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RESEARCH ARTICLE

CLINICAL PRESENTATION OF SALIVARY GLANDS TUMOURS AMONG SUDANESE PATIENTS

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ABSTRACT

Benign and malignant tumors are rare conditions; it was not uncommonly occurs in salivary glands and usually presented as a painless mass. The presence of pain and facial nerve palsy may indicate malignant transformation. Diagnosis is made by imaging and biopsies.

Objectives: This study aims to know the pattern of Benign and malignant tumors in salivary glands among Sudanese patients in Khartoum state according to many categories age, gender, clinical presentation and diagnosis.

Methods: This is retrospective, cross- sectional, analytic and hospital based study from January 2014 to May 2016. Conducted in Otorhinolaryngological, Head and neck and Oromaxillofacial hospitals in Khartoum state in Sudan.

Results: The highest percentage of neoplasm is benign more commonly as pleomorphic adenoma in minor glands. Malignant tumor is commonly affected the parotid glands of predominance in adenoid cystic carcinoma followed by mucoepidermoid carcinoma.

Conclusion: Benign and malignant tumors which occur in salivary glands were commonly pleomorphic adenoma and adenoid cystic carcinoma respectively.

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INTRODUCTION

The salivary gland neoplasm presented with a slowly growing painless masses. Parotid neoplasms most commonly occur in the tail of the gland. Submandibular neoplasms often appear with diffuse enlargement of the gland and sublingual tumors produce a palpable fullness in the floor of the mouth (Madani and Beale, 2006; Lee and Johnson, 2009). Facial paralysis or other neurologic deficit associated with a salivary gland mass indicates malignancy and the significance of painful salivary gland masses is not entirely clear. Pain may be a feature associated with both benign and malignant tumors and it may arise from suppuration or hemorrhage into the mass or from infiltration of a malignancy into adjacent tissue.The suspicious also my include size, mobility, and extent of the mass, as well as its fixation to surrounding structures and tenderness. Facial nerve should be assessed carefully to identify any weakness or paralysis because usually it indicates a malignant lesion with infiltration into the nerve (Lee and Johnson, 2009). Minor salivary gland tumors have varied presentations depending on the site of origin. Painless masses on the palate or floor of the mouth are the most common presentation of minor salivary neoplasm (To *et al.,* 2012). Distinguishing malignant neoplasm from benign one at initial presentation may not be possible until a biopsy is performed. Both types typically present as a painless mass in the gland. Findings that are concerning for malignancy include pain, facial paresis, fixation of the mass to the skin or underlying tissue, and palpable neck lymphadenopathy (Akar *et al.,* 2014; To *et al.,* 2012; Torabinia and Khalesi, 2014). The Scottish series represented epithelial tumors of the parotid and intra-oral salivary glands, but the Canadian series also included tumors of the submandibular and sublingual glands. While direct statistical comparisons between the two series are not appropriate, the differences between them suggested that malignant tumors were more common in Canada (Main *et al.,* 1976). The Scottish series contains the largest proportion of benign salivary tumors so far imported and 88.7 % of parotid tumors were benign compared with 51.9% of the Canadian series. In the Canadian series; submandibular glands 21.2 % only were benign. The intra-oral salivary tumors 62.2 % from the Scottish series were benign compared with only 34.7 % of the Canadian series (Main *et al.,* 1976). In another study 67.5% were benign and 32.55% were malignant. The majority of cases occurred in the parotid 67.7% followed by minor glands 22.8% and submandibular gland 9.5%. The tumors affected more commonly adult patients with peak incidence between 40-50 years of age with slightly

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predominance in female. Pleomorphic adenoma was the most common represented 54.2% of all cases, followed by mucoepidermoid ca 13.5%, warthin tumor 8.5% and Adenoid cystic ca 7.9% (Ito *et al*., 2005). Shafcat from Kashmir had undertaken a period of two years with particular reference to age, sex, site and histological types as per WHO classification. Out of 100 cases diagnosed on FNAC his to pathological examination was done only in 66 cases. Diagnosis correlated with FNAC diagnosis in 65 cases with accuracy of 98.4%. Tumors were analysed according to the age, sex, site and histological type and the principal site was the parotid (70%). Pleomorphic adenoma (73%) formed the largest group of tumors in most sites and benign tumors were common in 3rd & 4th decades while as malignant tumors were more common in 4th & 5th decades. Painless swelling was the commonest presentation and present in 99% cases (Ahrnad *et al*., 2002; Torabinia and Khalesi, 2014).

