

ROLE OF FNAC IN DETECTING SALIVARY GLAND TUMOR (A REVIEW STUDY)

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Abstract

Fine needle aspiration cytology is a safe, accurate and minimally invasive diagnostic tool yet economically effective. This procedure will avoid incisional biopsy, no complication such as local inflammation, hematoma, infection or facial nerve damage was observed, and should be considered as first line of investigation in salivary gland lesion. FNAC helps to distinguish salivary gland lesion as inflammatory, benign and malignant hence allowing proper planning and management.

This paper considered with some discussion about its sensitivity / specificity. However, it should be correlated with clinical / histopathological confirmation.

Keywords: salivary gland, FNAC, parotid gland, minimally invasive procedure.

Introduction

It is very common that salivary gland tumor occurs in the parotid gland, mostly cases are noncancerous but sometimes parotid tumors can be cancerous ranging from 15-32%. The most common type of salivary tumors is pleomorphic, warthin tumor is also common in most of the cases.

Mucoepidermoid carcinoma is the most frequently occurring malignancy of the salivary gland. However geographical difference exists in this disease. A low percentage of all salivary tumors occur in the submandibular gland but frequency of malignancy in this gland is almost double that of parotid gland. Tumors of sublingual gland are rare but they are mostly cancerous. Fine needle aspiration cytology should be considered as first step in case of salivary gland lesion as this process is simple and carries minimal complications and is also inexpensive.

Aim- To rule out the Importance of FNAC in diagnosis of salivary gland malignancies.

Objective- To review studies on Fine needle aspiration and analyze its importance in detecting salivary gland malignancies.

Material and Methods

This review study has comprehensive data from the studies, the results of which were published in indexed journals. The mentioned data was studied and analyzed to access the effectiveness of FNAC in diagnosing Salivary gland malignancies. The tissue / cells within the lumen of the needle is obtained and smear is prepared, stained and studied. Gross and microscopic examination were performed, also H&E stain was done. FNAC results were classified into the non-cancerous and cancerous lesions. The corresponding diagnosis were reviewed and analyzed.

Observation

Various authors in separate timeline have shared their observations on results on FNAC on different sample sizes, showing high accuracy level of specificity (89-100%) of FNAC and high accuracy level of sensitivity (81-97%) of FNAC with different sample sizes . There have been many other observations by other authors in different years showing high accuracy level of the result of FNAC.

Results

The results clearly depict high level of specificity & sensitivity of FNAC. In an accuracy range of 80-85% of various studies of FNAC holds specificity of 80% in one case and sensitivity of 84.61% and 80.8% in 2 cases each, in an accuracy range of 95-100% of 9 studies. FNAC holds specificity of 95.1%, 97.7%, 96.42% in 3 cases and 100 % in 3 cases respectively and sensitivity of 100%,97.7%% and 97.6% in 3 cases respectively.

Serial number	Year	Author	Sample size	Result FNAC	
				specificity	Sensitivity
1	2011	Choudhury A et al.	50	80%	92.5%
2	2012	Nanda K et al.	127	91.66%	84.61%
3	2013	Inanch H et al.	115	95.1%	80.8%
4	2014	S koirala et al .	36	89.28%	100%
5	2015	Tessy Pj et al.	130	97.7%	97.7%
6	2016	Shetty A et al	114	Diagnostic accuracy	97.6 %
7	2017	Kakoty et al	50	96.42%	90.91%
8	2018	Shalley et al	70	100%	89.5%
9	2019	Mohan S . P . et al	90	100%	90.91%
10	2021	Alghamdi G et al	37	100%	90.3%

Discussion

FNAC must be used as a process to detect salivary gland malignancy as the major number of cases diagnosed By FNAC had 80 -98 percent Specificity, even the results of FNAC was seen to be 100% specificity. The male predominance observed in most of the studies, maximum incidence of salivary gland lesions in men was observed in late 40s and 50s, while it was in late 30s and 40s in women. The cytological diagnosis with definitive histopathological correlation were available in 39 cases, however the cytological diagnosis alone for all the 50 cases had a high specificity and sensitivity article (2017).

Pleomorphic adenoma was the most common neoplasm encountered in most of the studies. Majority of the cases turned out to be correct on TMU J Dent Vol.9; Issue 4; October-December 2022

histopathology. Classify the salivary gland lesions in to non-neoplastic, benign and malignant neoplasm may guide the clinician to make correct therapeutic decisions as to which patient requires further investigations, medical treatment or excision.

Conclusion

It is a highly reliable technique for pre-operative diagnosis of salivary gland tumor. However, there are still few cases that may be inaccurately diagnosed. It is quick, convenient and accurate method of diagnosis and should be considered as one of the first line of investigation in the evaluation of salivary gland lesions also it has less chair side time so reliable technique for the patient who are not willing for invasive procedure or low socio economic status .it has a high degree of

diagnostic yield and sensitivity and thereby obviating the need for open biopsy, which is invasive procedure and can cause discomfort to the patient. However, the final diagnosis, histopathological examination is still necessary for the reconfirmation in the present era to conclude proper diagnosis.

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