PATTERNS OF MINOR SALIVARY GLAND TUMORS IN KHYBER PAHKHTUNKHWA

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ABSTRACT

Present study was carried out to determine the pattern of minor salivary gland tumors, diagnosed at City Medical Laboratory, Peshawar (Pakistan).

The study was conducted at Sardar Begum Dental College using the Anatomical pathology records of City Medical Laboratory, Peshawar from January 2003 to December 2012 and were analyzed by Statistical Program for Social Sciences version 16.

A total of 78 cases were diagnosed as minor salivary gland tumors. Out of these 47 were benign and 31 malignant. The male to female ratio for both benign and malignant tumors was 1:1.7. The mean age was 40.39 years. The most common benign tumor was Pleomorphic adenoma (89.3%) and malignant was Adenoid cystic carcinoma (87.09%). The hard palate was the most common affected site (57.4% in benign and 32.2% in malignant tumors).

The present study showed a different pattern of occurrence of malignant minor salivary gland tumors among the population of Khyber Pakhtunkhwa as compared with the European and American population.

Key Words: Pleomorphic Adenoma, Adenoid Cystic Carcinoma, hard palate.

INTRODUCTION

Minor salivary glands are diffusely distributed throughout the upper aero digestive tract. They are present in many sites such as hard palate, soft palate, lips, tongue, floor of the mouth, alveolar mucosa, oropharynx, parapharyngeal space and retro molar region. Tumors of salivary glands are relatively uncommon and account for about 3% to 10% of neoplasms of the head and neck region. Tumors that originate in the minor salivary glands account for 10 to 25% of all salivary gland tumors and the most common affected site is the hard palate (40-80%). Most of the studies have shown that females are more affected than males. Salivary gland tumors are complex tumors due to their broad histological spectrum resulting from multiple tumor cell differentiation and present a challenge to the pathologist. According to the World Health Organization classification-07 salivary gland tumors are divided into 5 groups i.e. benign epithelial tumors, malignant epithelial tumors, soft tissue tumors, hematolymphoid tumors and secondary tumors. Pleomorphic Adenoma is the most common benign tumor followed by Monomorphic Adenomas. Mucoepidermoid Carcinoma represented
the most common malignant tumor in previous series (50%), followed by Adenoid Cystic Carcinoma (25%) and Polymorphous Low-grade Adenocarcinoma (20%). Acinic Cell Carcinomas, Adenocarcinomas and Myoepithelial Carcinomas were rare.12,13,14

There are hardly any epidemiological studies of significant proportions regarding salivary gland tumors in Pakistan and none in Khyber Pakhtunkhwa. The demographics of this population are different which may lead to variations in age, type and tumor distribution.

The objective of this study was to retrospectively assess benign and malignant minor salivary gland tumors in Khyber Pakhtunkhwa, Pakistan. They were characterized according to age, gender, tumor location and histological subtype. This research will provide data which will form the basis for comparison with other populations in various countries.

METHODOLOGY

A descriptive study was carried out and the records of all the salivary gland tumors diagnosed at City Medical Laboratory during a period of 10 years (2003-2012) were retrieved from the files. The inclusion criterion was a diagnosis of minor salivary gland tumors. Exclusion criteria were major salivary gland origin tumors and other benign conditions. A total of 78 minor salivary gland tumors were diagnosed during this period. The records were reviewed according to age, gender and location. The histological subtypes were reviewed by the consultant pathologist and were classified according to WHO classification- 07 for salivary gland tumors. The data collected was then analyzed by SPSS version 16 and the frequencies of various subtypes of salivary gland tumors were compared with other studies. This research was approved by the ethical committee of Gandhara University, Peshawar.

RESULTS

A total of about 464 biopsies of salivary gland origin were received at the City Medical Laboratory during the study period. Three hundred and eight (66.37%) of these salivary gland biopsies were diagnosed as tumors of salivary gland. Out of which 78 (25.3%) were identified as tumors of minor salivary gland (Benign – 47, Malignant – 31). In the group of benign tumors, patient’s age ranged from 12 to 80 years, with peak of occurrence in the 2nd and 3rd decade of life. Mean age for benign tumors was 36.86. In the group of malignant tumors patients’ age ranged from 18 to 70 years, with a higher frequency in the 4th and 6th decade of life. Mean age for malignant tumors was 45.58. Regarding gender distribution 30 were male and 48 were female. The anatomical sites affected by minor salivary gland tumors are shown in figure 1. The common sites for minor salivary gland tumors were hard palate, buccal mucosa, lips, alveolar mucosa, soft palate and retro-molar region in descending order. The hard palate was affected in 37 cases (47.4%). Tumors of hard palate were 27 of benign nature and 10 were malignant. Buccal
mucosa was affected in 11 cases (14.1%) and lips in 7 cases (8.9%).