Sulieman and Shummo founded that a70% of the salivary gland tumors were parotid tumors, 20% were submandibular tumors and 10% were sublingual tumors and high incidence of malignancy was seen in salivary gland of 47% of cases. The predomince is for male and 5th decade of life showed the high incidence of involvement. The use of toombac (local snuff) appears to have strong relation with the increases of malignant tumors. (Suliman *et al*., 2003) A study from Libya : founded that dental examination may provide an early detection and the peak occurrence of the tumors was founded in the fifth decade for males and sixth decade for female and it was founded that the frequency of benign tumors was 38.6% and malignant tumors was 61.3%. Pleomorphic adenoma was the most common histological type of benign tumor whereas mucoepidermoid carcinoma and adenoid cystic carcinoma were the most common malignant tumors (Jaber, 2006). In benign salivary glands tumor women was affected in 61% and male: female ratio was 1:1.6. The parotid gland tumors were frequently in 68.5% with age ranged from 1 to 88 years (median 45 yrs) (Torabinia and Khalesi, 2014). The most common malignancy is mucoepidermoid carcinoma (10.1%) in second and sixed decade of equal gender distribution M=F ratio and predominately in palate.Squamouscell carcinoma (10.9%) and adenoid cystic carcinoma (21.9%) were most common malignancy in the major and minor gland respectively (Otoh *et al*., 2005). The incidence of warthin tumor more predominately on males with male: female ratio 2.2:1. A positive smoking history in 88% of men .The age distribution increase over each decade 1 (4.8%), 2 (5.5%) and 8 (16%) in parotid gland (Yoo *et al*., 1994). Adenoid cystic carcinoma is rare tumor accounting for only 1% of all malignant tumor of oral and maxillofacial region. It account for 22% of all salivary gland malignancies and is one of the most common malignant tumor of the minor salivary glands. It is the most common in fifth and sixth decades of life with male predominance.It is slow growing tumor and usually asymptomatic till it has invaded local nerves and structures with cervical lymph node metastasis (Jaso and Malhotra, 2011).

Patients and methods

This retrospective hospital based cross-sectional study from January 2014 –May 2016. Study was done in Khartoum ENT hospital, Ibnsina specialized hospital, Khartoum dental teaching hospital and Africa specialized hospital. For 73 patients presented to these hospitals complaining of salivary glands swelling.

Inclusion criteria: To study all patients presented with salivary gland tumours.

Exclusion criteria: All patients with secondary metastasis to salivary glands.

Data collection: Detailed will structured questionnaire was filled for each hospital respondent after obtaining the consent.

Data management and analysis: Data analyzed using statistical Package for Social Sciencel.

Ethical clearance: I explained verbally to any patient the aim of the study, data collection, the need of investigations and regular follow up. Privacy of patient is the most of our priority.

RESULTS

The number of patients included in this study was 73. Collected from 2 departments Otorhinolaryngology and Oro-maxillofacial departments in Khartoum hospitals. Thirtypatients (41.1%) males compared to 43patients (58.9%) females with a predominance of female and M: F ratio was 1:1.8 Figure (1). Regarding the affected age group in this study 0-15 years 3 patients (4%), followed by 16-25/ 26-35 years 10 and 16 patients respectively. Between 36-45 years 17 patients (23.4%), followed by 46-55 years 9 patients (12.3%) then 56-65 years 11 patients (15.0%). Finally between 66-757 patients (9.6%) Table (1). Regarding residence the largest percentage of patients of Khartoum state; in Omdurman were 19 pts (26.0%), then Khartoum were 16pts (21.8%), Bahri were 14 pts (19.2%). The patients out of Khartoum state were 24pts (33.0%) Figure (2). Regarding the socioeconomic status; a low socioeconomic status was thecommonest group affected in this study 54.5%, moderate socioeconomic status in 44.4%and lastly high socioeconomic status in 1.1% Figure (3). Risk factors may predispose in salivary gland disorders were: smoking in 5.1%, alcohol in 0.6 % and snuffing in o.6% Fig. (4).

