



FINE NEEDLE ASPIRATION CYTOLOGY IN DIAGNOSIS OF SALIVARY GLAND LESIONS.

Pathology

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ABSTRACT

Introduction: Fine Needle Aspiration Cytology (FNAC) is an important tool for the pre-operative diagnosis of salivary gland lesions. **Materials and methods:** A retrospective hospital based study was done in which a total of 90 cases of salivary gland swellings were included. FNAC was done in all the cases. **Results:** Of the 90 cases, majority (73.3%) involved the parotid gland. Eighteen cases (20%) were non-neoplastic lesions, comprised of sialadenitis, retention cyst and sialadenosis. Of a total of 72 neoplasms, 63(70%) were benign and 09(10%) were malignant salivary gland tumors. Most common benign salivary gland lesion was pleomorphic adenoma while the commonest malignant lesion was mucoepidermoid carcinoma. Cytological and histopathological correlation found in 54.4% of cases. **Conclusion:** We conclude that FNAC is a simple, safe, minimally invasive and reliable technique for preoperative evaluation of salivary gland lesions.

KEYWORDS:

Fine Needle Aspiration, salivary gland, pleomorphic adenoma.

Introduction: Fine needle aspiration cytology (FNAC) is a popular method for diagnostic evaluation of salivary gland masses due to their superficial nature and easy accessibility for the procedure. This technique assumes greater importance considering the lack of characteristic clinical or radiologic features that may suggest a particular diagnosis. Though, few symptoms and signs may suggest malignancy, most malignant salivary gland lesions cannot be differentiated from their benign counterparts on clinical criteria alone.¹ Salivary gland swellings can result from tumours, an inflammatory process or cysts. The characteristic cytologic features of common salivary gland lesions have been well-delineated in literature.² However, there also exist cytologic pitfalls and overlapping features that make an accurate diagnosis difficult in few cases. This has led to a wide-range of sensitivities (62-97.6%) and specificities (94.3- 100%) of cytologic diagnosis.^{3,4} The present study was done to evaluate the role of FNAC in the diagnosis of salivary gland lesions. **Materials and methods:** A retrospective study was done in department of pathology of a tertiary care hospital for a period of one year. A total of ninety cases of salivary gland lesions, attending the outpatient and inpatient wards of surgery and ENT department of a tertiary care hospital were included in the study. The cases were thoroughly interrogated, clinically examined and relevant investigations done. FNAC procedure was explained to the patient and patient was placed in a comfortable position. They were then subjected to fine needle aspiration cytology. Aspirations were carried out with 21 or 22 gauge needles of varying lengths with 10 ml syringes in a syringe holder after careful clinical examination of the lesion. The samples were placed on a glass slide and smears were made by inverting second glass slide over the drop and as it spreads, pulling the slides apart horizontally or vertically. Smears were stained by using MGG and Papanicolaou stain. Cytologic diagnosis was compared with histopathologic diagnosis wherever it was available. **Results and observations:** Maximum number of cases was observed in age group 21-30 years and there were 54 male and 36 female cases in our study as shown in Table 1.

TABLE – 1
AGE AND SEX DISTRIBUTION OF SUBJECTS

AGE	MALE	FEMALE
11-20 Years	00	00
21-30 Years	19	14
31-40 Years	15	09
41-50Years	04	03
51-60Years	09	06
61-70 Years	05	03
71-80 Years	01	01
81-90 Years	01	00
TOTAL	54	36

Commonest gland involved was parotid (73.3%, 66/90), followed by submandibular gland (23.3%, 21/90) and minor salivary glands (3.33%, 03/90) whereas no case of sublingual salivary gland lesion was observed in the present study. Eighteen cases (10%) were non-neoplastic lesions, comprised of sialadenitis, retention cyst and sialadenosis. There were eighteen non-neoplastic lesion and seventy two neoplastic lesion. Of a total of 72 neoplasms, 63 were benign and 09 were malignant salivary gland tumors.

TABLE – 2
CYTOLOGICAL DIAGNOSIS

CYTOLOGICAL DIAGNOSIS	CASES%
Non neoplastic	18
Neoplastic	63
Benign	09
Malignant	
Total	90

TABLE – 3
PATTERN OF LESION IN FNAC

CYTOLOGICAL DIAGNOSIS	CASES%
Chronic sialadenitis	08
Sialadenosis	05
Cystic lesion	05
Pleomorphic adenoma	57
Warthins tumour	04
Oncocytoma	02
Mucoepidermoid carcinoma	04
Adenoid cystic carcinoma	03
Acinic cell carcinoma	02
Total	90

Most common benign salivary gland lesion was found to be pleomorphic adenoma as shown in figure 1 while the commonest malignant lesion was mucoepidermoid carcinoma as shown in figure 2.

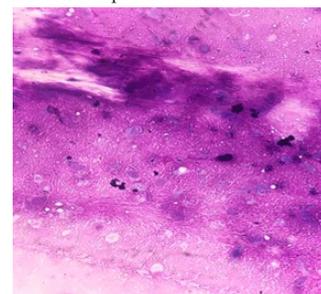


Fig 1: Cytology of Pleomorphic adenoma.

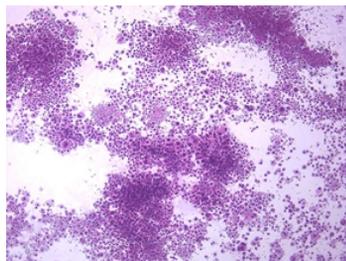


Fig 2: Cytology of high grade mucoepidermoid carcinoma

Cytological and histopathological correlation was found in 54.4% of cases. **Discussion:** FNAC is a widely used, safe and less traumatic diagnostic procedure capable of providing important information to the treating physician. In salivary gland masses, FNAC serves to determine the nature of the lesion (inflammatory/neoplastic – benign or malignant) and in some cases, the specific diagnosis. Though the management of almost all neoplastic salivary gland lesions is surgical excision, a pre-operative diagnosis of benign or malignant assists the clinician in planning the extent of surgery.⁵ Non-neoplastic lesions constituted 20% of all salivary gland aspirates in our study. This proportion is in accordance with the existing literature (11-66%).^{6,7} In the present study, 70% of salivary gland tumors were benign and 10% were malignant. This is similar to previous reports.⁶ Pleomorphic adenoma was the most frequent benign neoplasm while mucoepidermoid carcinoma was the most frequent malignant lesion in our study. Among the non neoplastic lesions, the maximum number of cases were of chronic sialadenitis. This was in accordance to the study done by M. M. Khandekar et al.⁸ **Conclusion:** FNAC of the salivary gland tumours is advantageous for both the patients and the clinicians because of its immediate results, accuracy, economy, and lack of complications. Awareness of the therapeutic implications and limitations of the cytological interpretation amongst both the clinicians and the cytopathologists should enable FNAC to its best advantage.

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