Pleomorphic Adenoma (52.5%) and Adenoid Cystic Carcinoma (34.6%) were the most common tumors among all the minor salivary gland tumors in present study. Pleomorphic Adenoma was the commonest benign tumor which corresponded to 87.2% of the benign tumors. The male to female ratio was 1:1.5 and the mean age was 35.95 years. The site distribution of Pleomorphic Adenoma is given in figure 2. The hard palate was the most common site of occurrence.

Four cases were reported as Monomorphic Adenoma which corresponds to 5.1% of all tumors of our sample and 8.5% of the benign tumors. The hard palate was affected in 2 cases, buccal mucosa in 1 and lips in 1. The male to female ratio was 1:1 and the mean age was 41 years.

Two cases were diagnosed as soft tissue tumors (Hemangioma), one affecting the hard palate and the other floor of the mouth. They formed 2.5% of all tumors of our sample and 4.2% of the benign tumors. Both cases were detected in the males.

Adenoid Cystic Carcinoma was the commonest malignant tumor (27 cases) which corresponded to 87% of the malignant tumors. The male to female ratio is 1:2.3 and the mean age was 45.41 years. The site distribution is given in figure 3. The most commonly affected site is hard palate.

Four cases were diagnosed as Mucoepidermoid Carcinoma which forms 5.12% of all tumors and 14.8% of the malignant tumors. The retromolar region was affected in 2 cases, soft palate and alveolar mucosa each involved in 1. The male to female ratio was 1:3 and the mean age was 46.75 years.

**DISCUSSION**

The current study showed that the benign minor salivary gland tumors were more common as compared to malignant tumors among the population, which differed from previous studies showing predominance for malignant over benign tumors.8,9

The age distribution was 12-80 years. In the present study with the mean age of 36.86 in benign tumors was 11 years younger than those with malignant tumors. This may be due to the large proportion of Pleomorphic Adenoma in the present series. Study like the one carried out in Baltimore revealed that the patients with benign tumors were 6 years younger than those with malignant tumors.9

Many studies showed that minor salivary gland tumors were more common in females than in males6,11 which was also evident in the current study.

The common anatomical location of minor salivary gland tumors found in the present study was hard palate followed by buccal mucosa. The hard palate was reported to be the predominant site of occurrence in about 40-55%.8,11,15,16 In this study 47.4% of all minor salivary gland tumors occurred in the palate which is in line with the literature.8 However only 27.02% were malignant which was in contrast to 60.5% in American study.8

Most studies have shown Pleomorphic Adenoma to be the most common minor salivary gland tumor with an incidence ranging from 33-70%.8,11,17 In the present study a similar higher prevalence (52.5%) of this tumor was found.

Adenoid cystic carcinoma was the most common malignant tumor and the second most frequent minor salivary gland tumor followed by mucoepidermoid. In studies carried out in India, Libya, United Kingdom, Venezuela, and United States of America, Mucoepidermoid Carcinoma was the most prevalent malignant tumor8,11,17,18 where as studies reported from India and Pakistan showed Adenoid Cystic Carcinoma to be the most prevalent malignant minor salivary gland tumor.19,20 There have been reports suggesting a difference in the pattern of occurrence of malignant minor salivary gland tumors in Americans, Europeans, Asians and Africans.21

The prevalence recorded in this study represents only the cases received by City Medical Laboratory and not necessarily represent the occurrence in the population at large. However, the figures certainly give an idea of their frequency of occurrence.

**CONCLUSION**

The present study found higher frequency of adenoid cystic carcinoma among the malignant minor salivary gland tumors showing a different pattern of occurrence of malignant minor salivary gland tumors among Khyber Pakhtunkhwa (Pakistan) province population as compared with the European and American. The pattern of benign minor salivary gland tumors was in line with other studies done in the world.
Patterns of minor salivary gland tumors

REFERENCE


