TUMORS OF PALATAL MINOR SALIVARY GLANDS: A RETROSPECTIVE ANALYSIS

MUHAMMAD JAVED¹, BAKHT ZADA², KHURSHID ANWAR¹, FARHAN SALAM², NADAR KHAN², FAZLE WAHID²

1. PGMI Hayatabad Medical Complex Peshawar.

2. PGMI Lady Reading Hospital Peshawar.

BACKGROUND: Salivary gland neoplasms make about 3 % of all Head & Neck tumours. These tumors are uncommon, accounting for 10 to 15% of all salivary gland neoplasms. Unfortunately the majority of such tumours are malignant. The study aims to give an account of the nature of these tumors.

PATIENTS AND METHODS: This retrospective descriptive study was conducted in the departments of ENT Head & Neck Surgery of two main tertiary care hospitals of Khyber Pukhtoon Khwa i.e. PGMI Hayatabad Medical Complex Peshawar and PGMI Govt lady Reading Hospital Peshawar from July 2008 to June 2013. Data extracted from charts review of patients contained age, sex, geographical distribution, symptoms, histopathological diagnosis, and treatment. Patients presented to these departments with lesions on the palate and who were managed there were included in the audit. Data thus obtained were analyzed using SPSS 16.

RESULTS: A total of 46 patients including 19 male and 27 female presented with primary neoplasms originating in the palatal minor salivary glands were enrolled in the audit. These included 11 benign and 35 malignant lesions. Most of the patients were Pakistani (29) as compared to Afghani population (17). Patients ranged in age from the second to the eighth decades, with a female preponderance. The most common malignant lesion was mucoepidermoid carcinoma followed by adenoid cystic carcinoma whereas in benign category pleomorphic adenoma was more common tumor.

CONCLUSION: The vast majority of neoplasms of the minor salivary glands in the palate are malignant. These should be managed without delay with wide excision and subsequently subjected to histopathology to arrive at a correct diagnosis..

KEY WORDS: Minor salivary glands, neoplasms, palate, malignant, Benign.

INTRODUCTION

Salivary gland neoplasms represent less than 1% of all tumors, and 3-5% of all head and neck neoplasms¹. Minor salivary gland neoplasms are only 10-15% of all salivary neoplasms. These neoplasms are mainly originated from the palate (50 % to 60%). Other sites include lips (15%), cheek mucosa (12%), tongue (5%) and floor of the mouth (5%), among other regions. Although they are not frequently encountered, they represent a heterogeneous group of neoplasms, with a broad range of histological types and growth patterns. Because of this great diversity and the lack of uniform criteria, many classifications for salivary gland neoplasms have been developed².

The first classification of salivary glands tumors, developed by the World Health Organization (WHO) in 1972, was revised in 1991. Due to the great morphological diversity of these tumors and the need to establish a precise diagnosis, a consensus meeting was held in Lyon (France), giving rise to a new classification of salivary gland tumors, published in the year 2005³.

The diagnosis of minor salivary gland neoplasms is based on detailed history and thorough physical exploration, supported by relevant investigations such as magnetic resonance imaging (MRI), computed tomography (CT) alone or combined with sialography and fine needle aspiration biopsy (FNAB)⁸.

There are a number of studies published in literature which describe salivary gland tumors in general. Only few papers have described minor salivary glands neoplasms separately⁴. This and the fact that there are racial variations in histopathological types and patterns of presentations of these lesions there are diversities in the relative frequency of various types of salivary gland neoplasms⁵. Classically, these lesions have been reported to be more frequent in women, though the proportion varies according to the histological type of tumor.

The clinical course of these tumors is variable and often characterized by late relapse many years after treatment. Often lesions have been present for many months, or even years, with a history of asymptomatic slow growth prior to diagnosis⁶. Lesions may present submucosally as well as being overtly ulcerative. The clinical data most suggestive of malignancy are pain, adherence to deep or superficial layers, epidermal involvement and/or ulceration, and the presence of neck adenopathies. Most of the patients with early stage disease are usually cured although local recurrence and distant metastases are well documented to occur in patients with advanced malignant disease. Unlike parotid and submandibular salivary gland tumours the majority of tumours arising from the minor salivary glands are malignant⁷.

