Original article

SALIVARY GLAND TUMOURS IN A SOUTH-SOUTH NIGERIAN TEACHING HOSPITAL: AN 8-YEAR REVIEW

Omitola O G [1], Iyogun C A[1], Osagbemiro BB [2]

[1]Department of Oral Pathology and Oral Biology, Faculty of Dentistry, University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers State.
[2]Department of Preventive Dentistry, University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers State.

ABSTRACT

BACKGROUND: Salivary gland tumours consist of a variety of benign and malignant lesions with different patterns of presentation. The pattern of presentation in the University of Port Harcourt Teaching Hospital (UPTH) has not been reported in English literature.
OBJECTIVES: The objective of this study is to determine the age, gender, sites and histological types of salivary gland tumours seen in the UPTH and to compare their pattern of presentation to those reported.
MATERIALS AND METHODS**:** The records of all patients diagnosed of salivary gland tumours at the Oral Pathology Department of UPTH from January 2008 to December 2015 were retrospectively reviewed. The variables analyzed from the case notes of these patients were; the age, gender, site and histological types.
RESULTS: The total number of biopsies during this period was 374 and 29 (7.8%) of patients presented with salivary gland tumours, consisting of 20 (69%) female and 9 (31%) male. The age of the patients range from 10-68 years with a mean age of 44.3 (±15.3 SD) years. Over 70% of the patients were above 30 years in age. The most common site was the palate with 18 (62.1%) cases and the least affected site was the tongue with 1 (3.4%) case. Majority of the salivary gland tumours were malignant with 28 (96.6%) cases, while only 1 (3.4%) case was benign. Mucoepidermoid carcinoma was the most prominent tumour followed by polymorphous low grade adenocarcoma.
CONCLUSION: Salivary gland tumours are relatively rare in our environment especially the benign lesions. Most cases affected patients above 30 years of age and the minor salivary glands of the palate are mostly affected. Mucoepidermoid carcinoma was the most common histologically diagnosed lesion.

Keywords: Salivary gland, Tumours, Histological types

Correspondence address:

Dr O. G. Omitola

Department of Oral Pathology and Oral Biology, Faculty of Dentistry, University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers State.
femomit@yahoo.co.uk
+238055225242

INTRODUCTION

Salivary glands are exocrine glands which are associated with the oral cavity. There are two groups; the major salivary glands (parotid, submandibular and sublingual) and the minor salivary glands (these are distributed throughout the oral cavity and the nasopharynx.[1] The tumours of the salivary glands are heterogeneous

and are made up of both benign and malignant lesions. They are relatively rare and constitute about 2% of all human tumours [2] and about 10% of head and neck tumours. [3]

The prevalence of these lesions varies in different parts of the world and among different races. Also the types and proportions of lesion seen vary from Centre to Centre.[4] The Dental Centre of University of Port Harcourt Teaching Hospital (UPTH) attained a tertiary status about 9 years ago, therefore, there is no baseline data about the salivary gland tumours in this Center. This study was designed to determine the age, gender, sites and histological types of salivary gland tumours seen in the UPTH and to compare their pattern of presentation to those reported.

MATERIALS AND METHODS

This was a retrospective study of all salivary gland tumours diagnosed at the Oral pathology department of the Dental Centre, UPTH from January 2008 to December 2015. The slides of all patients were retrieved from the archive to confirm the diagnosis by the two Oral Pathologists in the Centre. Records of patients that were re-confirmed as salivary gland tumours were retrieved from the oral pathology reports sheet.

Information collected for each patient include, age, sex, site of lesion and the final diagnosis. These information were analyzed using SPSS version 21. Descriptive statistics were presented and cross tabulation was done to see the differences between groups. The differences were tested using Chi-square and level of significance was set at $P<0.05$.

RESULTS

Twenty nine (29) patients presented with salivary tumours out a total of 374 biopsies done in the Oral Pathology Department during the study period. The prevalence rate for these tumours in our Centre was 7.8%. There were 20 (69%) female and 9 (31%) male with salivary gland tumour giving a male to female ratio of 1:2.2. The age of the patients range from 10 - 68years with a mean age of 44.3 (±15.3 SD) years. Over 70% of the patients were above 30 years in age with the highest frequency of 24.2% occurring in patients within the 7th decade of life (Table 1).

