

SALIVARY GLAND TUMORS: A CLINICOPATHOLOGICAL STUDY OF 76 CASES AT A TERTIARY CARE HOSPITAL IN SOUTHERN INDIA

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Received : 26/02/2023
Received in revised form : 31/03/2023
Accepted : 13/04/2023

Keywords:

Salivary gland tumors, Pleomorphic adenoma, Mucoepidermoid carcinoma

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DOI: 10.47009/jamp.2023.5.3.192

Source of Support: Nil,

Conflict of Interest: None declared

Int J Acad Med Pharm
2023; 5 (3); 935-938



Abstract

This is a 2 years retrospective study of Salivary gland tumors (SGTs) conducted in the department of pathology, KMC Manipal. Many studies have shown that there is a geographic variation in site and distribution, incidence and histological types of SGTs. The main aim of our study was to evaluate clinicopathological features of all SGTs cases diagnosed at tertiary care hospital at Southern India and also compare the findings with the available data of different geographic locations. Out of 76 cases of SGTs 56(74%) were benign and 20(26%) were malignant. The mean age for benign tumors was 42.4 years & 50.8 years for malignant tumors. Males were predominantly affected (55%), Parotid gland was the commonest site (68%) followed by Sublingual gland (15.7%). Pleomorphic adenoma (59.2%) was the most frequent SGT followed by Mucoepidermoid tumor (14.4%). The pattern of distribution of SGTs is comparable in most of its characteristics with other studies from different geographical region.

INTRODUCTION

Salivary gland tumors (SGTs) are rare neoplasms with complex clinicopathological characteristics, accounting for 6% of all head and neck cancers, 0.3% of all malignancies. The global annual incidence is 0.4 – 13.5 cases per 100,000 population¹. Many studies have shown that there is a geographic variation in site and distribution, incidence and histological types of SGTs. Structurally salivary glands are simple but their ducts & acini can give rise to various histologically distinct tumor types. Most of the SGTs are benign & remain harmless for many years, whereas the malignant tumors, which occurs in small percentage when compared to benign tumors may be challenging to a surgeon & pathologist due to their proximity to facial nerve. Majority of SGTs are asymptomatic, if there is rapid growth, ulceration, pain & nerve involvement, it is suggestive of malignancy.

Aims & Objectives

- To evaluate clinicopathological features of all SGT cases diagnosed at tertiary care hospital at Southern India.
- To compare the findings with the available data of different studies at different geographic locations.

MATERIALS AND METHODS

This is a retrospective study of 2 years conducted from January 2014 to December 2015, in Department of Pathology, Kasturba Medical College. The study was approved by institutional ethics committee. All patients diagnosed with SGTs on histology were included and analyzed for clinical details including age, gender, size and anatomical location of tumor, follow up of available cases from medical records. Pathology archives were reviewed for histopathology. The clinical and histological features were studied, analyzed and compared with the results of other available studies. Categorical variables were expressed as absolute number of cases & in percentage. Continuous variables expressed as mean, median & standard deviation values.

RESULTS

A total of 76 cases of SGTs were analyzed. Males were affected more commonly (55%) than females, male to female ratio was 1.2:1. Of all cases, 56(74%) were benign and 20(26%) were malignant. All cases presented with history of swelling; overall size of tumors was 4.6X3X4.4cm. Mean age of presentation was 46.6 years. Parotid gland was the commonest site (68%) followed by Sublingual gland (15.7%). Pleomorphic adenoma (59.2%) was the most

frequent SGTs followed by Mucoepidermoid tumor (14.4%).

Benign tumors

- Benign tumors accounted for 74% (56) of all tumors [Table 1] and involved 29(38.1%) males and 27(35.4%) females [Table 2]. Male to female ratio for was 1.7:1. Mean age for benign tumors was 42.4 years. Pleomorphic adenoma was the most common benign tumor (59.2%) followed by Warthin's (7.8%). All the benign tumors presented with swelling with average size of 4.7x2.6x2.2 cm

Malignant tumors

- Malignant tumors accounted for 26% (20) of all tumors and involved 13 (17%) males and 7(9.18) females. Male to female ratio for malignant tumors was 1.8:1. Mean age for malignant tumors was 50.8 years. Mucoepidermoid Ca-14.4 % (n-11) was the most common malignant tumor followed by Adenoid cystic Ca-6.5% (n-5). All the malignant tumors presented with swelling with average size of 4.6x3.5x2.2.

Anatomical location

In both benign and malignant tumors parotid gland was most frequently involved followed by Sublingual gland. After parotid gland, palate was the second most common site for mucoepidermoid carcinoma involvement (Table3)

Clinical features

Out of 76 of SGTS only 10 patients had pain, most commonly associated with pleomorphic adenoma followed by mucoepidermoid and adenoid cystic carcinoma [Table 4]. 8 cases had cystic swelling of which pleomorphic adenoma accounted for 5.2% followed by Warthin's, Mucoepidermoid carcinoma and Basal cell adenoma. In 2 cases facial nerve involvement was seen viz., one each in case of Acinic cell carcinoma and Carcinoma ex-pleomorphic adenoma. Adherence to underlying structures was seen in 4 cases. 3 cases showed evidence of metastasis (2 cases of Mucoepidermoid and 1 case of Acinic cell carcinoma).

