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Cytological Evalution of Salivary Gland Lesions

KEYWORDS: Cytopathology, Salivary gland lesions, Pleomorphic adenoma

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ABSTRACT *Background: Salivary gland lesions present as superficial enlarged masses and are easily accessible for fine needle aspiration. Cytology helps in categorizing lesions, thereby helping clinician in appropriate management. Materials and methods: Present study is one year retrospective and prospective study. The retrospective study materials were collected from archives. In prospective cases, patients demographic data were collected, examined and FNAC was done. The slides were evaluated and classified into non neoplastic, benign and malignant category. Descriptive statistical analysis was done. Results: 46 salivary gland lesions were evaluated. Male to female ratio is 1.6:1 and mean age is 38.8 years (+ 14.4). Non neoplastic lesions forms the majority accounting to 50%, followed by benign(41.3%) and least being malignant(8.7%). Conclusion:FNAC of salivary gland is cost effective, simple technique which plays a pivotal role in the diagnosis and management. However thorough examination and recognition of pitfalls of cytology are essential in correct diagnosis.*

INTRODUCTION

Salivary glands are exocrine organs responsible for production and secretion of saliva and consist of the parotid, submandibular, sublingual, and the minor glands that are numerous and widely distributed throughout the mouth and oropharynx.[1] Salivary glands neoplasms account for 2 to 6% of all head and neck tumours in adults.[2,3] Salivary gland lesions usually present as superficial enlarged masses and can be easily accessible for fine needle aspiration procedure.[3] Cytology helps in distinguishing salivary and non salivary lesions and also helps in differentiating non-neoplastic, benign and malignant lesions.[1,4] The characteristic cytological features of common salivary gland lesions are well described in literature. However, there also exist cytological pitfalls and overlapping features that make an accurate diagnosis difficult in few cases. Fine needle aspiration cytology is very important preoperative diagnostic tool, considering the lack of characteristic clinical and radiological features that may suggest particular diagnosis. Though management of most of the salivary gland lesions is surgical, preoperative diagnosis of benign and malignant assist the clinician in planning the extent of surgery.[5,6,7,8] Present study is undertaken to evaluatethe cytological features of salivary gland lesion and categorize them in to non-neoplastic, benign and malignant lesions. Histological correlation is done in available cases.

MATERIAL AND METHODS:

Present study is retrospective and prospective study, undertaken in tertiary care hospital over period of one year. Total of 46 salivary gland lesion cytology were included in the study. Non salivary gland lesions and non-availability of slides of previous cases were excluded from the study. The retrospective study materials were collected from archives. The slides were re-evaluated. In prospective cases, patients demographic data were collected, clinical examination was done. Fine needle aspiration was done using 22 gauge needle. The character of aspirate was noted. Two each slides were fixed in 95% alcohol and air dried. Hematoxylin and eosin and leishman staining were done. The slides were evaluated and classified into non neoplastic, benign and malignant category. Histological correlation was done wherever possible. Descriptive statistical analysis was done. Sensitivity and specificity cannot be evaluated because of limited histological correlation.

RESULTS

Out of 46 cases, 28(60.86%) cases were males and 18(39.14%) were females with male to female ratio is 1.6:1. Patient's age ranged from 6 to 68 years with mean age of 38.8 years (±14.4). Amongst 46 cases, 30(65%) lesions occurred in parotid gland, 11(24%) in submandibular region and 5(11%) in submental and lingual region. Distribution of lesions in to non-neoplastic, benign and malignant are listed in table1. Histopathological correlation was available in 12 cases, where 4 cases of chronic sialadenitis, 5 cases of pleomorphic adenoma and one case of warthin tumour on cytology were confirmed histologically. One each case of pleomorphic adenoma was turned out to be schwannoma and basal cell adenoma.

Table 1:Distribution of salivary gland lesions.

