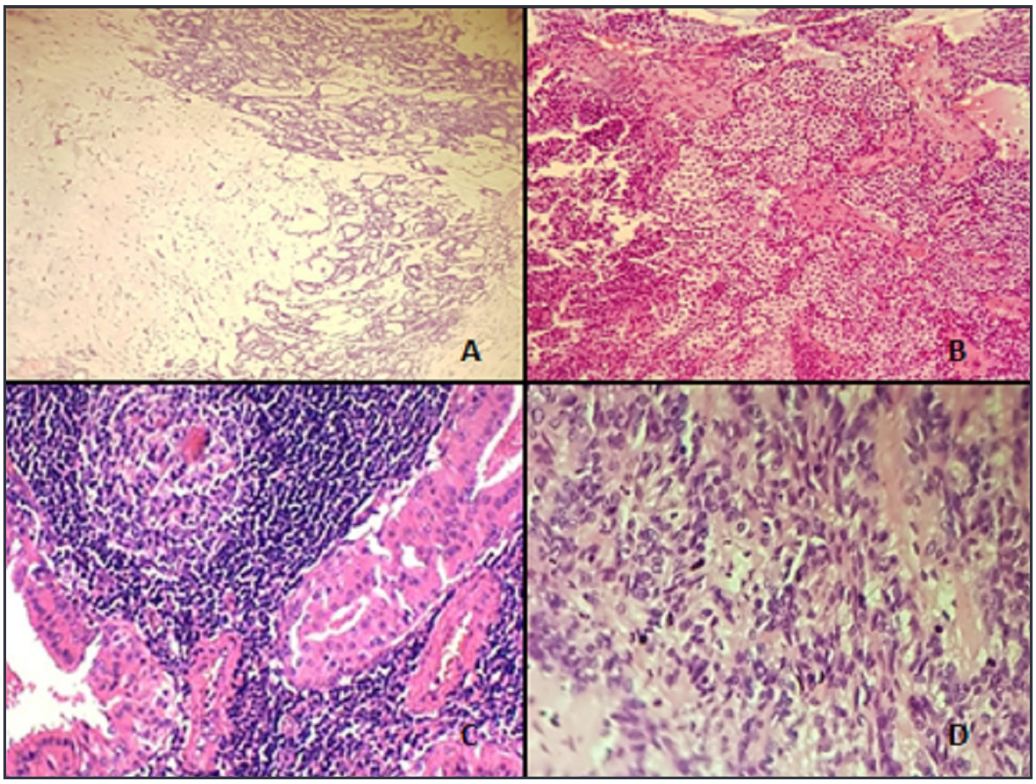

Fig. 1: A,B.Pleomorphic adenoma C.Warthin tumor D. Myoepithelioma (Hematoxylin and Eosin).

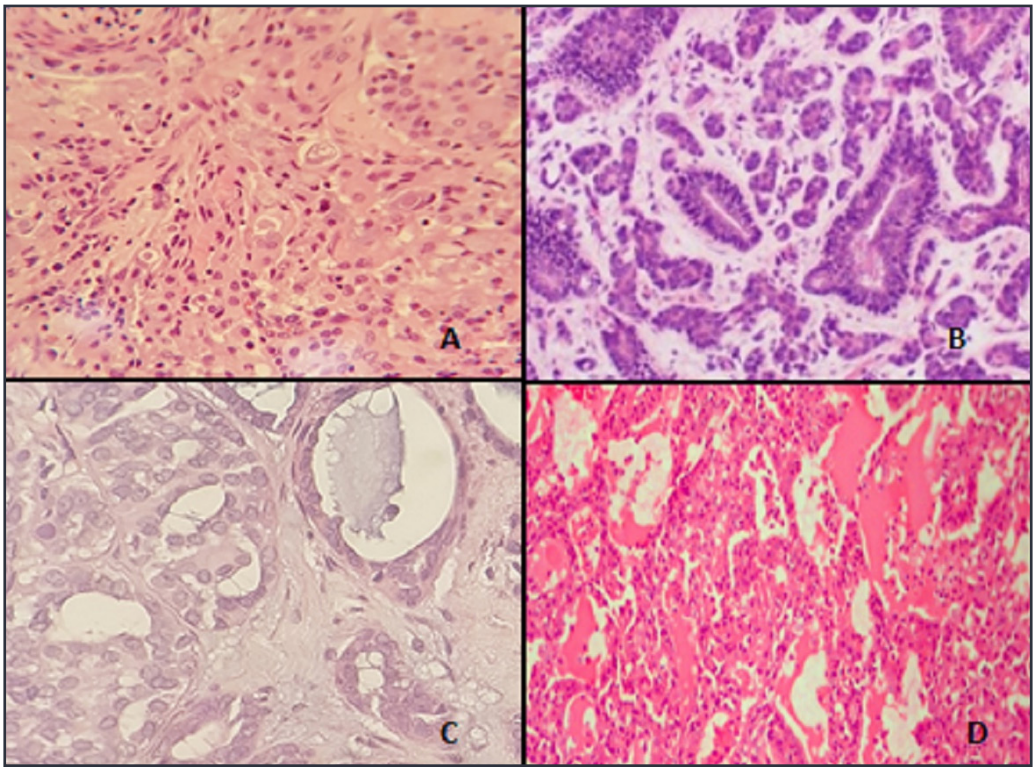

Fig. 2: A.Mucoepidermoid carcinoma B.Adenoid cystic carcinoma C.Cribriform carcinoma D.Secretory carcinoma (Hematoxylin and Eosin)

