

FNAC of Salivary Gland Lesions - A Hospital Based Study

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Abstract

Current study was done to find out pattern of various Salivary gland lesions encountered in our hospital to get a overview of the lesion pattern in our region as it is a tertiary care hospital and receives majority of the patients except those diagnosed outside. The present study was carried out in the department of pathology, cytology section, over a period of 2 years from Jan 2015 to Dec 2016. It was a retrospective study. -Over a period of 2 years, 160 cases were seen. 8 cases were reported to be non satisfactory. The age of the patients ranged from 8 years to 75 years. Maximum number of cases were seen in the age range of 31-40 years. Females were found to be affected slightly more than males. Male female ratio was 1:1.1. In the present study, Out of 160 patients Non neoplastic lesions accounted for 70 cases (43.7%), followed by 62(38.7%) benign tumours and 20(12.5%) of malignant tumours. 8 cases (5%) were found to be unsatisfactory because of scanty material. Commonest gland involved was parotid 104 cases(65%) followed by submandibular gland 44 cases (27.5%) and minor salivary glands 4 cases(2.5%) whereas no case of sublingual salivary gland lesion was observed in the present study. Chronic sialadenitis, Pleomorphic adenoma, Mucoepidermoid carcinoma were found to be the most common lesion among non neoplastic, benign and malignant lesions respectively. Non neoplastic lesions are the most common followed by benign and malignant lesions. Pleomorphic adenoma was the most common benign salivary gland tumour and mucoepidermoid carcinoma was the most frequent malignant neoplasm. Parotid gland was the most common site of origin in all the lesions.

Key Word

Cytology, Salivary gland, Parotid Gland, Pleomorphic Adenoma

Introduction

The salivary glands are exocrine glands with ducts that form saliva. There are four pairs of salivary glands. The parotid glands, submandibular glands, sublingual glands, buccal glands. Any unexplained salivary gland mass is an indication for fine needle aspiration. Salivary gland tumours account for less than 3% of all head and neck tumours. Age incidence varies widely extending from children to adults over 80 years of age. FNAC is considered to be the preferred biopsy method because incisional biopsy is associated with an increased risk of infections and potential contamination of surgical planes. FNAC, by contrast is a cost effective technique that

poses minimal risk to the patient. Clinical and imaging findings cannot always establish the origin of tumours in head and neck regions. Thus, a primary goal of FNAC is to distinguish salivary gland lesions from a non salivary gland head and neck mass, especially those of lymph node origin, but also soft tissue lesions and skin and skin adnexal masses (1).

Specific cytologic diagnosis can be made in majority of cases, enabling clinicians and patients to make appropriate informed decisions. Thus, the current study was undertaken to elucidate the cytomorphological features of various salivary gland lesions.

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Material and Methods

The present study was carried out in the department of pathology, cytology section, over a period of 2 years from Jan 2015 to Dec 2016. It was a retrospective study. The data was collected from cytology registration forms. Data on the cytological features, age and sex were retrieved. For all the patients Papanicolaou stained and Romanowsky stained slides were available for review. The lesions were classified as Non neoplastic, benign lesions, Malignant lesions and Unsatisfactory.

Result

Age and sex distribution of lesions: Over a period of 2 years 160 cases were seen. 8 cases were reported to be non satisfactory. The age of the patients ranged from 8 years to 75 years. Maximum number of cases were seen in the age range of 31-40 years. Peak age incidence for benign tumours was 31-40 years whereas malignant tumours were found between age group of 41-50 years. Females were found to be affected slightly more than males. Male female ratio was 1:1.1.

Pattern of lesion: In the present study, Out of 160 patients Non neoplastic lesions accounted for 70 cases (43.7%), followed by 62(38.7%) benign tumours and 20(12.5%) of malignant tumours. 8 cases (5%) were found to be unsatisfactory because of scanty material. Commonest gland involved was parotid 104 cases(65%) followed by submandibular gland 44 cases (27.5%) and minor salivary glands 4 cases(2.5%) whereas no case of sublingual salivary gland lesion was observed in the present study.

