



## “STUDY OF COMPARISON OF CYTOMORPHOLOGY AND HISTOPATHOLOGY OF SALIVARY GLAND TUMOURS”

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### ABSTRACT

Salivary glands are exocrine organs that include both minor and major salivary glands; widely distributed throughout the mouth and oropharynx. Salivary glands neoplasms account for 6% of all head and neck tumors.<sup>1</sup> They are known for their complexity owing to the heterogeneity of the cells of origin; compounded by their ability to differentiate and modify into various morphological subtypes. Nevertheless the frequent overlap of microscopic features among various neoplasms pose significant diagnostic dilemma which sometimes may even not be resolved by immunohistochemical studies. FNAC slides of all the patients who presented to our hospital with salivary gland swelling over a period of 1 year from 1/7/2016 to 1/7/2017 were retrieved and reviewed. The available histopathology slides of individual cases will also be reviewed.

Cytological study was done based on adequacy, distribution, cellular features and background material. The histomorphological features like, predominant patterns, cell shape and size, nuclear shape, chromatin pattern, nucleoli, mitosis, cytoplasmic vacuolation, lymphoid aggregates and secondary changes were studied.

Finally, the cytological features were correlated with the histopathological findings. The statistical analysis was done by frequency, percentage, sensitivity, specificity, predictive values and Chi<sup>2</sup> test

### KEYWORDS :

#### INTRODUCTION

Salivary glands are exocrine organs that include both minor and major salivary glands; widely distributed throughout the mouth and oropharynx. Salivary glands neoplasms account for 6% of all head and neck tumors. They are known for their complexity owing to the heterogeneity of the cells of origin; compounded by their ability to differentiate and modify into various morphological subtypes. Nevertheless the frequent overlap of microscopic features among various neoplasms pose significant diagnostic dilemma which sometimes may even not be resolved by immunohistochemical studies. Over all this study is intended to know the accuracy of cytology compared with histopathology diagnosis of benign and malignant tumors. We had a total of 36 cases in whom pleomorphic adenoma was the commonest seen in 30.6 cases. We had two cases that were not correlated in both of them the FNA diagnosis was not possible either due to no opinion possible or it was a non diagnostic aspirate. The sensitivity of our FNA was 100% and the specificity was 0%. Positive Likelihood Ratio was 1 and the Positive Predictive Value 89.47%

#### AIMS AND OBJECTIVE :

- 1) To study the cytological and histomorphological findings of various salivary gland tumours.
- 2) To correlate the cytohistomorphological findings of the same.

#### MATERIALS & METHODS:

FNAC slides of all the patients who presented to our hospital with salivary gland swelling over a period of 1 year from 1/7/2016 to 1/7/2017 were retrieved and reviewed. The available histopathology slides of individual cases will also be reviewed.

Cytological study was done based on adequacy, distribution, cellular features and background material. The histomorphological features like, predominant patterns, cell shape and size, nuclear shape, chromatin pattern, nucleoli, mitosis, cytoplasmic vacuolation, lymphoid aggregates and secondary changes were studied.

Finally, the cytological features were correlated with the histopathological findings. The statistical analysis was done by frequency, percentage, sensitivity, specificity, predictive values and Chi<sup>2</sup> test

#### RESULTS AND OBSERVATIONS

A validation retrospective analysis study was done and three were

our observations. In the study we had 36 cases, 19 males and 14 females.

