



Correlation Of FNAC With Histopathology In Various Lesions Of Thyroid

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Abstract

Background- FNAC is considered the gold standard diagnostic test for diagnosis of thyroid nodules. FNAC is a cost effective procedure that provides specific diagnosis rapidly with minimal complications. Based on cytology findings patients can be followed in cases of benign diagnosis and subjected to surgery in cases of malignant diagnosis, thereby decreasing the rate of unnecessary surgery. Purpose of this study was to correlate FNAC findings with histopathology of excised specimen.

Methodology- The present study is a prospective study and was conducted on 30 patients from November 2020 to October 2021. Only those thyroid swelling cases which underwent FNAC and Surgery were included in this study. After Histopathological study they were compared with preoperative FNAC report.

Results- Among 30 cases that underwent surgery and subsequent histopathological study, 28 cases showed positive correlation between FNAC and histopathology result. Benign lesions were most common among the thyroid swellings (83%) followed by malignant lesions (17%). The diagnostic accuracy of FNAC for thyroid swellings in this series was 93.3%.

Conclusion- FNAC is a simple, safe and cost effective modality in investigation for diagnosis of disease with high accuracy and specificity. It is recommended as the first line for the diagnosis of solitary thyroid nodule.

Keywords: FNAC, Thyroid, Cytology, Histopathology

Introduction

Thyroid swellings are common entities, frequently discovered in clinical practice, either during physical examination, but also incidentally, during various imaging procedures. They are clinically important primarily due to their malignant potential. For this reason the initial evaluation should always include a history and physical examination focusing on features suggestive of malignancy.

To detect the thyroid lesions various tests like ultrasound, image guided scan, thyroid nuclear scan, fine needle aspiration cytology (FNAC) and many more are available. The final confirmatory diagnosis is done by Histopathological Examination (HPE).

Fine needle aspiration cytology is considered as the standard screening test for the diagnosis of thyroid nodules. It is a cost effective procedure that provides specific diagnosis rapidly with minimal complications. Based on the cytology findings patients can be followed in cases of benign diagnosis, thereby decreasing the rate of unnecessary surgery.

So in this study we are assessing different types of thyroid swelling by FNAC and studying the correlation between FNAC and histopathology of those thyroid swelling.

Material And Methods

Study Design

The present study was a hospital based observational study conducted at Mahatma Gandhi Medical

College and Hospital, Jaipur, India over a period of twelve months, from November 2020 to October 2021. A written and informed consent was taken from each study participant before enrolling them in the present study.

Sample Size:-

In the present study 30 patients from November 2020 to October 2021 with thyroid lesions were enrolled

Study Participants-

All patients with thyroid lesions who have undergone fine needle aspiration cytology and excisional biopsy of thyroid, have been included in the study.

Sample Collection-

After histopathological study they were compared with preoperative FNAC report.

Inclusion Criteria:-

Patients presented with Thyroid swelling.

Patient willing to participate.

Exclusion Criteria:-

Patients who will undergo only FNAC or only biopsy.

Neck swelling other than Thyroid swelling

Result

Among 30 cases of thyroid swellings that underwent surgery and subsequent histopathological study, 2 cases showed positive correlation between FNAC and histopathology result.

Benign lesions were most common among the thyroid swellings (83%) followed by malignant lesions (17%).

As observe during study thyroid swellings are more common in females than males. The diagnostic accuracy of FNAC for thyroid swellings in this series was 93.3%

Discussion

Fine needle aspiration cytology (FNAC) is the initial investigation in the diagnosis of thyroid swelling. The technique is safe, simple and quick, with low complication rate. Several other test such as high resolution ultrasonography and FNAC have been used for evaluation of thyroid swelling before proceeding to thyroid surgery. Studies have

demonstrated that among all the diagnostic modalities, FNAC is the most accurate and cost effective test for rapid diagnosis of thyroid swelling . In this discussion accuracy of FNAC in the diagnosis of thyroid swelling is compared to concluded results with some of the available international studies. Results of this study are almost similar to those of the international studies.³

The diagnostic accuracy of FNAC in the study presented by Khageswar et al is 96.05%¹ ,by Parampreet Singh et al is 98.48%.², by Dr. Md. Alamgir Hossain Sikder et al is 90%³.