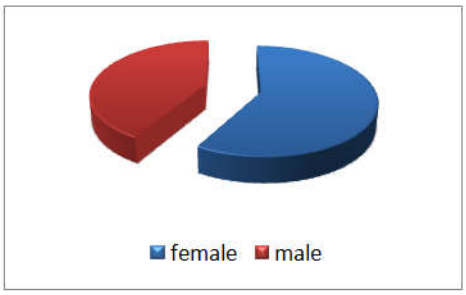

Figure 1. Gender distributions

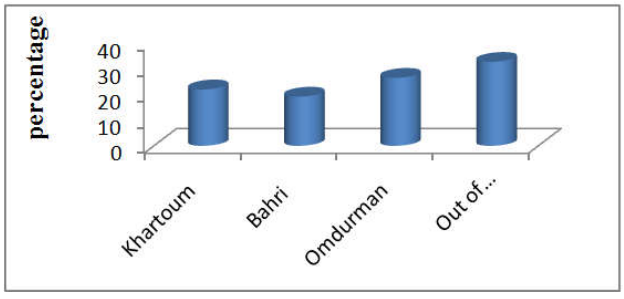

Figure 2. Patients residence

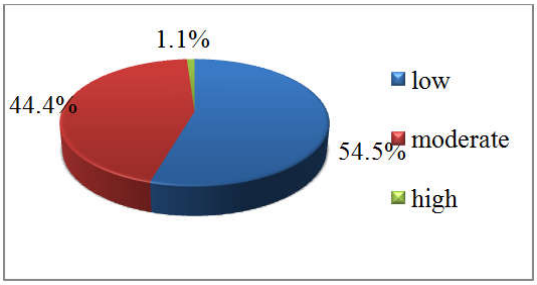

Figure 3. Socioeconomic status of the patients

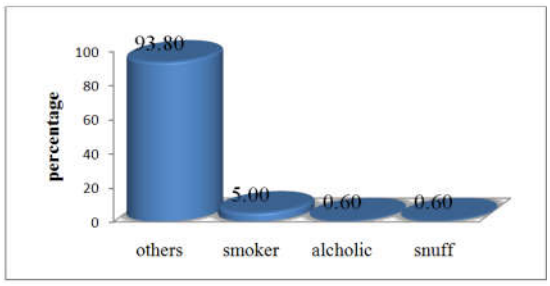

Figure 4. Risk factors that contributes in salivary gland diseases

Table 1. The age distribution among the patients

Age groups	Frequency	Percentage
Less than15	3	4.0
16 -25	10	13.7
26 – 35	16	22.0
36 -45	17	23.4
46 -55	9	12.3
56 -65	11	15.0
66 – 75	7	9.6
Total	73	100

Table 2. Symptoms of patients

Symptoms of salivary gland diseases	Number of patients	Percentage
Pain with food chewing	24	33%
Swelling	73	100%
Xerostomia	3	4%
Dry eye	3	4%
Obstructive symptoms	3	4%
Dental symptoms	2	2.7%
Inability to mouth opening	3	4%
Facial weakness	3	4%

Table 3. Signs of the study group

Sign of salivary gland diseases	Number of patient	Percentage
Mass	73	100%
Regular shape of the glands	55	75.3%
Cervical lymph node	7	9.6%
The presence of ulcer	4	5.4%
Pus from the duct	4	5.4%
Facial paralysis	7	9.6%
Trismus	4	5.4%

Table 4. Uses of radiological image as a diagnostic tool for patients

Radiology images	Number of patients	Percentages
Plan x-ray	51	69.8%
CT scan	73	100%
Ultrasound	3	4.0%

Table 5. Result of fine needle aspiration cytology

FNAC result	Frequency	Percentage
Polymorphic adenoma	51	69.8
Adenoid cystic carcinoma	4	5.4
Acinic cell carcinoma	1	1.4
Myoepithilial carcinoma	1	1.4
Mucoepidermoid carcinoma	3	4.0
Haemangioma	1	1.4
Not done	12	16.6
Total	73	100%