Categories	Distribution
Non neoplastic	23(50%)
Chronic sialadenitis	15
Retention cyst/ benign cyst	3
Acute on chronic sialadenitis	2
Adenomatoid hyperplasia	1
Granulomatous sialadenitis	1
Sialadenosis	1
Benign	19(41.3%)
Pleomorphic adenoma	13
Warthin tumour	3
Spindle cell neoplasm	2
Monomorphic adenoma	1
Malignant neoplasm	4(8.7%)
Mucoepidermoid carcinoma	2
Squamous cell carcinoma	1
Poorly differentiated carcinoma	1

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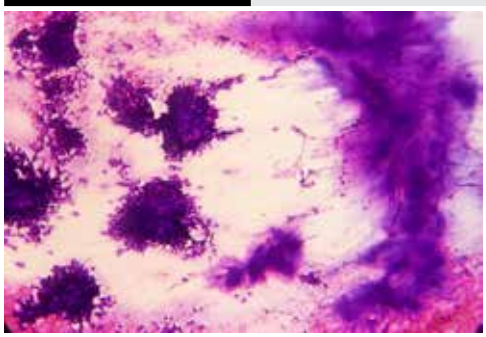

Figure1: Pleomorphic adenoma comprising stromal and epithelial component(H&E, LP)

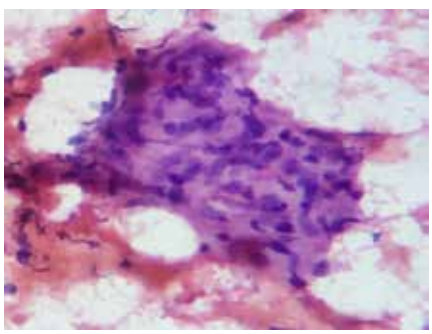

Figure 2: Granulomatous sialadenitis (H&E, LP)

DISCUSSION

Fine needle aspiration cytology of salivary gland is well accepted, rapid, simple, cost effective procedure. The purpose of FNAC is not to provide a definitive specific diagnosis and not substitute for histological diagnosis. It is used in conjunction with clinical and radiological findings to rapidly provide best possible initial assessment on which the therapeutic management is dependent.[3,4,5]

In present study, a total of 46 salivary gland lesions were evaluated. Age of the patients ranged from 6 to 68 years with mean age of 38.8 years. Males were most commonly affected than females. These demographic findings were in accordance with most of the previous studies.[3,4,5,9,10] Parotid is the most common affected salivary gland followed by submandibular and sublingual gland. This is in consonance with most of the studies.

The percentage of non-neoplastic lesions in our study is 50% which forms the majority. This is in accordance with previous studies, where non-neoplastic lesions form the majority ranging from 40 to60%.[1,11,12,13] In few studies non-neoplastic lesions was second most common lesion. Most common non neoplastic lesion was chronic sialadenitis followed by retention cyst. In present study, two cases had bilateral parotid swelling; one case was diagnosed as granulomatous sialadenitis and other as sialadenosis.

Pleomorphic adenoma was the most common benign salivary gland neoplasms in our study which is similar to most of the previous studies.[2,10,14,15] Diagnosis of pleomorphic adenoma is straight forward when there is good mixture of both stromal and epithelial component. Predominance of any of the component will result in varied diagnosis such as epithelial neoplasms, spindle cell neoplasm, monomorphic adenoma, myoepithelioma, benign cysts etc.[2,5,16] In present study two cases of pleomorphic adenoma was later proved to be schwannoma and basal cell adenoma histologically.A study done by Ameli F et al three cases of pleomorphic adenoma was misdiagnosed as adenoid cystic carcinoma, mucoepidermoid carcinoma and lymphoma.[2]In present study mucoepidermoid carcinoma is most common malignant tumour which is similar to previous studies.[2,8,9,11,13] Present study is limited by very low number of histological correlation hence sensitivity and specificity of salivary gland lesions couldn't be calculated.

CONCLUSION

Fine needle aspiration cytology of salivary gland is simple, minimally invasive technique which plays a pivotal role in the diagnosis and management. However thorough examination and recognition of pitfalls of cytology are essential in correct diagnosis, as there are common and rare tumours have cytologic overlapping features which can cause diagnostic confusion.

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