The diagnostic accuracy in the present study is slightly low (93.3%) , probably due to less number of cases as compared to the other studies.

Our results confirm that FNAC screening is quite accurate in thyroid swelling diagnosis.

Conclusion

FNAC is a simple, safe and cost effective modality in investigation for diagnosis of disease with high accuracy and specificity.

It is recommended as the first line for the diagnosis of solitary thyroid nodule. The suspicious indeterminate results prove to be an area of uncertainty.

The accuracy of investigation for diagnosis of disease can be increased by ultrasono guided FNAC.

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Table 1 Incidence of types of thyroid swelling according to FNAC finding

Types of thyroid swelling	No. of cases	%
Colloid goiter	13	43.3
Colloid goiter with cystic degeneration	4	13.3
Follicular adenoma	2	6.8
Papillary Ca	5	16.6
Thyroglossal cyst	6	20

Total	30	100
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Table 2 Sex incidence of thyroid swellings

Types of thyroid swelling	Total no. of cases	Male	%	Female	%
Colloid goiter	13	4	30.7	9	69.3
Colloid goiter with cystic degeneration	4	1	25	3	75
Follicular adenoma	2	1	50	1	50
Papillary Ca	5	2	40	3	60
Thyroglossal cyst	6	2	33.3	4	66.6
TOTAL	30	10		20	

Table 3 Positive correlation of result of FNAC with result of histopathology of different thyroid swelling

Types of thyroid swelling	No. of cases	Correlation with result of histopathology		Diagnostic accuracy (%)	Histopathology finding in cases of false cytodiagnosis
		Correct cytological diagnosis	False cytodiagnosis		
Colloid goiter	13	12	1	92.3	Papillary Ca
Colloid goiter with cystic degeneration	4	4	0	100	
Follicular neoplasm	2	1	1	50	Nodular goitre
Papillary Ca	5	5	0	100	
Thyroglossal cyst	6	6	0	100	
Total	30	28	2	93.3	

