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A study of salivary gland tumors in rural population of Haryana

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Abstract

In head and neck, salivary gland tumors are not very common. The aim of this study was to evaluate the relative frequencies, site distribution, types and the histopathological features of salivary tumors in rural population of Haryana. This is a study of 16 patients with salivary gland tumors in the department of Surgery in Surajmal hospital attached to World College of Medical Sciences & Research and Hospital, Gurawar, Jhajjar, Haryana (-124103). Out of 16 cases, 13 cases (81%) were benign and 3 (19%) were malignant with M: F ratio of 1.28:1. The highest incidence of the tumor was found in the 4th decade of life followed by 6th and 7th decade. Benign Parotid tumors were more common in men where as females showed more incidence of malignant tumors. Pleomorphic adenoma was found to be the commonest benign tumor (50%). The mucoepidermoid carcinoma was the most common malignant tumor (12.5%). Parotid glands were the most common site for the location of tumors (62.5%) followed by submandibular (31.25%) and sublingual salivary glands (6.25%).

Pleomorphic adenoma was the commonest benign salivary gland tumor while the most common malignant salivary gland tumor was mucoepidermoid. The parotid gland was the most common site of origin.

Keywords: Tumor, Salivary gland, Benign, Malignant

Introduction

The origin of the salivary gland is from both endodermal and ectodermal invaginations. Salivary glands are categorized as major and minor glands. Major glands constitute one pair each of parotid, submandibular, and sublingual gland, while minor salivary glands are numerous located beneath the mucosa of the oral cavity. In head and neck tumors salivary gland comprises of 5% of the tumors.[1-3] Parotid gland tumor is the most common site of tumors of salivary gland constituting 70%[1-6] majority of these are benign(70%). But 20-25% of the tumors of the parotid gland are malignant while 40% tumors are malignant in submandibular gland and approximately 90% are malignant in sublingual gland.[7,8] The aim of our study was to determine the distribution of salivary tumors in the rural population of Haryana according to sex, age and anatomical location.

Materials and Method

A cross-sectional study was conducted in the department of General Surgery in Surajmal Hospital, World College of Medical Sciences & Research and Hospital, Gurawar, Jhajjar from March 2016 to April 2017. A total of 16 patients of salivary gland swellings were included. Data collected included the detailed history, physical examination, cytological and histopathological findings.

Observation

Table 1: Incidence of salivary tumors according to site of origin

Site of tumour	Frequency			Percentage%		
	Total	Male	Female	Total	Male	Female
Parotid	10	7	3	62.5%	43.75	18.75%
Submandibular	5	2	3	31.25%	12.50	18.75%
Sublingual	1	0	1	6.25%	0	6.25%
	16	9	7	100	56.25	43.75

Table 2: Age wise distribution of salivary gland tumors

Age groups	Parotid	Submandibular	Sublingual	Total
11-20	2	0	0	2
21-30	1	1	0	2
31-40	4	1	0	5
41-50	0	1	0	1
51-60	1	2	0	3

61-70	2	0	1	3
Total	10	5	1	16

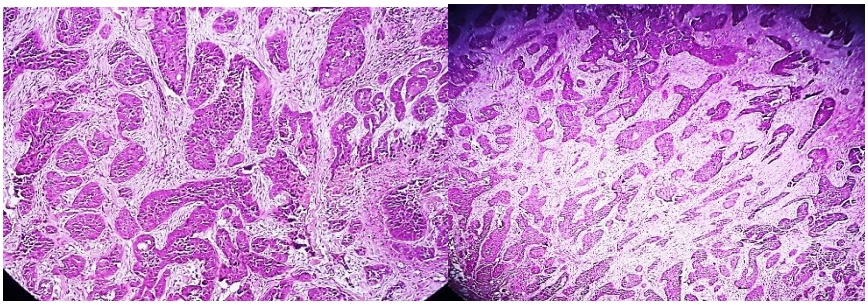

Fig. 1: Polymorphous low grade adenocarcinoma of minor salivary glands (20X, 10X)

