Original Article

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Major Salivary Gland Tumors: A Clinicopathological Study

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Abstract

Background: Major salivary gland tumors comprise a morphologically diverse group of rare tumors. The tumors also have variations in their clinicopathological profile related to racial and geographic differences. **Objective:** To find out the frequency of different types of major salivary gland neoplasm. **Methodology:** This cross sectional study was carried out on 50 patients having major salivary gland tumor in the departments of Otolaryngology of Bangabandhu Sheikh Mujib Medical University, Dhaka Medical College Hospital and Sir Salimullah Medical College Hospital from January 2010 to September 2010. **Result:** In this study, most cases occur in 5th decade. Incidence of malignant and benign parotid neoplasm was found 23.8% and 76.2% respectively. Benign and malignant tumors of submandibular gland were 50% in each group. No sublingual gland neoplasm was found in this group. **Conclusion:** Parotid gland was the most common site of origin of both benign and malignant tumours. Plemorphic adenoma was the most common benign salivary gland tumour and mucoepidermoid carcinoma was the most frequent malignant neoplasm. [J Shaheed Suhrawardy Med Coll, 2013;5(1):43-45]

Key words: Neoplasm, major salivary gland, Bangladesh

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Introduction

Salivary gland tumors (SGTs) are a heterogeneous group of neoplasm in the head and neck area. The tumors have complex morphologic appearance and different clinical behavior, a fact that renders their difficulty in diagnosis[1,2]. These tumors are rare lesions; represent less than 1% of all tumors and 3-6% of all head and neck neoplasms in various reports[3,4]. The annual incidence of salivary gland cancers ranges from 0.5 to 2 per 100,000 in different parts of the world[5]. The sex distribution for salivary gland cancers is equal, and the majority of the cases arise in the sixth decade[6].

The majority of these neoplasms are benign and only 20% are malignant. In the parotid glands, 20-25% of the tumours are malignant. This rises to 40% for the submandibular gland, and more than 90% for sublingual gland[7,8]. Among benign salivary gland neoplasm, 80% contributes pleomorphic adenoma, 10% warthins tumour and 10% others. On the other hand, malignant neoplasm of salivary gland comprises mucoepidermoid carcinoma (35%), malignant pleomorphic adenoma (20%) and acinic cell carcinoma (10-25%)[9].

Most benign neoplasm of major salivary gland manifest insidiously, that is growing slowly over a long period of time without causing any other symptoms, where as malignant neoplasm may present with rapidly enlarging swelling, pain, nerve palsy, skin invasion, neck nodes. Facial nerve paralysis is a presenting feature appears approximately one third of patients of parotid malignancy, where as submandibular gland malignancy may involve hypoglossal nerve followed by trigeminal nerve and facial nerve[10].

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The published data regarding salivary gland tumor in Bangladesh is poorly documented. The aim of this study was to describe the frequency of salivary tumors, in a hospital based sample and characterizes them according to age, sex and anatomic location.

Methodology

A cross-sectional study was done from January 2010 to September 2010 in the Departments of Otolaryngology and Head Neck Surgery of Bangabandhu Sheikh Mujib Medical University, Dhaka Medical College Hospital and Sir Salimullah Medical College and Mitford Hospital, Dhaka. A total of 50 patients of both sexes were enrolled. Neoplastic lesion was diagnosed by details history, physical examination, CT scan, MRI, USG, Cytological and histopathological examination and relevant laboratory investigations. We classified the neoplasm according to the World Health Organization classification schema of 2005[11]. All neoplastic swellings confirmed by FNAC were included. But autoimmune, inflammatory, granulomatous swelling involving salivary glands and neoplasm involving minor salivary glands were excluded from this study. The data were analyzed through SPSS version 18.00.

Results

In this series 84% patients had parotid, 16% had submandibular and none had sublingual major salivary tumor. Highest incidence of tumors were found in 5th decade (26%) of life and next common age incidence have been noted in 3rd decade (22%). Male were more prone to develop both benign (68.75% vs. 31.25%) and malignant (60% vs. 40%) parotid tumour than that of female.

Table-1: Incidence of different tumour according to site of origin:

Site of tumor	Frequency	Percentage
Parotid gland	42	84.0
Submandibular gland	8	16.0
Sublingual gland	0	0.0

The most common presentation was swelling (100%) followed by pain. Facial nerve paralysis was found in 3 cases in parotid gland malignancy. Lymphatic metastatis observed in five cases, three in parotid malignancy and two in submandibular gland malignancy.

