Pattern of Salivary Gland Diseases Diagnosed by Fine Needle Aspiration Cytology- in Rangpur

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Abstract:
Context: The purpose of the study was to know the overall prevalence of various salivary gland diseases. **Methods:** One hundred patients with salivary gland swelling of both sexes were selected from out patients department. We performed Fine Needle Aspiration Cytology (FNAC) of all patients in the Department of Pathology, Rangpur Medical College, Rangpur, from January 2015 to December 2018. **Results:** The age range of the patients was 15 to 65 years. Out of 100 cases, 40 cases (40%) were inflammatory lesions, 43 cases (43%) benign neoplasms (pleomorphic anenoma), 5 cases (5%) were non-neoplastic cysts, 8 cases (8%) mucoepidermoid carcinoma, 2 cases (2%) adenocarcinoma 1case (1%) adenoid cystic carcinoma and malignant mixed tumor 1 cases (1%). **Conclusions:** Fine Needle Aspiration Cytology successfully evaluated salivary gland diseases in Rangpur Medical College. Among the neoplastic lesions, pleomorphic adenomas were the most common salivary gland lesion (43%).

Indexing words: Fine Needle Aspiration Cytology (FNAC), Salivary gland diseases

Introduction:

There are 3 pairs of major salivary glands- parotid, submandibular and sublingual glands. In addition, there are innumerable minor salivary glands distributed throughout the mucosa of the oral cavity. Salivary gland swellings may results from a variety of different diseases like inflammation, cyst or neoplasm. Among the primary epithelial tumors, 64-80% occur in the parotid glands, 7-11% occur in the submandibular glands, less than 1% occur in the sublingual and 9-23% occur in the other minor salivary glands.[1,2,3] Salivary gland tumors are uncommon, corresponding to approximately 3-10% of neoplasm's of the head and neck regions. Salivary gland swellings are often visible and palpable, and are not difficult to sample.[4,5] Fine needle aspiration cytology (FNAC) of suspected salivary gland lesions has an established role in preoperative diagnosis and management of patients. It has acquired an edge over incisional biopsy and frozen section.[6] Fine needle aspiration cytology (FNAC) is a simple, inexpensive and easily performed outpatient procedure which can provide a rapid diagnosis.[7,8,9,10] FNAC has proved to be a very important diagnostic tool in salivary gland swellings.[11,12,13] FNAC is more acceptable to the patient, surgeon and pathologist because of its easy technique, reliability, less morbidity, an low incidence of complication.[14,15] The present study was carried out to find out the overall pattern of diseases of salivary gland swellings by fine needle aspiration cytology.

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Methods:

This study was done in the Department of Pathology, Rangpur Medical College, Rangpur from January 2015 to December 2018. Subjects of the study were mostly the patient attended in ENT outpatient Department from the territory of Rangpur. During this period a total 100 FNACs were done on salivary gland swellings after taking informed written consent from the patient following a brief history and physical examination. Cytology slides were stained with Haematoxyline and Eosin (H & E) stain and examined under microscope. Then data were compiled and tabulated as per age.



Figure 1: Salivary gland Swelling (Neck Mass)

Results:

Out of 100 patients who underwent fine needle aspiration cytology and included in this study, 52 (52 %) were males and 48 (48%) were females with male to female ratio was 1: 0.92. Most of the males were in the 30-50 years age group and females in 21-50 years age group (**Table 1**).

Table 1: Distribution of the patients as per age and sex

Age group (n=100)	Male (52)	Female (48)
<20	3	5
21 – 30	15	10
31 – 40	17	12
41 – 50	12	13
>60	5	8

The results of FNAC showed that 40 cases (40%) were inflammatory lesions, 5 cases (5%) were non-neoplastic cyst, 43 cases (43%) were benign neoplasms and 12 cases (12%) were malignant neoplasms (**Table 2**).

Table 2: Distribution of salivary gland diseases (n=100)

Diseases	Number (n)	Percentage (%)
Inflammatory lesions	40	40
Non-neoplastic cysts	5	5
Benign neoplasms	43	43
Malignant neoplasms	12	12
Total	100	100

The number of cases which were seen in the parotid gland, the submandibular gland and the minor salivary glands were 60 (60%), 37 (37%) and 3 (03%) respectively. The commonest gland which was involved was the parotid gland in both males (60%) and females (40%).

Non-specific sialadenitis was common in major salivary glands, particularly submandibular glands.

Benign neoplasms were common in 30-40 years age group with slight female predominance. Pleomorphic adenoma is the commonest of all salivary gland neoplasms (78.2%).

Malignant tumors were common in 40-65 years age group with male predominance. The commonest malignant tumor was mucoepidermoid carcinoma (14.55 %) followed by adenocarcinoma (3.63%), adenoid cystic carcinoma (1.81%) and (1.81%) were carcinoma expleomorphic adenomas (malignant mixed tumor).

Table 3: Frequency of distribution of neoplastic tumors (n=55)

Cytological types	Number (55)	Percentage (%)
Pleomorphic adenoma	43	78.20
Mucoepidermoid carcinoma	8	14.55
Adnocarcinoma	2	3.63
Adenoid cystic carcinoma	1	1.81
Malignant mixed tumor	1	1.81
Total	55	100

Discussion:

A salivary gland swelling can present in a variety of locations, depending on the salivary gland affected. A swelling that arises in the parotid or submandibular gland usually presents as an upper neck mass. A swelling of minor salivary gland or sublingual gland typically presents as an intra-oral swelling.

In this study, we analyzed the pattern of cytological findings in patients presenting in our institution with swelling arising from salivary gland. Male predominance was observed in our study similar to that reported by other studies in the literature.[16,17,18,19]

In the present study parotid gland was the most commonly affected site (60%) followed by submandibular gland (37%) and minor salivary glands (03%). These findings were in accordance with the studies Frable and Frable, Boccato et al, and Rajdeo et al.[11,12,20]

In our study maximum patients (79%) were in the age range of 30-50 years. Ahmed S et al also observed maximum patients in the age range of 31-40 years.[21]

In the present study FNAC showed that 40% were sialadenitis, 05% were non-neoplastic cysts, 43% were benign neoplasms and 12% were malignant neoplasms. This findings was in accordance with studies of Frable and Frable et al, Stewart et al. and Elagoz et al. [11,22,23]

Benign neoplasms were common in 30-40 years with female predominance, which is comparable with the study done by Ahmed et al.[21]

Malignant neoplasms were common in 40-65 year age group with male predominance which is also comparable with study done by Ahmed et al.[21]

Pleomorphic adenoma was the commonest of all salivary gland lesions (78.2%) which are similar to studies of Gandhi et al and Roy et al.[18,24]

Mucoepidermoid carcinoma were most common

malignant tumors (14.55) in our study which were comparable with studies conducted by Fernandes et al and Singh et al.[1,19]

Conclusion:

FNAC is a safe and effective modality in diagnosis of patients with salivary gland lesions. This procedure catagirized 45 (45%) of the salivary gland lesions as non-neoplastic and 55(55%) as neoplastic lesions. Among the neoplastic lesions, pleomorphic adenomas was the most common salivary gland lesion.

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