The most common site was the palate with 18 (62.1%) cases and the least affected site was the tongue with only 1 (3.4%) case (Fig 1), The lesions were majorly of minor salivary gland in origin. Majority of the salivary gland tumours were malignant with (n=28, 96.6%) while only 1 (3.4%) case was benign. The only benign lesion was a case of pleomorphic adenoma which occurred in the submandibular gland of a 32 year old female (Fig 2). Mucoepidermoid carcinoma (n=13, 44.8%) [Fig 3] was the most prominent tumour followed by polymorphous low grade adenocarcoma (n=7, 24.1%) [Fig 4]. Carcinoma ex-pleomorphic adenoma (n=1, 3.4%) and pleomorphic adenoma (n=1, 3.4%) were the least common lesions (Table 2).

Most lesions were predominant in the female except the only case of carcinoma ex-pleomorphic adenoma which occurred in a male patient and adenocarcinoma which has equal sex predilection (Table 2). The observation is however, not statistically significant (p value =0.468)

Table 1: Patients distribution by age groups

Age group	Frequency (%)
10-20	1 (3.4)
21-30	6 (20.6)
31-40	6 (20.6)
41-50	5 (17.4)
51-60	4 (13.8)
61-70	7 (24.2)
Total	29 (100)

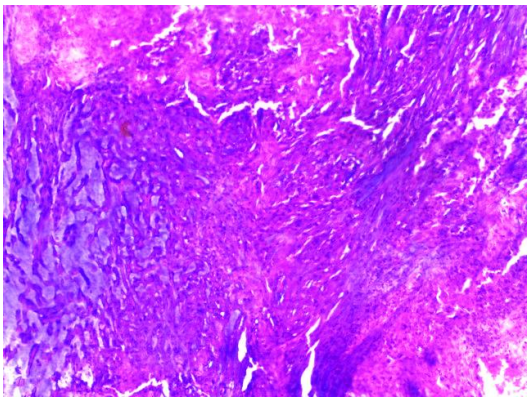

Figure 2: Pleomorphic adenoma showing myxoid and trabeculae pattern (H&E, X100)

Figure 1: Bar chart showing the sites of the lesions

Table 2: Distribution of patients by gender and histological diagnosis

Histological Diagnosis	M	F	Total (%)
Adenocystic carcinoma	0	3	3 (10.3)
Adenocarcinoma (NOS)*	1	1	2 (6.9)
Basal cell adenocarcinoma	0	2	2 (6.9)
Carcinoma ex-pleomorphic adenoma	1	0	1 (3.4)
Mucoepidermoid carcinoma	5	8	13 (44.8)
Polymorphous low grade adenocarcinoma	2	5	7 (24.1)
Pleomorphic adenoma	1	0	1 (3.4)
Total	9 (31)	20 (69)	29 (100)

*NOS: Not otherwise specify P value= 0.468

DISCUSSION

Previous reports indicate that salivary glands constitute about 2% of all human tumours [2] and about 10% of tumours of the head and neck region. [3,5] The prevalence of these lesions varies among different populations. In the present study, the prevalence of salivary gland tumours among all biopsies performed was 7.8%. This value is higher than 5.4% reported by Bahra et al [6] and 6.3% reported by Ladeinde et al [5] in similar studies from Kenya and Lagos respectively. However, the prevalence in this study is lower than 13.7% reported in the United Kingdom (UK). [7]

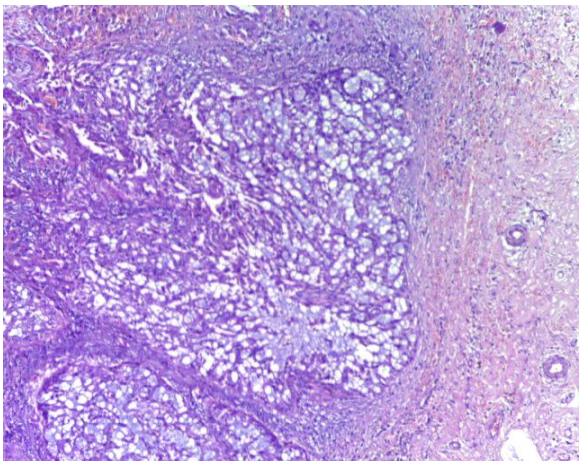

Figure 3: Low grade mucoepidermoid carcinoma showing abundant mucous cells and few epidermoid cells. (H&E, X100)