The etiopathogenesis of MSGTs remains unclear⁸. In this context, it has not been possible to correlate smoking to salivary gland cancer, and exposure to ionizing radiation to date has been the only confirmed risk factor for tumors of the salivary glands⁹.

These tumors have a high recurrence rate (5-30%) when surgical removal is incomplete, and the possibility of malignant transformation must be taken into consideration. Six percent of all benign minor salivary gland tumors are considered to relapse, versus 65% of all malignant lesions¹⁰. This capacity to relapse is related to the histopathological characteristics of

the tumor, and particularly to the initial treatment provided¹¹.

The aim of the present study was to know the details of patients diagnosed with minor salivary gland neoplasms of the palate and to review literature both local as well as international on the subject.

PATIENTS AND METHODS

This retrospective study was conducted in the departments of ENT Head & Neck Surgery of two main tertiary care hospitals of Khyber Pukhtoon Khwa province namely PGMI Hayatabad Medical Complex and PGMI Govt Lady Reading Hospital Peshawar. Duration of the study was five years from July 2008 to June 2013. Medical record of the patients admitted during this period to these units was investigated and charts were reviewed. Patients both male and female whose histopathological reports were available were included in the study. Patients whose proper record was not maintained were excluded.

During this period of time, record of patients undergoing surgery for minor salivary glands was reviewed. Forty six cases fulfilled the criteria for inclusion of minor salivary gland tumors. The diagnosis was based on histopathological evidence of respected specimens.

Required data regarding age and gender of the patients, clinical presentation, complimentary investigations, histopathological reports and treatment given were obtained and recorded. Data thus obtained were analyzed using SPSS 16.0 for testing the significance of data. A P-value of <0.05 was considered statistically significant.

RESULTS

Out of total 46 patients operated, 19 were male and 27 were female. The male to female ratio was 1 to 1.4. The age range of the patients was 14 to 75 years with mean age of 41.26 years and a standard deviation of +/- 14.988. Twenty nine

patients were Pakistani while 19 patients were Afghan nationals. (Table 1).

Table 1. Demographic data

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Pakistani	27	58.7	58.7	58.7
	Afghanistan	19	41.3	41.3	100.0
	Total	46	100.0	100.0	

Overall 11 cases were benign while 35 cases were malignant in nature. (Table 2).

Table 2. Nature of disease

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Benign	11	23.9	23.9	23.9
	Malignant	35	76.1	76.1	100.0
	Total	46	100.0	100.0	

Out of the total, 24% lesions were benign & pleomorphic adenoma was the commonest (64%). Of all the lesions, mucoepidermoid carcinoma was the most common (34.8%) followed by polymorphous low grade adenocarcinoma (21.7%). Adenoid cystic carcinoma ranked third in number (19.6%). (Table 3).

Table 3. Type of Malignancy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Non malignant	11	23.9	23.9	23.9
	Mucoepidermoid ca	16	34.8	34.8	58.7
	polym low grade adenocarcinoma	10	21.7	21.7	80.4
	Adenoid cystic ca	9	19.6	19.6	100.0
	Total	46	100.0	100.0	

Regarding location of lesions, most common site was junction of hard palate with soft palate (48%) followed by hard palate (39 %) and soft palate was 13% of the lesions.

DISCUSSION

Minor salivary gland neoplasms are not frequent representing less than 20 % of all salivary gland neoplasms. Racial and geographic variations in their frequency and distribution have been reported^{6,8}. Most studies of salivary neoplasms include both the major and the minor salivary glands, and few articles focus only on minor salivary gland neoplasms only. Furthermore, there is great variability regarding the different diagnostic criteria applied to salivary glands tumors in the different classifications of the WHO¹¹. In present study, all cases were histologically re-evaluated based on the more recent salivary gland tumor classification of 2005. Most of the studies reviewed in the literature are based on earlier classifications; therefore one has to be cautious while making comparisons¹². The very low incidence of minor salivary gland tumors in our study (1.84 %) relative to the total biopsies carried during study period from 2008 to 2013 can be explained by the fact that referrals are made to these tertiary care hospitals from districts for tumors management.