In non neoplastic lesions, Out of 70 cases, 40 cases(57%) were seen in the parotid gland followed by 30 cases/70 (33%) in submandibular gland. Chronic sialadenitis was the most common lesion 40 cases/70 (57%). It was followed by 18 cases/70(25.7%) of sialadenosis, 7 cases/70 (10%) of acute sialadenitis, 3 cases /70 (4.2%) of mucin cyst, 2 cases/70 (2.8%) of lymphoepithelial sialdenitis.

In neoplastic lesions, Out of 82 cases, most commonly involved site was the parotid gland 64cases/

82 (78%) followed by 14 cases/82 (17%) in submandibular gland and 4 cases/82(5%) in minor salivary gland. Benign tumours 62 cases were more than malignant cases 20 cases. Among the benign tumours, Pleomorphic adenoma was the most common tumour 52 cases followed by warthins tumour 6 cases and 2 cases each of monomorphic and basal cell adenomas.

Among the malignant tumour, Mucoepidermoid carcinoma 9 cases/20 were found to be the most common followed by 5 cases/20 of adenoid cystic carcinoma, 4 cases /20of carcinoma ex pleomorphic adenoma and 2 cases/20 of acinic cell carcinoma.

Discussion

In the diagnosis of salivary gland lesions, FNAC has gained the popularity as diagnostic tool due to its low cost and safe procedure with minimal risk to the patients and aid to the clinicians in the management planning. The rate of unsatisfactory samples was reported to be varying from 3 to 12% by Omhare A *et al* (2). In the present study it was 5%. This difference may be due to inaccessibility of the lesion and sampling errors.

Over a period of 2 years 160 cases were seen. 8 cases (5%) were reported to be non satisfactory. The age of the patients ranged from 8 years to 75 years. Maximum number of cases were seen in the age range of 31-40 years. Similar to the study done by Musani A *et al*.(3)

Peak age incidence for benign tumours was 31-40 years whereas malignant tumours were found between age group of 41-50 years. Similar to study done by Musani A *et al*.(3)

Females were found to be affected slightly more than males. Male female ratio was 1:1.1. Similar to study done by Ito FA *et al* (4), Lima SS *et al* (5). Lima SS *et al* (5) in his study found a male female ratio of 1:1.4. However it was in contrast to studies done by Malik KA *et al* (6) where high male to female ratio was seen.

In the present study, Out of 160 patients Non neoplastic lesions accounted for 70 cases (43.7%), followed by 62(38.7%) benign tumours and 20(12.5%)

Table 1 . Age and Sex Distribution of the lesion (except the unsatisfactory cases)

| Age | Non Neoplastic | | Benign Tumours | | Malignant Tumours | |
|-------|----------------|----|----------------|----|-------------------|---|
| | M | F | M | F | M | F |
| 0-10 | 6 | - | 2 | - | - | - |
| 11-20 | 2 | 6 | 2 | 2 | - | - |
| 21-30 | 6 | 8 | 3 | 6 | 1 | 1 |
| 31-40 | 2 | 16 | 10 | 12 | - | 2 |
| 41-50 | 4 | 8 | 8 | 4 | 6 | 4 |
| 51-60 | 6 | 2 | 2 | 6 | 2 | - |
| 61-70 | 4 | - | 1 | 2 | 2 | 1 |
| >70 | - | - | - | 2 | 1 | - |
| Total | 30 | 40 | 28 | 34 | 12 | 8 |