Table 6. The histological resultsof the patients

Histopatological results	Frequency	Percentage
Pleomorphic adenoma	54	74.0
Adenoid cystic carcinoma	6	8.0
Mucoepidermoid carcinoma	5	7.0
Acinic cell carcinoma	3	4.0
Warthintumour	2	2.8
Squamus cell carcinoma	1	1.4
Haemangioma	1	1.4
Myoepithelial carcinoma	1	1.4
Total	73	100%

Regarding the symptoms of salivary gland diseases were organized as follows: gland swelling in 73 patients (100%), pain with food chewing presented in 24 patients (33%), xerostomia was founded in 3patients (4.0%), dry eye in 3patients (4%), obstructive symptoms: founded in 3patients (4%), 3 patients with inability to swallow, dental symptoms in 2 patients (2.7%) and finally facial weakness founded in3 patients (4%) Table (2). Regarding the signs of salivary gland diseases, mass was found in 73patients (100%), the regular shape swellings founded in 55patients (75.3%), cervical lymph node enlargement in this study founded in7 patients (9.6%) and ulcerations in 4 patients (5.4%). Pus was discharged from duct in4 patients (5.4%), followed by trismus in4patients (5.4%). facial nerve was founded paralyzed in 7 patients (9.6 %) table (3). Regarding the radiological results: plain x-rays was done in51 patients (69.8%) CT scan in 73 patients (100%) and ultrasound in 3 patients (4%) table (4). The results finding of FNAC were: pleomorphic in 51 patients (69.8%), adenoid cystic carcinoma in 4 patients (5.4%), acinic cell carcinoma in 1 patient (1.4%) and mucoepidermoid carcinomain 3 patient (4%) Table (5). According to the results of histopathology: pleomorphic adenoma in 54 patients (74%), chronic, adenoid cystic carcinoma in 6 patients (8%) mucoepedermoid carcinoma in 5 patients(2.8%) and acinic cell carcinoma in 3 patients (6).

DISCUSSION

The total number of patients in this study were 73 patients with mean age was 30 $^{\pm}$SD and this was compatible to Torabiniaand Ahrnad (Ahrnad *et al*., 2002; Torabinia and Khalesi, 2014). Female more affected than male with ratio 1.8:1 and this is compatible with Zaho, Pillmer and Torabinia (Pillmer *et al*., 2001; Zhao *et al*., 2004; Torabinia and Khalesi, 2014). In contrast to Sullieman, Yoo GH and Jasomention who mentioned the male predominance (Suliman *et al*., 2003; Yoo *et al*., 1994; Jaso and Malhotra, 2011). The commonest major gland affected was parotid gland this is in agreement with Harrison and toYoskovitch (Yoskovitch, 2015; Harrison, 2010). Risk factor that contributed to salivary gland diseases in this study showed smoking 5.1% snuffing 0.6% alcohol 0.6% which is compatible to Sullieman and Yoo (Suliman *et al*.,

2003; Yoo *et al*., 1994). The common symptom is pain with food chewing which is similar to Yoskovitch and Siddiqui (Yoskovitch, 2015; Siddiqui and Sialolithiasis, 2002). Regarding signs of salivary diseases in this study: the moderate size swelling is most common presentations 89.9% which is similar toYoskovitch, Harrison and Lee (Yoskovitch, 2015; Harrison, 2010; Lee and Johnson, 2009). The commonest radiological study used in this study was CT Scan in all patients 100%and this in agreement with Yoskovitch (Yoskovitch, 2015). Regarding the result of FNAC in diagnosis of salivary gland disease showed 69.8% pleomorphic adenoma is the commonest which is the same as Ahmad and Torabiniawho reported that pleomorphic adenoma is the commonest tumor (Ahrnad *et al*., 2002; Torabinia and Khalesi, 2014). Regarding the histopatholgical results: the most common tumouris pleomorphic adenoma in 74% this is similar to Jaberwho reported that the commonest type of tumors was pleomorphic adenoma (Jaber, 2006).

Conclusion

The most common neoplasm of salivary gland are the benign tumors, mainly the pleomorphic adenoma and the majority of them in the parotid gland in young adults. Mucoepidermoid carcinoma is the most common malignant tumor predominantly seen in female and in minor salivary glands. Facial nerve palsy seen mainly in malignant tumors and FNAC is a useful method in diagnosis. CT scan has a grateful role in the diagnosing theneoplastic lesion.

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