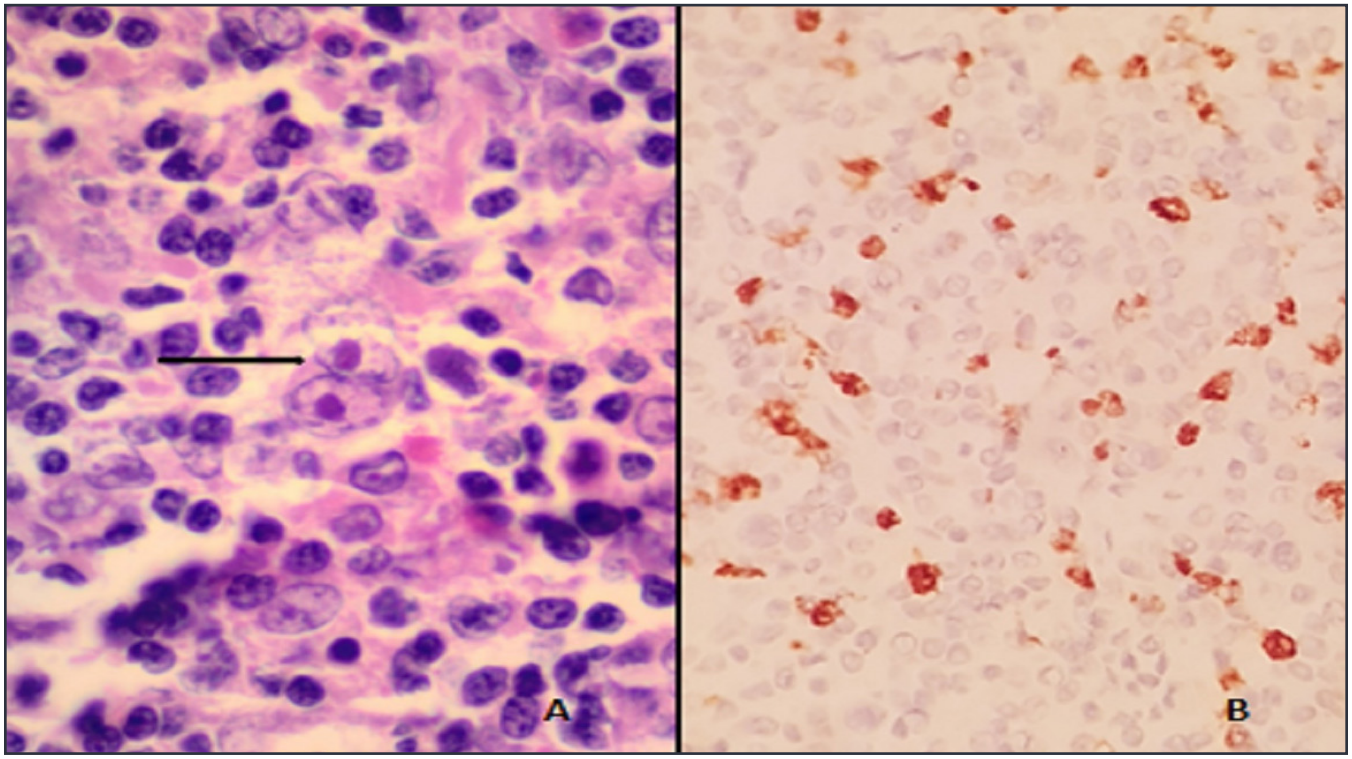

Fig. 3: Hodgkin lymphoma .Sections showing scattered mono and multinucleated Reed Sternberg cell(arrow) in a background of lymphocytes, histiocytes and few eosinophils (H and E x40X) . D. Immunohistochemical study showing CD30 positivity in malignant cells (CD30 x 20X).

Discussion

SGLs are uncommon and tumours involving them are relatively rare and morphologically diverse group of lesions. Their classification is complex as it includes many different entities. According to latest WHO classification the major criteria is to differentiate between benign and malignant tumors. The term "low-grade" has been omitted and the grouping of rare epithelial carcinoma subtypes that share similar pathological and clinical characteristics under "adenocarcinoma, NOS", has been done. Mammary analogue secretory carcinoma (SC) has been included as the only new entity in this edition [2].