Table 2. Distribution Pattern of Various Salivary Gland Lesions

| Lesion | Subtype | Number | Percentage% |
|-------------------------------------|----------------------------------|--------|-------------|
| Non Neoplastic Lesion (70) | Acute sialadenitis | 7 | 4.3 |
| | Chronic sialadenitis | 40 | 25 |
| | Sialadenosis | 18 | 11.2 |
| | Lymphoepithelial sialadenitis | 2 | 1.2 |
| | Mucin cyst | 3 | 1.8 |
| Benign Tumours (62) | Pleomorphic adenoma | 52 | 32.5 |
| | Warthins tumour | 6 | 3.7 |
| | Monomorphic adenoma | 2 | 1.2 |
| | Basal cell adenoma | 2 | 1.2 |
| | Mucoepidermoid carcinoma | 9 | 5.6 |
| Malignant Tumours (20) | Adenoid cystic carcinoma | 5 | 3 |
| | Carcinoma ex pleomorphic adenoma | 4 | 2.5 |
| | Acinic cell carcinoma | 2 | 1.2 |
| Unsatisfactory (8) | | 8 | 5 |
| Total | | 160 | 100 |

of malignant tumours. 8 cases (5%)were found to be unsatisfactory because of scanty material. The pattern was similar to that found in the study done by Tayal U *et al* (7). However in contrast to our study Tessy PJ *et al* (8) found benign tumours to be the most common followed by malignant lesions and inflammatory lesions were the least common.

Commonest gland involved was parotid 104 cases(65%) followed by submandibular gland 44 cases (27.5%)and minor salivary glands 4 cases(2.5%) whereas no case of sublingual salivary gland lesion was observed in the present study. Similar to study done by Gill MS *et al* (9).

In non neoplastic lesions, Out of 70 cases, 40 cases(57%) were seen in the parotid gland followed by 30 cases/70 (33%) in submandibular gland. Chronic sialadenitis was the most common lesion 40 cases/70 (57%). Similar to that found in study done by Tayal U *et al* (7). It was followed by 18 cases/70 (25.7%) of sialadenosis, 7 cases/70 (10%) of acute sialadenitis, 3 cases /70 (4.2%) of mucin cyst, 2 cases/70 (2.8%) of lymphoepithelial sialadenitis.

In neoplastic lesions, Out of 82 cases , most commonly involved site was the parotid gland 64cases/ 82 (78%) followed by 14 cases/82 (17%) in submandibular gland and 4 cases/82 (5%) in minor salivary

gland. Similar to that seen in study done by Gill MS *et al* (9).

Out of 160 cases, benign tumours 62 cases (34.4%) were more than malignant 20 cases (12.5%). Similar finding was seen by Sushma H *et al* (10), Musani A *et al* (3) and Tessy PJ *et al* (8). The rate of benign neoplasm was found to be lower in our study as compared to that done by Choudhary AA *et al* (11) and Mihashi *et al* (12) wherein it ranged from 49 to 83%. Among the benign tumours, Pleomorphic adenoma was the most common tumour 52 cases (82.3%). Similar to the study done by O Dwyer P *et al* (13), Tessy PJ *et al* (8) wherein pleomorphic adenoma was found to comprise of 50% and 86.6% cases of salivary gland tumour respectively. It was followed by warthins tumour 6 cases and 2 cases each of monomorphic and basal cell adenomas. Similar to the pattern seen by Tessy PJ *et al* (8).

Among the malignant tumour, Mucoepidermoid carcinoma 9 cases/20 were found to be the most common. Similar to that seen in the study done by Tayal U *et al* (7), Sushma H *et al* (10). However Nsuansangiam *et al* (14) found lymphoma to be the most common primary malignant salivary gland neoplasm followed by mucoepidermoid carcinoma. It was followed by 5 cases/20 of adenoid cystic carcinoma, 4 cases/20 of carcinoma ex pleomorphic adenoma and 2 cases/20 of acinic cell carcinoma.

Conclusion

Non neoplastic lesions are the most common followed by benign and malignant lesions. Pleomorphic adenoma was the most common benign salivary gland tumour and mucoepidermoid carcinoma was the most frequent malignant neoplasm. Parotid gland was the most common site of origin

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