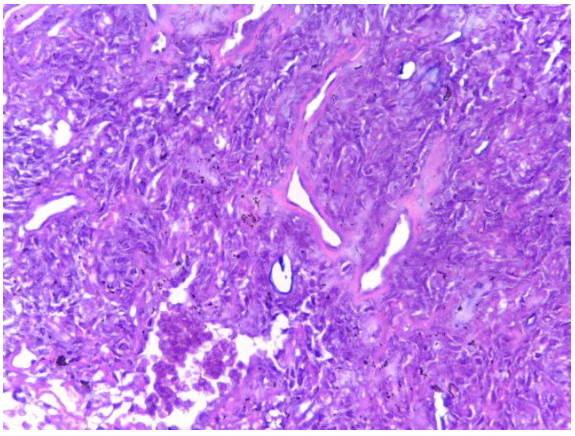

Figure 4: Polymorphous low grade adenocarcinoma showing trabeculae and tubular patterns. (H&E, X100)

In this study, there was female predilection (69%) for salivary glands tumours. This is similar to the reports of several studies from Nigeria, other parts of Africa and the UK [7- 10] but differs from the reports of Ladeinde et al [5] in Nigeria, Masanja et al [11] in Tanzania and Oti et al [12] in Ghana who reported male predominance. Whereas, Ito et al [13] in Brazil reported equal gender predilection.

The mean age of patients (44.3 years) with salivary gland tumours reported in this study is similar to those reported by several other studies from Nigeria (41.4 years), [5] Kenya (43.6), [6] Tanzania (42.4 years) [11] and China (48.1 years). [14] The mean age of patients in this study is higher than those reported by Chizonga et al (35 years) [9], Sila et al (32 years) [10] and Vahahuhla (38.1 years) [15] but lower than that reported by Jones et al (60 years). [7] Also, over 70% of patients in this study were above 30 years in age; this observation is in agreement with the general opinion that salivary gland tumour is rare in children and corroborates the findings of Ladeinde et al [5] and Oti et al. [12]

As regards the site, the minor salivary glands were more affected with the most common site being the palate (62.1%). This is in agreement with the findings from other Nigerian studies by Ladeinde et al (55%) [5] in Lagos and Aliyu et al [16] (61.2%) in Sokoto, which also reported palatal predilection for these lesions. It is generally believed that tumours of the minor salivary gland are more common among Africans than the Europeans and Americans. [9] The reason for this is however not clear, it may be related to genetic or environmental factor, there is need for further studies in this regard. Majority (96.6%) of the tumours reported in this study were malignant. This is contrary to the report of most other studies which have reported more benign salivary gland lesions [8-12] but similar to the reports of Ladeinde et al, (60.8%) [5] Aliyu et al [16] (66.0%) and Adeyemi et al (62.0%). [17] The reason for this is not clear but this may be related to the poor awareness and because patients with malignant lesions are forced to seek for care due to the associated signs and symptoms, while patients with benign lesion which are generally asymptomatic may not border to seek care. Also, the lesions in this study were majorly from intra-oral minor salivary gland, which may explain the predominance of malignant salivary gland tumours.

There is no controversy on which lesion is the most common among the salivary glands tumours. Several studies have reported different tumours as the most common. Unlike in this study and that of Ochicha et al [4] in which mucoepidermoid carcinoma was reported as the most common, Bahra et al [6] reported pleomorphic salivary adenoma, and Chidzonga et al [9] reported adenocystic carcinoma. More recently, Aliyu et al [16] and Okoh et al,[18] reported squamous cell carcinoma and acinic cell carcinoma respectively

as the most common malignant salivary gland tumours.

In conclusion**, s**alivary gland tumours are relatively rare in our environment especially the benign lesions. Most cases in this study affected patients above 30 years of age and the minor salivary glands of the palate were mostly affected. Mucoepidermoid carcinoma was the most common histologically diagnosed lesion.

