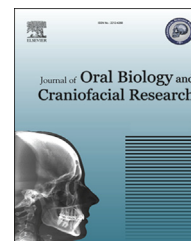


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Original Article

Minor salivary gland tumors in the Indian population: A series of cases over a ten year period

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ABSTRACT

Problem considered: Minor salivary glands are found in the sino-nasal cavities, oropharynx, larynx and trachea with the majority being found in the oral cavity. 80% or more of minor salivary gland tumors are malignant and they tend to have a great variation in presentation and histology. We sought out to compare the presentation of various minor salivary gland tumors (MSGT's) in the Indian population as compared to that reported in different races and regions.

Methods: We report a clinical case series in which 17 patients with biopsy proven minor salivary gland tumors both benign and malignant at various intraoral sites viz the palate, cheek, retromolar trigone and floor of the mouth were operated upon and followed up over a span of 10 years from 2001 to 2011.

Results: 15 patients were treated timely with complete removal of the lesions by wide local excision and as confirmed by histopathology; one patient with adenoid cystic carcinoma delayed in seeking treatment and expired within a month and another with salivary duct carcinoma presented with advanced disease and regional metastases in the form of multiple ipsilateral enlarged lymph nodes and distant metastases in the liver. He was given palliative radiotherapy but he died after six weeks of receiving treatment.

Conclusion: the results that we obtained for Indians were comparable to the various population studies done around the world.

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1. Introduction

There are between 450 and 750 minor salivary glands in the head and neck region¹ scattered throughout the sinonasal cavities, oropharynx, larynx² and trachea with the majority being found in the oral cavity.¹ Heterotopic minor salivary glands can also occur at unexpected sites including lymph

nodes, the capsule of the thyroid gland, facial bones and the hypophysis.^{1,3,4} All types of salivary tumors, both benign and malignant, can occur at any of these sites, including heterotopic locations^{5,6} thus accounting for their varied presentation. Unlike the major salivary glands where approximately 80% of tumors are benign, 80% or more of minor salivary gland tumors (MSGT's) are malignant^{1,5} and they tend to have a great variation in presentation and histology.^{1,6}

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Tumors of minor salivary gland origin are uncommon, accounting for 2–3% of all malignant neoplasms of the upper aero digestive tract and less than 20% of all salivary gland tumors.⁷ The majority of these glands are concentrated at the junction of the hard and soft palate. Thus, this region is the most common site for minor salivary gland tumors. 55% tumors occur in the palate while the lips account for 15% of such tumors. The upper lip is more frequently involved than the lower lip which is the least frequent site. The remaining are distributed about equally among the other glands in the floor of the mouth, retro – molar region, cheek, tongue, and peri – tonsillar area. Uncommonly, tumors may occur in the mandible apparently as intra – osseous growths.⁸

Salivary duct carcinoma (SDC) is a highly aggressive malignant tumor consisting of solid, papillary, cribriform and a rare comedo pattern of growth that resemble in situ as well as invasive ductal carcinoma of the breast.⁹ Previously grouped with adenocarcinoma not otherwise specified, it was classified as a distinct neoplasm by the World Health Organization in 1991. Eighty-eight percent of all cases of SDC occur in the parotid gland, approximately 8% arise in the submandibular gland, and only 4% occur in the minor salivary glands. SDC is usually seen in patients over 50 years of age and is three times more frequent in men. Clinically, it is characterized by aggressive behavior, with a high risk of local recurrence and lymph node and distant metastasis. There is a low survival rate.¹⁰

2. Patients and method

17 patients (Table 1) with scalpel biopsy or fine needle aspiration biopsy (FNAB) proven MSGTs were operated upon and

followed up over a span of 10 years (2001–2011). The initial diagnostic work up included proper history taking from the patient regarding the duration of the swelling/mass, increase in size; whether it was gradual or sudden, presence or absence of pain or paresthesia. Any deleterious habit(s) were noted. Regional lymph nodes were examined. Routine blood investigations, serum electrolyte levels, occlusal radiographs and computerized tomographic scans were taken in patients where lesions involved the palate and retromolar areas. In patients where the swellings were in the substance of the cheek and lower lip, no radiographs were taken. Surgery for lesions in the hard palate ($n = 7$), cheek ($n = 2$), and retromolar area ($n = 1$) that were pleomorphic adenoma consisted of excision with 1 cm of surrounding healthy margins. In all cases where the tumor was in the palate, the bone showed a smooth depression on its surface. In one patient of 13 years the defect of the hard palate after tumor excision was repaired with a pedicled rotation flap from the opposite side. In other cases where excision was done in the hard palate or hard palate-soft palate an acrylic splint with coe pak dressing was placed (Figs. 1–4) and changed at periodic intervals until the bare bone was covered by granulation tissue from the wound edges (Fig. 5). The tumor on the retromolar triangle was similarly removed with 1 cm surrounding healthy tissue, the buccal mucosa was undermined and primary closure was achieved (Figs. 6–8). Two patients with cheek lesions were operated upon where an incision was given in the buccal musosa overlying the lesion, the underlying tissues were bluntly dissected and the tumor was then sharply dissected out (Figs. 9–11). Primary wound closure was done by undermining the submucosal and mucosal tissues and suturing them layer wise. A bolster dressing was placed by suturing it

Table 1 – Table of patients in the study.

S. no	Age (years)	Sex	Site	Duration of illness (months)	Histopathological diagnosis	Surgical procedure performed
1	32	F	R palate	24	Pleomorphic adenoma	Excision and repair with pedicled palatal flap
2	13	M	L palate	18	Pleomorphic adenoma	Excision
3	68	F	R palate	18	Pleomorphic adenoma	Excision
4	30	F	L palate	6	Pleomorphic adenoma	Excision
5	22	M	L cheek	12	Pleomorphic adenoma	Excision
6	28	F	R cheek	12	Pleomorphic adenoma	Excision patient had recurrence after 2 years
7	27	M	L palate	36	Pleomorphic adenoma	Excision
8	36	F	L retromolar area	24	Pleomorphic adenoma	Excision
9	22	F	R palate	30	Pleomorphic adenoma	Excision
10	42	M	R palate	24	Pleomorphic adenoma	Excision
11	15	M	L cheek	6	Warthin's tumor	Excision
12	56	F	R floor of mouth	36	Adenoid cystic carcinoma	Excision and removal of sublingual gland
13	40	F	L floor of mouth	12	Low grade MEC	Excision
14	35	F	L palate	24	Low grade MEC	Excision with partial maxillectomy
15	36	M	R palate	24	Low grade MEC	Excision with partial maxillectomy
16	45	F	R palate	12	Adenoid cystic carcinoma	Patient delayed treatment and expired
17	52	M	L palate	6	Salivary duct carcinoma	Patient had advanced local disease, regional and distant metastases, he was given palliative radiotherapy

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