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MAJOR SALIVARY GLAND TUMORS: A CLINICOPATHOLOGICAL STUDY

General Surgery

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ABSTRACT

Salivary gland neoplasm represents the most complex and diverse group of neoplasm of the head and neck. Their diagnosis and management are complicated by relative infrequency. Around 64%–80% are located in the parotid gland, 7%–11% in the submandibular glands, and the remainder being distributed between the sublingual (1%) and the minor salivary glands (9%–23%) throughout the oral cavity. The tumors also have variations in their clinicopathological profile related to racial and geographic differences.

Salivary gland neoplasms account for 0.5-2% of all tumors worldwide, and can display a remarkable range of morphological diversity between different tumor types.

Aim and objects: The aims of this study were: (1) To assess the frequency of salivary gland tumor based on tumor type and anatomic location. (2) To correlate gender and age in different tumor type. (3) To correlate the location of benign and malignant neoplasm in the head and neck area.

KEYWORDS

INTRODUCTION

Salivaryglands are located in the head and neck region and are exocrine organs responsible for the production and secretion of saliva. They encompass the three paired major glands, the parotid, submandibular and sublingual, and the minor glands . The minor salivary glands are abundant, and are generally distributed throughout the mouth, oropharynx, upper respiratory, sinonasal tracts, and the paranasal sinuses . The saliva functions as a lubricant for speech and swallowing,assists taste, has antibacterial and immunologic properties, and contains digestive enzymes .

Salivary gland neoplasms (SGN) can display a remarkable range of morphological diversity can confuse histopathological interpretation, and make diagnosis complicated . It is difficult to know the actual overall incidence of SGN as most of the benign tumors go unrecorded in most national cancer registries . However, geographical variations in the incidence of these SGN have been reported . Literature search has shown that SGN accounts for 0.5-2% of all tumors worldwide . In western countries, SGN have been reported to be between 3-6% of all head and neck tumors, while in Africa it ranges between 2.8-10% .between different tumor types, and sometimes within an individual tumor mass . In addition,hybrid tumors, de-differentiation, and the tendency for some benign tumors to progress to malignancy65 – 70 % of SGN are reported to be benign and within the parotid gland, while in the submandibular glands about half are benign.

In the Sublingual gland, tumors are very uncommon, and if present are most likely to be malignant .

The tumors have complex morphologic appearance and different clinical behavior, a fact that renders their difficulty in diagnosis.

These tumors are rare lesions; represent less than 1% of all tumors and 3-6% of all head and neck neoplasms in various reports3,4. The annual incidence of salivary gland cancers ranges from 0.5 to 2 per 100,000 in different parts of the world5. The sex distribution for salivary gland cancers is equal, and the majority of the cases arise in the sixth decade6. 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 gland7,8. Amongbenign 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 nerve10.

Methodology

Study was done on the patients who came to the department of surgery in JLNMCH from January 2001 to December 2018.A total of 60 patients of both sexes were enrolled.

Neoplastic lesion was diagnosed by details history, physical examination, USG. FNAC(cytological), Laboratory investigation, CT, MRI and histopathological examinations. The neoplasm were classified according to the World Health Organization classification schema of 2005.All neoplastic swellings confirmed by FNAC were included in study.

RESULT

In this series had 80% parotid tumor ,20% had submandibular major salivary tumor. Highest incidence of tumors were found in 5th decade (28%) of life and next common age incidence have been noted in 3rd decade (20%). Male were more prone to develop both benign (68.75% vs. 31.25%) and malignant (60% vs. 40%) parotid tumor than that of female.

The most common presentation was swelling (100%) followed by pain. Facial nerve paralysis was found in 2 cases in parotid gland malignancy. Lymphatic metastatis observed in five cases, three in parotid malignancy and two in submandibular gland malignancy.

Site of tumor	frequency	Percentage
Parotid gland	48	80
Submandibular gland	12	20
Sublingual gland	o	

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 .Neoplasm of salivary gland may occur at any age. In this study highest number of patients was in the 5th decade(28%) and comparable with the findings of Reddy et al13.

Distribution according to Histopathological Types

Major salivary gland neoplasm	Parotid gland%	Submandibular gland%	**sublingualgland**
Benign	37(77.o8%)	6(54.54)	0
Pleomorphic adenoma	23(62.16%		

Warthin's tumor	**11(29.72%)**	**6(54.54)**	
Haemangioma	**3(8.10%)**		
Malignant	**11(18.33%)**	**5(45.45)**	
Mucoepidermoid	**8(13.33)**		
Adenoid cystic carcinoma		**5(45.45)**	
Ca. in pleomorphic adenoma	3(5%)		

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. 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: l. In comparison, Fiorella et al17 showed male to female ratio in benign parotid tumour as 1.67:1 and in case malignant parotid tumour as 1.07: 1.

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 SGTs1..

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

Mostof the patients of malignant tumors admitted in the hospital at stage III which is consistent with the findings of Jones et al.The benign tumor generally manifests no pain or other distressing symptoms for which patients do not care for it.

In under developed countries , due to poor socioeconomic 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.

Most patients report within 2 to 10 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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