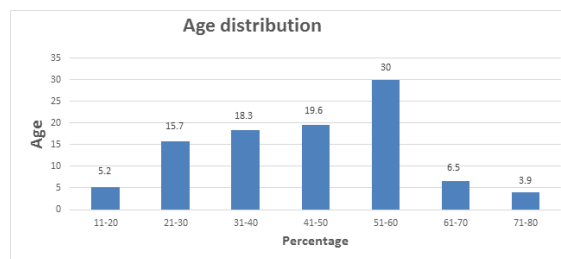


Figure 1:

Table 1: Histological distribution of SGT

Benign 56(74%)	n	%
1. Pleomorphic adenoma	45	59.2
2. Warthin's tumor	6	7.8
3. Myoepithelioma	2	2.6
4. Oncocytoma	2	2.6
5. Basal cell adenoma	1	1.3
MALIGNANT 20(26%)		
1. Mucoepidermoid Ca	11	14.4
2. Adenoidcystic Ca	5	6.5
3. Acinic cell Ca	2	2.6
4. Basal cell adeno Ca	1	1.3
5. Ca expleomorphic adenoma	1	1.3

Table 2: Gender wise distribution

Benign	Male		Female	
	n	%	n	%
1. Pleomorphic adenoma	21	27.6	24	31.5
2. Warthin's tumor	6	7.9	0	0
3. Myoepithelioma	1	1.3	1	1.3
4. Oncocytoma	0	0	2	2.6
5. Basal cell adenoma	1	1.3	0	0
Sub total	29	38.1	27	35.4
MALIGNANT				
1. Mucoepidermoid Ca	8	10.5	3	3.94
2. Adenoidcystic Ca	2	2.6	3	3.94
3. Acinic cell Ca	2	2.6	0	0
4. Basal cell adeno Ca	0	0	1	1.3
5. Ca expleomorphic adenoma	1	1.3	0	0
Sub total	13	17	7	9.18

Table 3: Site wise distribution of SGT

Site	n	%
Major salivary gland	64	84
Parotid	52	68
Sublingual	12	15.7
Submandibular	-	-
Minor salivary gland	12	16

Table 4: Clinical features of SGTs

Symptoms	Pleomorphic adenoma		Warthin's		Basal cell adenoma		Muco Epidermoid ca		Adenoid cystic ca		Acinic cell ca		CaEx-Pleomorphic adenoma		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Pain	5	6.5	-	-	-	-	3	3.9	2	2.6	-	-	-	-	10	13.1
Cystic Consistency	4	5.2	2	2.6	1	1.3	1	1.3	-	-	-	-	-	-	8	10.5
7th nerve involvement	-	-	-	-	-	-	-	-	-	-	1	1.3	1	1.3	2	2.6
Adherence to underlying Structures	-	-	-	-	-	-	2	2.6	1	1.3	1	1.3	-	-	4	5.2
Metastasis	-	-	-	-	-	-	2	2.6	-	-	1	1.3	-	-	3	3.9

Table 5: Distribution of SGTs in different states and regions of India

AUTHOR	State	Period	No of cases	Benign (%)	Malignant (%)	MC site (%)	Pleomorphic adenoma (%)	Mucoepidermoid (%)
Kalburge J.V et al ¹¹	Maharashtra	12yrs	73	43.80	56.10	Palate(36.9)	41	32.87
Achalkar G.V et al ⁶	Karnataka (Raichur)	-	50	74	26	Parotid(76)	58	16
Rajesh singh et al ⁷	Manipur	10yrs	78	71.10	28.20	Parotid(64)	55	8.90
Shetty A et al ⁸	Karnataka (Bangalore)	2yrs	75	78	21.40	Parotid(80)	60.70	12.5
Present study	Karnataka (Manipal)	2yrs	76	74	26	Parotid(68)	59.20	14.40

Table 6: Distribution of SGTs in different countries

Author	Country	Period	No. Of Cases	Benign (%)	Malignant (%)	MC Site (%)	Pleomorphic Adenoma (%)	Mucoepidermoid Ca (%)
Artut Cunha Vasconcelos ⁵	Brazil	15 yrs	109	78	22	Parotid(66.9)	63.30	4.50
Felipe Paiva ³	Brazil	11 yrs	493	74	25.10	Parotid (42.3)	63.30	7.90
Nakisa Torabinia ⁹	Iran	10 yrs	229	55	44.50	Parotid (45.9)	48.50	23.50
Jude Uo ²	Nigeria	20 yrs	109	64	35	Parotid(57)	53.20	8.20
Zohreh ¹⁰	Iran	05 yrs	366	67.80	32	Parotid(57)	54	9.80
Maria de Lourdes ⁴	Brazil	08 yrs	303	71	29	Parotid(72)	56	13.80
Present study	Karnataka (Manipal)	2yrs	76	74	26	Parotid(68)	59.20	14.40

DISCUSSION

Different epidemiologic studies conducted in different regions of India and worldwide report variation in the incidence & frequency of histological types. In present study we found out the demographic & clinicopathological aspects of 76 cases of SGTs diagnosed at our centres are comparable with other studies conducted in different region of India and also worldwide, except one study conducted by Kalburge JV.^[11] malignant tumors (56.16%)>benign tumors(43.83%) ,while other studies have reported benign tumors to be most common than malignant tumors.^[2,3,4,5,6,7,8,9,10] affecting the salivary glands.