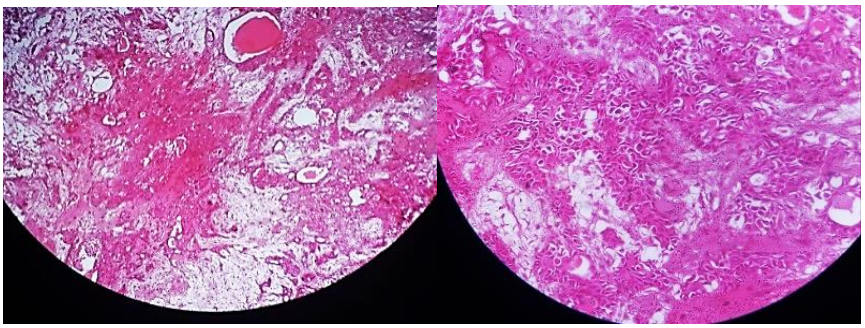

Fig. 2: Pleomorphic Adenoma of parotid glands (10X, 20X)

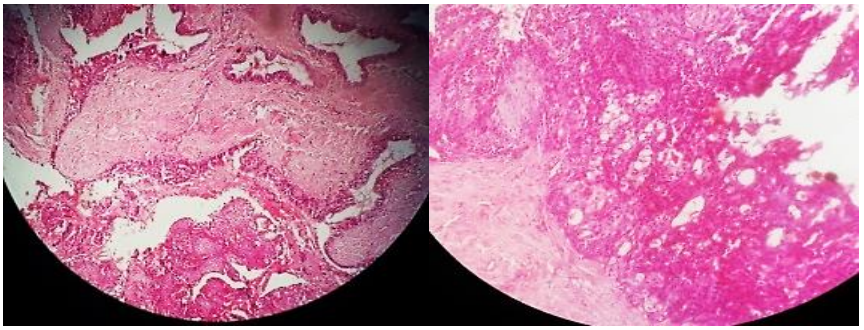

Fig. 3: Mucoepidermoid Carcinoma of parotid gland (10X, 20X

Table 3: Distribution according to HPE

Parotid	Total no.	Male	Female
Pleomorphic Adenoma	6	4	2
Mucoepidermoid Carcinoma	2	1	1
Parotid abscess	2	2	0
Total	10	7	3
Submandibular gland tumors			
Pleomorphic adenoma	2	1	1
Sialadenitis	2	0	2
Sialolithiasis	1	1	0
Total	5	2	3
Sublingual & Minor salivary glands (Adenocarcinoma)	1	0	1
Total	16	9	7

Table 4: Distribution of the patients by clinical features

Sr. No.	Clinical features	Frequency	Percentage
1	Swelling	16	100%
2	Pain	4	25%
3	Fever	2	12.5%
4	Increased salivation	4	25%
5	Facial nerve palsy	0	0
6	L. Nodes	1	6.25%

Results and Discussion

In this series, 62.5% patients had parotid, 31.25% had submandibular and 6.25% had the sub-lingual tumor. The highest incidence of tumors was found in the 4th decade of life followed by 6th & 7th decade. Men were more prone to develop both benign and malignant tumors. The most common presentation was swelling (100%). Facial nerve paresis was seen as a complication in only one case, which got subsided within three months of surgery.

Tumors of salivary gland are not very common and it varies in presentation and prognosis. This makes these group of patients very interesting for study.[9] For Surgeons, it makes the challenging procedure as they have to save facial nerve.

The tumors of salivary gland mainly present with swelling in the respective area. In our study, all patients had to swell. Most of them were painless, slow growing and had the history of more than 2 years. In all the major salivary glands the pleomorphic adenoma was the commonest benign in our series. 62.5% patients had parotid neoplasm, 31.25% had sub - mandibular tumors and 6.25% constituted the rest. Among the parotid neoplasm out of 10 cases, 8 benign and two were malignant. In the majority of case series, pleomorphic adenoma was the most common benign salivary gland tumors in parotid and submandibular glands.[10-15] In our study also pleomorphic adenoma occurred in 6 out of 10 cases in parotid gland and 2 cases out of 5 in submandibular glands

Muco- epidermoid carcinoma was the most common malignancy. Mucoepidermoid carcinoma was reported to be the most common malignant by Richardson et al[13] and Spiro et al.[16]