Acute sialadenitis is usually viral and self limiting however suppurative sialadenitis is generally caused by bacteria. We had 1 case each of acute sialadenitis and parotid abscess .Chronic sialadenitis in the form of mild lymphocytic infiltration of the major salivary gland unaccompanied by clinical symptoms is relatively common [3].We had 5 cases of chronic sialadenitis of which 4 involved submandibular gland and 1 sublingual gland . Benign lymphoepithelial cysts are lesions of the parotid or upper cervical lymph nodes characterized by unilocular or multilocular cystic formations lined by glandular or squamous epithelium surrounded by a florid lymphoid hyperplasia with prominent germinal centers[4] The amount of the lymphoid component is variable[5]. There was 1 case of simple parotid cyst in our study.

The annual incidence of salivary gland tumors (SGT) is less than 1/100000 population and they represent less than 5 % of head and neck tumors [6]. In our study of 62 tumors 46 (74.2%) were benign and 16 (25.8 %) were malignant which goes well with other studies where benign tumors constituted (78.1%) [7] and 67.8% [8] . 29 were males and 33 were females with male:female =0.8:1 which goes well with other studies [8,9] but is different from ratio observed in a Middle East study of 1.02:1 [7].

Pleomorphic adenoma (PA) a benign tumour with variable cytomorphological and architectural manifestations is the most common SGT. We had 32 cases constituting 69.5 % of benign and 51.6 % of all cases. This goes with other studies where PA constituted 54.3% all SGTs [7] 47.7% [8] but lower as compared to a study from India where it constituted 86% [10] .Warthin tumour is the second most common SGT, accounting for approximately 5-15% of all tumors [2].In our study also it constituted 9.6% of all cases.

There was equal incidence of mucoepidermoid, adenoid cystic, polymorphous adenocarcinoma and squamous cell carcinoma (SCC).However in other studies adenoid cystic carcinoma was the most frequent malignant tumor (6.6%), followed by the mucoepidermoid carcinoma (4.7%)[8]. Polymorphous low grade adenocarcinoma (PLGA) has a strong predilection for the MSG of the hard and soft palates. PLGA is characterized by cellular uniformity, architectural diversity, and an infiltrative growth pattern including perineural invasion [11] . The 2017 edition of the Blue Book has abandoned the qualifier low grade and designates these tumours simply as polymorphous adenocarcinomas. Cribriform adenocarcinoma of minor salivary glands (CAMSG) is a salivary gland carcinoma that often arises in the tongue and especially the tongue base [12] WHO has incorporated CAMSG within the polymorphous adenocarcinomas family until their discriminating features are sufficiently sharp to warrant separation as distinct tumor entity [13].We had 2 cases of polymorphous adenocarcinomas of which 1 was labeled as CAMSG. Primary salivary gland SCC is very rare. The majority of published cases constitute squamous differentiation of other salivary gland carcinomas or metastasis from dermal primary [2] . There were 2 cases of SCC , one presented as ulcerated and fungating parotid mass for 7 years and was considered to be dermal in origin whereas the other was considered as primary associated with squamous metaplasia and no dermal involvement. Secretory carcinoma is a generally low grade salivary gland carcinoma characterized by morphological resemblance to mammary secretory carcinoma with ETV6 -NTRK3 gene fusion .We had 1 case of secretory carcinoma which is a new entity as per WHO classification. Salivary gland lymphomas are uncommon and they constitute 1 .7- 6% of all salivary gland neoplasms [2] .We had 3 cases of lymphoma (4.8 %), 2 of NHL and 1 of HL which goes well with these findings. HL arose in intraparotid lymphnode with normal glandular tissue.

PG was predominantly affected gland involving 47 cases (75.8%), MSG - 8 cases (12.9%), SM - 4 cases (6.4%) and SL - 3 cases(4.8%).This goes well with a western study [14] .However it is different from a Middle Eastern study where PG ,MSG and SMG showed affection of 57.5%, 28.5%, 13% respectively [7] and African study [8]. In PG 39 (82.9%) cases were benign and 8 (17.0%) were malignant which goes well with a study where a ratio of 4:1 was found between benign and malignant tumors. Minor SG showed 50% malignant tumors ,SMG :25%, SLG :100% similar to 56%, 27%, 100% in another study [7]. Western literature reports as much as 50% of MSG being malignant which goes with our findings [14].

Conclusions

Our study revealed that tumors are the commonest lesions in specimens of salivary gland masses with pleomorphic adenomas being the predominant tumor (51.6%) . Parotid was the most commonly involved gland with majority of the tumors being benign (82.9%). Submandibular gland was involved by benign lesions in 87.5 % cases out of which 50 % were inflammatory in nature . Sublingual and minor salivary glands were predominantly affected by malignant tumors constituting 70 % of cases.

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