**Table 1: showing the site of the FNA**

site of fna		Frequency	Percent
Valid	Floor of mouth	1	2.8
	Hard palate	1	2.8
	Infra auricular swelling	1	2.8
	Intra parotid Lymphnode	1	2.8
	Paratracheal region	1	2.8
	Parotid gland	25	69.4
	Submandibular gland	6	16.7
Total		36	100.0

correlation		Frequency	Percent
Valid	no	2	5.6
	partial correlation	2	5.6
	yes	34	87.8
	Total	36	100.0

FNA DIAGNOSIS	FREQUENCY	PERCENT
ACINIC CELL CARCINOMA	2	5.6
ADENOID CYSTIC CARCINOMA	1	2.8
BASAL CELL ADENOMA	2	5.6
CELLULAR PLEOMORPHIC ADENOMA/MYOEPITHELIAL ADENOMA	1	2.8
CELLULAR PLEOMORPHIC ADENOMA/PLASMACYTOID MYOEPITHELIOMA	1	2.8
KERATINIZING SCC/HIGH GRADE MEC	1	2.8
MEC SUGGESTED HPE TO R/O PLEOMORPHIC ADENOMA	1	2.8
MUCOCELE/RETENTION CYST	1	2.8
MUCOEPIDERMOID CARCINOMA	1	2.8
NO ATYPIA/ MALIGNANCY	1	2.8
NO OPINION POSSIBLE	1	2.8
NON DIGNOSTIC ASPIRATE	1	2.8
PLEOMORPHIC ADENOMA	11	30.6

PLEOMORPHIC ADENOMA/BASAL CELL ADENOMA	1	2.8
PLEOMORPHIC ADENOMA/MYOEPITHELIOMA	1	2.8
PLEOMORPHIC ADENOMA/WARTHINS TUMOUR	1	2.8
POLYMORPHOUS LOW GRADE ADENO CA/ BASAL CELL ADENOMA	1	2.8
ROUND CELL TUMOR	1	2.8
SIALADENOSIS	1	2.8
WARTHINS TUMOR	5	13.9
TOTAL	36	100

We had a total of 36 cases in whom pleomorphic adenoma was the commonest seen in 30.6 cases. we had two cases that were not correlation in both of them the FNA diagnosis was not possible either due to no opinion possible or it was a non diagnostic aspirate. the sensitivity of our FNA was 100 % and the specificity was 0%. Positive Likelihood Ratio was 1 and the Positive Predictive Value 89.47%

## DISCUSSION

In the known history of Medicine, the oldest reference of salivary glands and more specifically of saliva, was in old Mesopotamia, in clay tablets, in 2,500 BC, at Akka Library, created by the Syrian king Assurbanipal.<sup>3</sup> The myriad of neoplastic process that evolve from these glands makes it much important to assess and analyse on timely basis. Clinical examination and imaging of salivary gland lesions often fail to distinguish benign from malignant etiology. However, FNAC helps to categorize these lesions into inflammatory, benign and malignant, and can also be used as a tool for preoperative diagnosis of neoplasms and substantiate suitable management. The diagnostic use of needle aspiration technique was first described in 1847 by Kun.<sup>4</sup>

The incidence of various salivary gland lesions have been timely updated in literature. According to study conducted by Thangam et al, Pleomorphic Adenoma was noted to be most common; accounting for 66.66% of all tumours and Warthin's tumour holding the second position, constituting 6.25% of all tumours.<sup>5</sup> In a study conducted by Anita Omhare et al the sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) of preoperative FNA cytology of salivary gland tumours were 88.2%, 97.1%, 88.2%, and 97.1%, respectively; however, overall diagnostic accuracy for all salivary gland lesions was 95.3%, indicating good results<sup>6</sup>

Christopher C. Griffith et al stated<sup>7</sup>, had a higher incidence of salivary gland neoplasms in females as compared to our study we had a male dominance. A total of 25 (8.5%) of 294 aspirate smears were categorized as nonneoplastic in our study 16 cases were benign.

Ritu Jain et al stated that of the 80 cases, majority (67.5%) involved the parotid gland. this is similar to our study.

In our study we had a 100 % sensitivity with a 89% PPV. other studies quote a wide-range of sensitivity (62-97.6%) and specificity (94.3-100%) of cytological diagnosis.<sup>8-11</sup>

## CONCLUSION

We concluded that FNAC is reliable in detecting the lesions of the salivary gland

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