Descriptive pattern of Benign Salivary Gland Tumours in Jos University Teaching Hospital (JUTH), Jos: A ten-year retrospective study.

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ABSTRACT

Background
Salivary gland tumours are common head and neck tumours which account for 2.8 to 10% of all head and neck tumours in most African studies and 8.0 to 10.5 % in most western literature. Benign salivary gland tumours are the commonest form of salivary gland neoplasm, with the ratio of benign to malignant tumours ranging from 1.2:1 to 2:1.
Objectives: This study is aimed at describing the histological pattern, age, sex and site distribution of benign salivary gland tumours in Jos University Teaching Hospital from January 1997 to December 2006.
Methods: This was a descriptive study of all histotogically confirmed benign salivary gland tumours over a period of ten years. The slides were reported independently by four pathologists. Diagnosis was made and classification done according to the World Health Organization (WHO) classification of salivary gland tumours. Data such as age, sex and site of distribution of these tumours were obtained from the patient's case files.
Results: Results show that benign salivary gland tumours had a higher distribution than malignant salivary gland tumours with a ratio of 1.7:1. Of these benign salivary gland tumours, male predominance over females was generally observed. Benign salivary gland tumours occurred more within the age range 4 to 49 years (table 1), with pleomorphic Adenoma accounting for the highest frequency (115) and basal cell adenoma for the lowest frequency (1) [table 2]. Parotid gland was also the commonest site of occurrence of most of these lesions except for basal cell adenoma which was found in the sublingual gland.

Introduction

Salivary gland tumours are relatively uncommon compared to other tumours and is said to account for less than a 2% of all human tumours [1]. They are however common head and neck tumours accounting for 2.8 to 10% of all head and neck tumours in African studies and 8.0 to 10.5% in western literatures [1][2]. Benign Salivary Gland tumours is said to be more common than malignant ones accounting for ratio between 1.2:1 to 3.5:1 in most studies [2]

Aetiology of Salivary Gland tumours is relatively unknown and high risk population have not been identified except for the rare lymphoepithelioma-like carcinoma[2]. Irradiation, genetic factors and diet are possible attributable actors [2].

About 65% to 85% of Salivary Gland tumours arise within the parotid, 10% in the submadibular gland and the remainder in minor salivary glands [2]. The likelihood of a salivary gland tumour being benign is directly proportional to the size of the gland of origin [2] [3].

In Africa only few studies on Salivary Gland tumours have been reported mainly in Tanzania, Kenya, Nigeria with prevalence of Salivary Gland Tumour ranging from 2.8% to 10% in these countries[4][5] slightly different from that of the western world which is 8.0% to 10.5% [6].

In Nigeria, prevalence of salivary gland tumours is reported to range between 2.8 -10% [7] [8].

In all the various centers in Nigeria, Africa and western world benign salivary gland tumour stands out as the commonest Salivary gland tumour with pleomorphic adenoma being the commonest histological type [8][9]. Parotid gland also stands out as the commonest site of occurrences of most of these benign lesions [8] [9] [10].

This study is the first comprehensive study of such in Jos University Teaching Hospital JUTH) and findings will form the basis for health planning and further research.

Methods

This was a descriptive study of all histological confirmed benign salivary gland tumours over a period of ten years. The study was conducted at Jos University Teaching Hospital (JUTH) Jos which is located in Jos city of Plateau State in North Central region of Nigeria. It has a 530 bed capacity and serves as a referral centre for most private, missionary and Government hospitals in this region. The histopathology laboratory of the hospital receives about 30-40 salivary gland specimens annually.

Fresh sections of tissue blocks of all histologically confirmed benign salivary gland tumours over the period of study were made. The tissues were mainly excisional and incisional biopsies of salivary gland lesions. The sections were cut using the microtome (3 microne). They were made into slides and stained with Hematoxylin and Eosin (H and E) and Periodic Acid Schiff (PAS) stains. The H and E stain is the routine stain that help differentiate the nucleus from the cytoplasm of various cells. Periodic Acid Schiff is a special stain mainly use in this study to stain for mucin and glycogen to show the different type of stromal components in cases of pleomorphic adenoma (benign mixed tumour).

The slides were reported independently by four pathologists. Diagnosis was made and classification done according to the World Health Organization (WHO) classification of salivary gland tumours [16]. Informations such as age, sex, site were also retrieved from patient's case files.