Surgery is the main treatment for salivary gland tumors. In the case of parotid gland tumors, superficial parotidectomy with facial nerve preservation is the standard treatment. This operation suffices in cases of benign or small malignant tumors limited to the superficial lobe. In our study, all the patients underwent superficial parotidectomy with facial nerve preservation. 2 patients with parotid abscess underwent incision and drainage. Complete excision of the gland is the adequate treatment for submandibular gland tumors if the lesion is limited to the gland parenchyma. In our study, all patients with submandibular gland tumors underwent excision of the tumor. The complications of patients undergoing parotid surgery include damage to the facial nerve, bleeding, hematoma, seroma, sialocele, flap necrosis, fistula of the salivary gland. In our study, one patient had facial nerve paresis involving marginal mandibular nerve which came back to normal after three months of treatment and only two patient had the surgical wound infection.

Conclusion

Parotid gland is the most common site of benign and malignant tumors of salivary glands. Pleomorphic adenoma is most common benign salivary gland tumor and mucoepidermoid carcinoma was the most malignant salivary gland tumors. Surgery is the mainstay of treatment of salivary glands tumors. But most important step before surgery is pre-operative counseling to explain to the patient the importance of surgery and complication of facial nerve involvement has to be explained.

References

1. Eveson JW, Cawson RA. Salivary gland tumors: A review of 2410 cases with particular reference to histological types, site, age and sex distribution. *J Pathol*.1985;146:51–8.
2. Eveson JW, Cawson RA. Tumors of minor (oropharyngeal) salivary glands: A demographic study of 336 cases. *J Oral Pathol*.1985;14:500–9.
3. Ries LA, Hankey BF, Miller BA, Hartman AM, Edwards BK. Bethesda, MD: National Cancer Institute; 1991. Cancer statistics review 1973-88. *NIH Publication* No. 91-2789.
4. Chidzonga MM, Lopez VM, Portilla-Alvarez AL. Salivary gland tumors in Zimbabwe: A report of 282 cases. *Int J Oral Maxillofac Surg*. 1995;24:293–7.
5. Ostman J, Anneroth G, Gustafsson H, Tavelin B. Malignant salivary gland tumors in Sweden 1960-1989 – an epidemiological study. *Oral Oncol*. 1997;33:169–76.
6. Subhashraj K. Salivary gland tumors: A single institution experience in India. *Br J Oral Maxillofac Surg*. 2008;46:235– 8.
7. Arshad AR. Parotid swellings: report of 110 consecutive cases. *Med J of Mala* 1998;53(4):417-22.
8. Loyola AM, De Araujo VC, De Sousa SOM, De Araujo NS. Minor salivary gland tumors. A retrospective study of 164 cases in a Brazilian population. *European Journal of Cancer* 1995;31(3):197-201.
9. Huvos AG. Salivary glands In: Sternberg SS(ed). Diagnostic surgical pathology.2nd ed. Philadelphia; Lippincott-Raven, 1994, p.813.
10. Fiorella R, DI Nicola V, Lforella ML, Spinelli DA, Coppola F, Luperto P, *et al*. Major salivary gland diseases, Multi Center study. *Acta Otorhinolaryngol Ital* 2005;25(3):182-92.
11. Chatterjee MT and Panda PK. A Pathological study of benign and malignant tumors of salivary glands; *MJAFI* 2000; 56:282-6.
12. Potdar GG, Paymaster JC. Tumors of salivary glands. *Am J Surg*1969;118:440-7.
13. Richardson GS, Dickason WL, Gaisford JC, *et al*. Tumors of salivary glands; An analysis of 752 cases. *Plastic Reconstr Surg* 1975;55:131.
14. Vergas PA, Gerhard R, Vergilius J. F, Filiho A and de Castro IV. Salivary gland tumors in Brazillian population: A retrospective study of 124 cases. *Rev. Hosp. Clin. Fac. Med. S. Paulo* 2002;57:271-6.
15. Nagarkar NM, Bansal S, Dass A, Singhal SK, Mohan H. Salivary gland tumors- Our Experience. *Indian J Otolaryngol Head Neck Surg* 2004;56:32-4.
16. Spiro RH, Huvos AG, Strong EW. Cancer of the parotid gland: a clinicopathologic study of 288 primary cases. *Am J Surg* 1975;130:452-9.