Minor salivary gland lesions can be encountered anywhere in upper aerodigestive tract but the most common site is the oral cavity, and particularly the palate, where these glands are densely present. Such lesions also can be found in the cheek mucosa, in the region of the retromolar trigone, the lips, the oropharynx, or in the nasal cavities and paranasal sinuses¹³. In the series published by Waldron et al.¹⁴, the palate was the most commonly affected location (42.5%), followed by the upper lip (18.5%), oral mucosa (15%), retromolar trigone (5.4%), floor of the mouth (4.9%) and lower lip (3.3%), among other zones. In contrast, other authors report a higher presence of minor salivary gland tumors in the palatal region, representing 65-80% of the total¹⁵. In our review, the commonest location was the junction between hard palate and soft palate (47.82%), followed by the hard palate (39 %).

The relative proportion of malignant minor salivary gland tumors more than 70%, though agreement is lacking as regards the incidence of malignancy in the different studies published in the literature to date ^{7,10,12,16}. In our series the recorded proportion of malignant lesion was 76% , which is at par with most of the studies ^{3,5,6,11,17} showing predominance of malignant versus benign lesions, with a percentage incidence of more than 55%. In contrast, other studies have reported a variable proportion ^{4,7,13,15}. Different studies show that minor salivary gland neoplasms can occur at any age, though most such lesions appear between the fifth and seventh decades of life, and predominantly affect women ¹⁸. In our series of 46 cases, 58.7% were females. This matches results of other series ^{2,4,6,7}. The most common benign histological type was pleomorphic adenoma (63.6%), in coincidence with many other studies ^{2,11,14,15,19} that report a variable incidence of between 40-72% of all salivary gland tumors. The exception is the low incidence (19%) of PA lesions reported by Spiro (21). Likewise, PA has been reported to present a predilection for the hard palate and the posterior third of the soft palate ^{16,19}. Pleomorphic adenoma relapse, which is almost always due to incomplete surgical resection of the lesion, manifests especially in the form of multiple foci, and is estimated to occur in 5-30% of cases. Monomorphic adenoma was the second most frequent benign tumor in our series (18.18%), though the incidence reported in the literature is lower (between 2-4.7% of all salivary neoplasms) ^{10,20}. In most of the series, 60 to 65% of all monomorphic are located in the major salivary glands, while 35% are found in the minor salivary glands ^{16,21}.

Considering the malignant tumors of the minor salivary glands of the palate, we found 76 % of these lesions to be malignant in our study. This conforms to other studies in the international literature with given range of 50 to 78 % in various studies ^{3,5,8,11,17}. In our series mucoepidermoid carcinoma is the most common malignant tumor (34.8 %) which is consistent

with majority of studies in literature ^{2,4,8,20}. In contrast to other studies, we found adenoid cystic carcinoma to be the least common (19.6%) preceded by polymorphous low grade adenocarcinoma (21.7%) ^{17,19,20,21,25}. Although there is lack of consensus in this regard amongst many of the authors ^{3,5,6,7,18}.

CONCLUSIONS

Minor salivary gland tumours have a wide variation and the majority are malignant and the surgeon should consider them in any differential diagnosis when assessing intra-oral pathology. Lesions arising from the junction of hard and soft palate and those from hard palate are much likely to be malignant. As with all head and neck carcinomas the best outcome is achieved in early disease & hence early diagnosis and treatment is of paramount importance.

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CORRESPONDENCE ADDRESS:

Name: Dr. Muhammad Javed

Address: ENT Head and Neck Surgery
Department PGMI, Hayatabad Medical complex
Peshawar

E mail: Javaident123@yahoo.com,

Cell: +92315-4977746