Site	PA (%)	AL (%)	ON (%)	BA (%)	BNET (%)	Total
< 20	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (100.0)	2
21 – 30	40 (34.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	40
31 – 40	65 (56.5)	6 (100.0)	1 (25.0)	1 (100.0)	0 (0.0)	73
41 – 50	10 (8.7)	0 (0.0)	3 (75.0)	0 (0.0)	0 (0.0)	13
Total	**115**	**6**	**4**	**1**	**2**	**128**

PA – pleomorphic adenoma, AL – Adenolymphoma, ON– Oncocytoma, BA – Basal cell adenoma, BNET– Benign non-epithelial tumour e.g lymphangioma, hemangioma, neurofibroma, lipoma, fibroma

Table 1: Distribution of benign salivary gland tumours by age

Site	PA (%)	AL (%)	ON (%)	BA (%)	BNET (%)	Total
Parotid	93(80.9)	4 (66.7)	3 (75.0)	0 (0.0)	1 (50.0)	2
Submandibular	16 (13.9)	2 (33.3)	1 (25.0)	0 (0.0)	1 (50.0)	40
Sublingual	6 (5.2)	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	73
Total	**115**	**6**	**4**	**1**	**2**	**128**

PA – pleomorphic adenoma, AL – Adenolymphoma, ON – Oncocytoma, BA – Basal cell adenoma, BNET – Benign non-epithelial tumour e.g lymphangioma, hemangioma, neurofibroma, lipoma, fibroma

Table 2: Distribution of benign salivary gland tumours by anatomical site

The data was analyzed using statistical mean, chi-square and P value. Deductions observed were then discussed.

Results

Of the 202 Salivary Gland tumours received, a total of 128 were benign salivary gland tumours (fig. 1). Out of this 69 (54%) were males and 59 (46%) were females (fig 2) with a male to female ratio of 1:2:1.

The age range for the benign tumours was between 4-49years with the age group 31-40 years accounting for the highest frequency 73 (57%) with a mean age of 31 years (table 1).

The parotid gland was the commonest site of occurrence for these benign salivary gland tumours accounting for 101 (97%) of cases, while the sublingual gland was the least affected site accounting for 7(6%) of all benign cases (table 2).

Pleomorphic adenoma was the commonest benign salivary gland tumour accounting for 115 (90%) of all benign tumours (table 1). Only one case of basal cell adenoma was found (table 1).

Discussion

Of the 202 salivary gland tumours received during the period of study, 128 (63%) were benign while the remaining 74 (37%) were malignant (fig 1) with a ratio of benign : Malignant (1.7:1). This is consistent with findings reported in Ibadan by Kolude B et al, in Maiduguri by Otoh EE et al, in Tazania by Masanga MI et al and in western literatures by Stell et al who all reported higher ratios of benign over malignant salivary gland tumours [2][4].

Of the 128 benign salivary gland tumours studied, the distribution showed a slight male preponderance over females (1.2:1) [fig 2]. This findings differ from that from centres in Ibadan and Lagos who reported a slight female preponderance over male [4][7]. The higher male preponderance in this study might be connected to the sample size and some cultural factors that do not allow females attend clinic alone without permission from their male counterparts in the Northern part of Nigeria which is our study area.

The age group 31-40 years accounts for the highest percentage (57%) of benign tumours (Table 1). This is similar to findings in other Nigerian, African and European studies [5][6][7]. Thus benign salivary gland tumours generally occur in relatively younger age group than the malignant ones.

The parotid gland was found to be the commonest site of occurrence for benign lesions accounting for the highest percentage (79%) followed by submandibular gland (16.0%) and sublingual gland (6%) (table 2). This is similar to findings in other Nigerian, African and European studies [5][6][7]. Thus, the largest salivary gland (parotid) remains the commonest site for benign salivary gland tumours.

Conclusion

This descriptive study of benign salivary gland tumours shows that it remains the commonest form of salivary gland tumour with the parotid gland as the commonest site of its occurrence. Pleomorphic adenoma is still the commonest histologic form of benign salivary gland tumour. The relatively higher male preponderance over females might be due to sample size and certain cultural factors that reduce female hospital attendance in our centre.

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