INTRODUCTION

Tumours of the salivary glands are an uncommon phenomenon. A heterogeneous community of pathologies includes around 3–10% of carcinomas of the head and neck and just 0.5% of all malignant tumours suit these forms. Although most other cancers of the head and neck are closely linked to smoking and alcohol, the salivary glands do not play a role in these. Some studies have found that a diet rich in vitamin C and low in cholesterol can help prevent salivary cancer of the gland. An increased risk of salivary gland cancers was found to be associated with HIV infection.

ABSTRACT

Introduction: Tumours of the salivary glands are an uncommon phenomenon. A heterogeneous community of pathologies includes around 3–10% of carcinomas of the head and neck and just 0.5% of all malignant tumours suit these forms. Although most other cancers of the head and neck are closely linked to smoking and alcohol, the salivary glands do not play a role in these. Some studies have found that a diet rich in vitamin C and low in cholesterol can help prevent salivary cancer of the gland. An increased risk of salivary gland cancers was found to be associated with HIV infection.

Objective: To identify different salivary gland histomorphological trends tumours, age, frequency and distribution of sites.

Material & Methods: Present study was at Chandulal Chandrakar Memorial Medical College and hospital. A total of 63 samples were studied. Demographic information was collected with information on location of tumor and size of tumor was determined for each salivary gland tumor. In both major and minor glands of malignant salivary gland tumours, frequency of benign and malignant tumor was determined.

Results: There were total 23 malignant tumor and 40 benign tumours. It has been observed that out of total 23 malignant tumours, 17(73.9%) were parotid glands, 4(17.4%) were submandibular glands while 2(8.7%) were minor salivary gland. Among mucoepidermoid carcinoma, the parotid gland was found to be most common (N=8, 34.8%). Among all 40 benign tumours, 1(2.5%) was minor salivary gland, 5(12.5%) were submandibular gland and 34(85%) parotid gland was more frequent compared to minor salivary gland and submandibular gland.

Conclusion: The most common carcinoma of mucoepidermoid is widely known malignant tumour of the parotid and salivary glands is a common site to the same. The histopathological checkup is mandatory for salivary gland tumour diagnosis as they occur to have a vast range of morphological patterns.

Key Words: Malignant, Tumour, Salivary glands, Carcinomas, Heterogeneous community
20–25% of tumours in the parotid glands are malignant. Of the submandibular glands, this increases to 40%, and more than 90% of sublingual gland tumours are malignant. An increased risk of salivary gland cancers was found to be associated with HIV infection.

Tumours of the salivary glands may be shocking. Morphological diversity vary among different types of tumours and even inside a single mass of tumours. So, it is important to identify various histomorphological patterns and classify them accordingly. The objectives of the present study were to identify different salivary gland histomorphological trends, tumours, age, frequency and distribution of sites.

**MATERIAL & METHODS**

The present study was at Chandulal Chandrakar Memorial Medical College and hospital. A total of 63 samples were studied. Demographic information was collected with information on the location of the tumour and the size of the tumour was determined for each salivary gland tumour. In both major and minor glands of malignant salivary gland tumours, frequency of benign and malignant tumour was determined. The specimens for biopsy were fixed in 10% formalin where they were further processed into paraffin-embedded sections and stained with hematoxylin and eosin (HE). The classification of histopathology of all tumours was done according to the World Health Organization (WHO) histological typing of salivary glands.

**RESULTS**

**Table 1: Gender wise distribution of salivary gland tumours and their site**

| Sex     | Minor Salivary gland | Submandibular gland | Parotid gland | Total |
|---------|----------------------|---------------------|--------------|-------|
|         | Benign   | Malignant | Benign   | Malignant | Benign | Malignant | Benign | Malignant | Benign   | Malignant |    |
| Female  | 1        | 1         | 2        | 3         | 12     | 6         | 25   |
| Male    | 0        | 1         | 3        | 1         | 22     | 11        | 38   |

Table no 1 showed: there were 25 females and 38 males included in this study.

**Table 2: Distribution of salivary gland tumours according to age**

| Age groups (in years) | Malignant Tumor | Benign Tumor | Total no. of cases |
|-----------------------|-----------------|--------------|-------------------|
| <20                   | 1               | 4            | 5                 |
| 21-40                 | 4               | 9            | 13                |
| 41-60                 | 10              | 14           | 24                |
| 61-80                 | 6               | 10           | 16                |
| >80                   | 2               | 3            | 5                 |
| Total                 | 23              | 40           | 63                |

Table no 2 shows it was observed that the cases ranged from 13 years to 81 years with a mean age of 45.2 years. A maximum number of malignant cases was found in the age group 41-60 years followed by 61-80 years. A benign tumour was common in the age group of 41-60 years. There were a total of 23 malignant tumours and 40 benign tumours.