Discussion

Salivary glands tumors are relatively uncommon, but their multifaceted clinical presentation, varied morphologic configuration and relatively unpredictable prognosis continue to attract significant medical interest[12]. The incidence of major salivary gland is little known in Bangladesh. Neoplasm of salivary gland may occur at any age. In this study highest number of patients was in the 5th decade (26%) and comparable with the findings of Reddy et al[13].

Table-2: Distribution of Respondents According to Histopathological Types (n=50)

Major salivary gland neoplasm	Parotid gland N (%)	Submandibular gland N (%)
Benign:	**32 (76.20)**	**4 (50.0)**
• Pleomorphic adenoma	27 (64.0)	4 (50.0)
• Warthins tumour	3 (7.14)	-
• Haemangioma	2 (4.76)	-
Malignant:	**10 (23.8)**	**4 (50.0)**
• Mucoepidermoid carcinoma	7(16.67)	-
• Adenoid cystic carcinoma	-	4 (50.0)
• Ca. in pleomorphic adenoma	3 (7.14)	-

Ca. = Carcinoma

In the present study, the tumors of the salivary glands were more common in males especially in malignant lesions. High male to female ratio has been reported in several outer studies[14-16]. In case of benign parotid tumours in the present study male and female ratio was found 2.2:1 and in malignant parotid neoplasms, it was 1.5: 1. In comparison, Fiorella et al[17] showed male to female ratio in benign parotid tumour as 1.67:1 and in case malignant parotid tumour as 1.07: 1.

In this series, 84% patients had parotid neoplasm and 16% had submandibular neoplasm. Among the parotid neoplasm, 10 (23.80%) cases were malignant and 32 (76.20%) cases were benign. Fiorella et al[17] showed 13.8% and 79.8% of their patients had malignant and benign neoplasm in parotid gland respectively. Regarding submandibular neoplasm 4 (50%) cases were malignant and 4 (50%) cases were benign in the present study. This finding is comparable with the findings of Afify et al[18] where benign and malignant tumor of submandibular glands were 40% and 50% respectively.

Pleomorphic adenoma (PA) undoubtedly is the most common salivary gland tumor (SGTs). As, similar to the present study, all researchers from other parts of world have noticed that this neoplasm stands for 40.4-89.9% of all SGTs[1,19-21]. Among the benign parotid tumours, 64% cases was pleomorphic adenoma which corresponds with other different western series, like Fiorella et al[17], who found 57.30% in their study. Incidence of haemangioma of parotid is relatively low in this study (5%) where in the study of Fiorella[17], it was 15% which is not consistent with the finding of our study.

Table 3: Distribution of the patients by clinical features

Clinical features	Frequency	Percentage
Swelling	50	100.0
Pain	6	12.0
Facial nerve paralysis	3	6.0
Skin involvement	2	4.0
Trismus	2	4.0
Palpable lymph node	5	10.0

*Multiple responses

Fifty percent of submandibular gland neoplasm is malignant and that for parotid gland is 23.80%. Incidence of malignancy is higher in submandibular gland which is consistent with the study of Vincentis et al[22] and Fiorella et al[17]. In this study, among the parotid malignancy, 10.67% were mucoepidermoid carcinoma and 37.14% were carcinoma in pleomorphic adenoma, where as in the study of Reddy et al[13], mucoepidermoid carcinoma was found in 18% and carcinoma in pleomorphic adenoma found in 6.9%. Mucoepidermoid tumours in this study was the commonest malignant tumour although some studies from abroad like Watkinson et al[23] showed it as the second most common malignant tumour[23].

In our series, all the cases presented with swelling. Size of the swelling in most pleomorphic adenoma were more than 2 cm and malignant tumors varied between 2 to 4 cm. Most of the patients of malignant tumors admitted in the hospital at stage III which is consistent with the findings of Jones et al10.The benign tumor generally manifests no pain or other distressing symptoms for which patients do not care for it. In under developed countries like us, due to poor socio-economic conditions and non availability of modernized hospital facilities nearby-patient often resort to local quacks and village doctors for their treatment before attending to a concerned specialist. For this reasons patient often reports late and sometimes with complication of the disease. In our series, most patients reported within 4 to 8 years of the disease.

Conclusion

Parotid gland was the most common site of origin of both benign and malignant tumours. Plemorphic adenoma was the most common benign salivary gland tumour and mucoepidermoid carcinoma was the most frequent malignant neoplasm. This information could help physician, surgeons and pathologists for more accurate diagnosis, management and early treatment.

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