Fig 1 H and E- Follicular adenoma

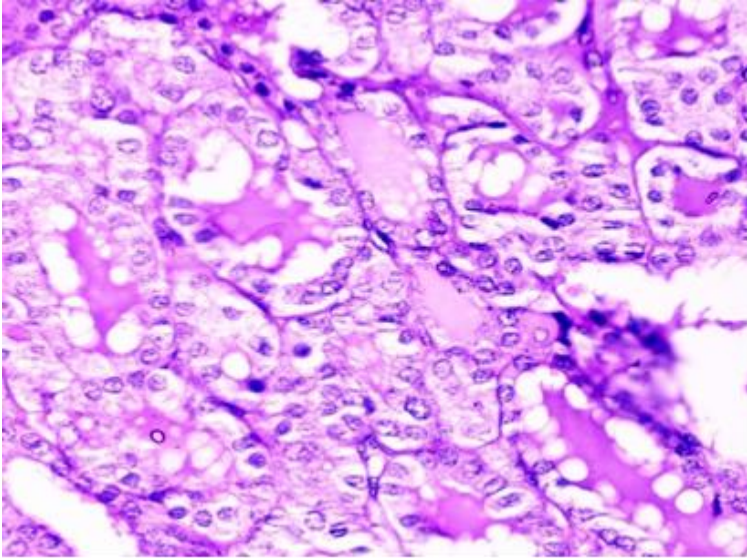


Fig 2 H and E- Colloid goitre

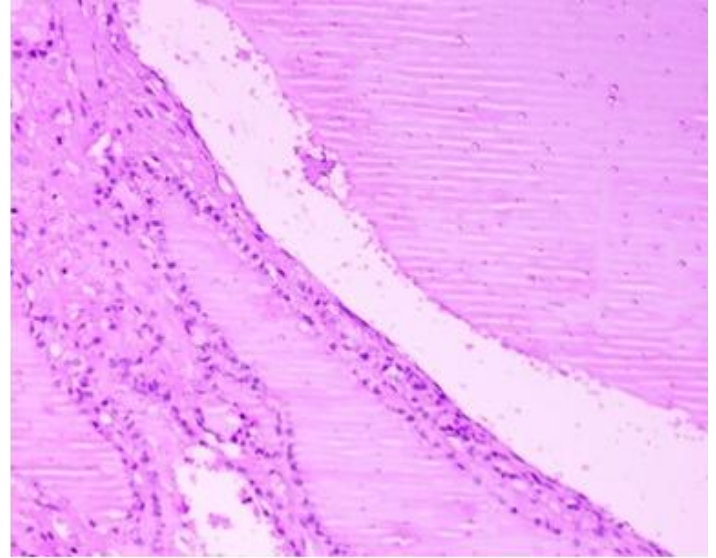


Fig 3 FNAC- Follicular adenoma

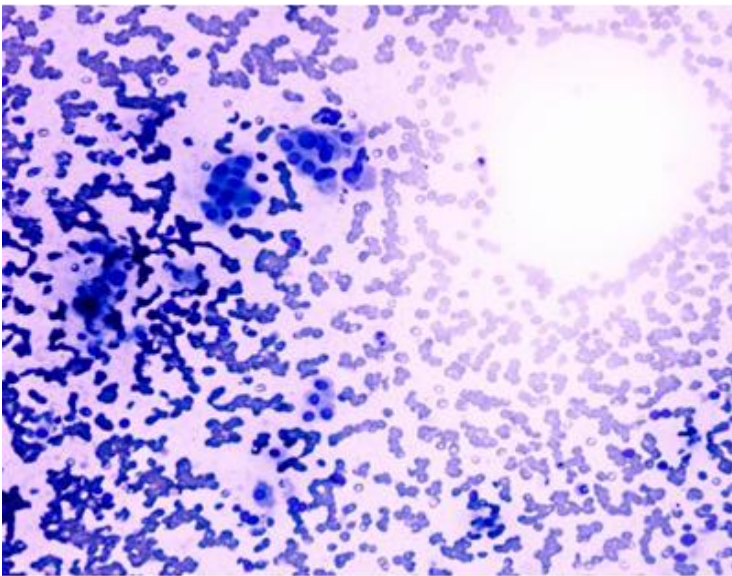


Fig 4 FNAC- Colloid goitre

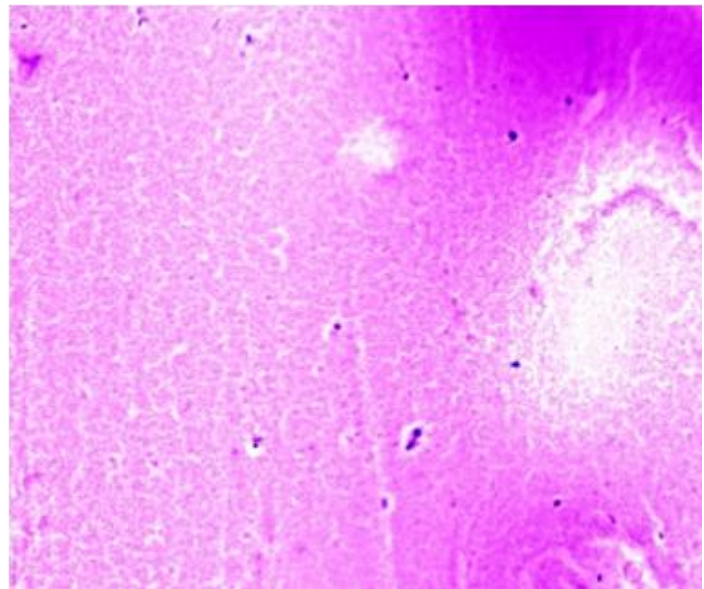


Fig 5 H and E- Papillary carcinoma