Conflict of Interest: None declared

REFERENCES

1. Cheuk W, Chan JKC. Salivary glands tumours. Regezi JA, Scuibba AJ, Jordan RC. Oral Pathology, clinical- correlations, 4th edition, Philadephia; WB Saunders; 2003, Pg 217-250.
2. Oliveira FA, Duarte EC, Taveira CT, Máximo AA, de Aquino EC, Alencar RC, Vencio, EF. Salivary Gland Tumor: A Review of 599 Cases in a Brazilian Population. Head and Neck Pathology. 2009: 3; 271-275.
3. Odukoya O. Pleomorphic Adenoma of Salivary Glands in Lagos, Nigeria. African Journal of Medicine and Sciences. 1990: 19; 195-199.
4. Ochicha O, Malami S, Mohammed A, Atanda AA. Histopathologic Study of Salivary Gland Tumors in Kano, Northern Nigeria. Indian Journal of Pathology & Microbiology 2009: 52; 473-476.
5. Ladeinde AL, Adeyemo WL, Ogunlewe MO, Ajayi AF, Omitola OG. Salivary gland tumours: a 15-year review at the Dental Centre Lagos University Teaching Hospital. Afr. J Med Med Sci 2007:36: 299-304.
6. Bahra J, Butt F, Dimba E, Macigo F. Patterns of Salivary Tumours at a University Teaching Hospital in Kenya. OJST 2012: 2; 280-285.
7. Jones AV, Craig GT, Speight PM, Franklin CD. The range and demographics of salivary gland tumours diagnosed in a UK population. Oral Oncology 2008:44; 407-417.
8. Onyango JF, Awange DO, Muthamia JM, Muga BIO. Salivary Gland tumours in Kenya. East Africa Medical Journal 1992: 69; 525-530.
9. Chidzonga MM, Lopez Perez VM, Portilla Alva- rez AL. Salivary gland tumors in Zimbabwe: Report of 282 cases. International Journal of Oral and Maxillofacial Surgery 1995:24; 293-297.
10. Silas OA, Echejoh GO, Manasseh AN, Man dong BM. Patterns of malignant salivary gland tumours in Jos University Teaching Hospital (JUTH), Jos: A ten-year retrospective study. Nigerian Journal of Medicine 2009: 18; 282-285.
11. Masanja MI, Kalvanyama BM, Simon EN. Salivary gland tumours in Tanzania. East Africa Medical Journal 2003: 80; 429-434.
12. Oti AA, Donkor P, Obiri-Yeboah S, Afriyie-Owusu S. Salivary Gland Tumours at Komfo Anokye Teaching Hospital, Ghana. Surgical Science 2013:; 135-139.
13. Ito FA, Ito K, Vargas PA, de Almeida, OP, Lopes MA. Salivary gland tumours in a Brazilian population: A retrospective study of 496 cases. International Journal of Oral and Maxillofacial Surgery 2005:34; 533-536.
14. Tian Z, Li L, Wang L, Hu Y, Li J. Salivary gland neoplasms in oral and maxillofacial regions: A 23-year retrospective study of 6982 cases in an eastern Chinese population. International Journal of Oral & Maxillofacial Surgery 2010: 39; 235-242.
15. Vuhahula EA. Salivary gland tumours in Uganda: Clinical pathologic study. Africa Health Sciences 2004: 4; 15- 23.
16. Aliyu D, Iseh KF, Sahabi SM, Amutta SB, Abdullahi M, Inoh MN. Pattern of salivary gland tumour in Sokoto, North-Western Nigeria. International Journal of Clinical Medicine 2016: 7; 347-352.
17. Adeyemi BF, Ogun GO, Akang EE. Retrospective analysis of intra-oral salivary gland tumours in Ibadan, Nigeria. West Afr J Med. 2010; 29:98-103.
18. Okoh DS, Orikpete EV, Omoregie OF, Ojo MA. A study of the clinicopathologic patterns of orofacial carcinomas in a Nigerian population. Afri J Oral Maxillofac Path. Med. 2015;1(2): 34–39).