**Table 3: Distribution of malignant tumour in salivary glands.**

| Type of tumour                  | Minor salivary gland | Submandibular gland | Parotid gland | Total |
|---------------------------------|----------------------|---------------------|--------------|-------|
| Polymorphous low-grade adenocarcinoma | 0                    | 0                   | 0            | 0     |
| Acinic cell carcinoma           | 0                    | 0                   | 0            | 0     |
| Metastatic undifferentiated carcinoma | 0                    | 0                   | 0            | 0     |
| Squamous cell carcinoma         | 0                    | 0                   | 0            | 0     |
| Basal cell carcinoma            | 0                    | 0                   | 1            | 1     |
| Unclassified malignant tumor    | 0                    | 0                   | 1            | 1     |
| Adenocarcinoma NOS              | 0                    | 0                   | 1            | 1     |
| Carcinoma Ex-pleomorphic adenoma | 0                    | 1                   | 2            | 3     |
| Adenoid cystic carcinoma        | 1                    | 1                   | 4            | 6     |
| Mucoepidermoid carcinoma        | 1                    | 2                   | 8            | 11    |
| Total                           | 2                    | 4                   | 17           | 23    |
Table no 3 shows: It has been observed that out of total 23 malignant tumours, 17(73.9%) were parotid glands, 4(17.4%) were submandibular glands while 2(8.7%) were minor salivary gland. Among mucoepidermoid carcinoma, the parotid gland was found to be most common (N=8, 34.8%).

Table 4: Distribution of Benign tumor glands

| Type of tumor         | Minor salivary gland | Submandibular gland | Parotid gland | Total |
|-----------------------|----------------------|---------------------|---------------|-------|
| Lipoma                | 0                    | 0                   | 0             | 0     |
| Schwannoma            | 0                    | 0                   | 1             | 1     |
| Basal cell adenoma    | 0                    | 0                   | 3             | 3     |
| Myoepithelioma        | 0                    | 0                   | 3             | 3     |
| Monomorphic adenoma   | 0                    | 1                   | 5             | 6     |
| Warthins tumor        | 0                    | 2                   | 9             | 11    |
| Pleomorphic adenoma   | 1                    | 2                   | 13            | 16    |
| Total                 | 1                    | 5                   | 34            | 40    |

Among all 40 benign tumours, 1(2.5%) was minor salivary gland, 5(12.5%) were submandibular gland and 34(85%) parotid glands. In warthins tumour (N=9, 22.5%) and pleomorphic adenoma (N=13, 32.5%) parotid gland was more frequent compared to minor salivary gland and submandibular gland.

**DISCUSSION**

The etiologic causes of cancers of the salivary gland remain unknown. Whereas most other cancers of the head and neck are closely linked to smoking and alcohol, the salivary glands do not play a role in these. Some studies have found that a diet rich in vitamin C and low in cholesterol can help prevent salivary cancer of the gland. The most common form overall for the malignant salivary tumour is mucoepidermoid carcinoma. In the present study parotid was the most frequent site of cancer 80.9% in agreement with the study done by Amin NS et al. which reported parotid as most common 77.1%. Parotid was followed by the submandibular gland (14.3%) in our study compared to 17.7% in the study by Amin NS et al. whereas the minor salivary gland was the least common site noted at 4.78% in our study.

In this study, the mucoepidermoid carcinoma was the most common malignant salivary gland tumour constituting 36.5% cases (N=23) which is similar to study of the histomorphological spectrum of salivary gland reporting 36.1% of cases. The commonest type overall is mucoepidermoid carcinoma for malignant salivary tumour. However, if in turn each salivary gland is looked upon, it can be seen that mucoepidermoid carcinoma is the only commonest cancer in the parotid glands comprising about 33% as shown in some studies. In our study mucoepidermoid carcinoma in parotid gland was found to be most common (N=8, 34.8%). A large number of malignant cases were observed in the fourth decade followed by the fifth decade in the present study. A study by Chatterjee et al. and Amin NS reported a large number of malignant cases in 3rd decade followed by the fourth decade. Tumours with salivary glands may display a remarkable range of morphological variation of the various types of tumours and even within the mass of a single tumour. In such instances, they are hard to accurately identify on histopathological grounds only.

**CONCLUSION**

Tumours of the salivary gland are extremely rare. Benign salivary Gland tumours are more commonly identified than malignant ones. The Parotid gland is the most frequent site for the development of tumours in the salivary gland. Adenoma with pleomorphic impact is the tumour detected most commonly in all salivary gland tumours. The most common carcinoma of mucoepidermoid is widely known malignant tumour of the parotid and salivary glands is a common site to the same. A histopathological checkup is mandatory for salivary gland tumour diagnosis as they occur to have a vast range of morphological patterns.

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