The most common presentation of SGTs is well-circumscribed nodule with intact overlying skin and

normal color, these tumors are usually asymptomatic and most commonly affects females occurring in 5th and 7th decades .Benign tumors were treated with wide local excision while malignant tumors were treated by combination of surgery and radiotherapy, three cases showed evidence of distant metastasis. None of the tumors showed evidence of local recurrence. Limitation of this study is that we could not have a proper follow up of the patients due to short interval of study period (2yrs), whereas when compared to other studies have longer study period

CONCLUSION

To Conclude, Pleomorphic adenoma and Mucoepidermoid carcinoma were the most frequent benign and malignant tumors reported in our study. Parotid gland was the most common site of tumor.

The pattern of distribution of SGTs is comparable in most of its characteristics with other studies from same geographical region.

Conflicts of interest

The authors report no conflict of interest.

REFERENCES

1. Barnes L, Eveson J, Reichart P, Sidransky D. Tumors of the salivary glands. In: World Health Organization classification of tumors. Pathology and genetics of head and neck tumors. Lyon: IARC; 2005. p. 210- 81
2. Jude UO, Olu-Eddo AN. Salivary Gland Tumors, A Twenty-Year Retrospective Study. *Afr J Med Health Sci* 2014;13:24-9
3. Fonseca, Felipe Paiva et al. "Clinicopathologic Analysis Of 493 Cases Of Salivary Gland Tumors In A Southern Brazilian Population". *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology* 2012; 114.2 : 230-39
4. Morais, Maria de Lourdes Silva de Arruda et al. "Clinicopathological Study Of Salivary Gland Tumors: An Assessment Of 303 Patients". *Cadernos de Saúde Pública* 2011; 27.5: 1035-40
5. Vasconcelos, Artur Cunha et al. "Clinicopathological Analysis Of Salivary Gland Tumors Over A 15-Year Period". *Braz. oral res* 2016; 30.1
6. Achalkar G.V " A clinicopathological Study of Salivary Gland Tumors". *Journal of Evolution of Medical and Dental Sciences* 2013;50(12):9726-31
7. Rajesh singh et al, Pattern of salivary gland tumors in Manipur, India: A 10 year study *South Asian J Cancer*. 2013 Oct-Dec; 2(4): 250–253.
8. Shetty A et al spectrum of major salivary gland tumors: Clinicopathological study. *SJAMS*, 2014;2(3c):1088-1090
9. Nakisa Torabinia, Saeedeh Khalesi, Clinicopathological study of 229 cases of salivary gland tumors in Isfahan population *Dental Research Journal / September 2014 / Vol 11 / Issue 5*
10. Zohreh et al. Salivary Gland Tumors: A Clinicopathologic Study of 366 Cases in Southern Iran: *APJCP*:2013;14 (1), 27-30
11. Kalburge JV, Kalburge V, Latti B, Kini Y. Salivary Gland Tumors: Clinicopathologic analysis of 73 cases. *J Cranio Max Dis* 2014;3:111-5
12. Noma OEA, Obiora UJ. Salivary gland cancer in Benin City, Nigeria: A pathologic study. *Afr J Med Health Sci* 2015;14:47-51.
13. Ansari M. Salivary gland tumors in an Iranian population: retrospective study of 130 cases. *J Oral Maxillofac Surg*, 2007;65:2187-94.
14. Jones AV, Craig GT, Speight PM, et al. The range and demographics of salivary gland tumors diagnosed in a UK population. *Oral Oncol* 2008;44, 407-17.
15. Vuhahula EA. Salivary gland tumors in Uganda: clinical pathological study. *Afr Health Sci*, 2004; 4:15-23.
16. Dhanuthai K, Boonadulyarat M, Jaengjongdee T, et al. A clinico-pathologic study of 311 intra-oral salivary gland tumors in Thais. *J Oral Pathol Med* 2009;38:495–500.
17. Li LJ, Li Y, Wen YM, Liu H, Zhao HW. Clinical analysis of salivary gland tumor cases in West China in past 50 years. *Oral Oncol* 2008;44:187- 92
18. Davies JNP, Dodge O G, Burkitt D P 1964: Salivary gland tumors in Uganda " *Cancer*:1310-1322
19. Morgan MN, Meckenzie DH 1968: ' Tumors of salivary gland- A review of 204 cases with 5 years follow up: *Br J Surg*:55:284.