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Dr. Pruthvi Patel
Third year Resident, Department of Pathology, Geetanjali Medical College and Hospital, Udaipur, Rajasthan India

Dr. Dhrumil Patel
M.S Orthopedic, B.J Medical College, Ahemdabad, India

Corresponding Author:
Dr. Pruthvi Patel
Third year Resident, Department of Pathology, Geetanjali Medical College and Hospital, Udaipur, Rajasthan India

To study the impotence of the correlation between fine needle aspiration cytology (FNAC) and histopathological diagnosis of thyroid lesion

Dr. Pruthvi Patel and Dr. Dhrumil Patel

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Abstract
Introduction: Fine needle aspiration cytology (FNAC)is popular diagnostic as well as therapeutic test in thyroid pathology. FNAC has become the effective method in the Evaluation of thyroid lesion, being the safe, fast, reliable, and minimally invasive, cost Effective and reaching high sensitivity and Specificity.
Aims and Objectives: The Aim of this study is to establish a cytohistological correlation in thyroid lesion and to find out can FNA obviate the need for histopathological diagnosis of thyroid lesion.
Materials and Methods: The retrospective study was conducted in the department of Pathology of Geetanjali medical college and hospital, Udaipur, during the period between June 2020 to October 2021. Data for study is obtained from departmental records and tissue specimens received in the histopathology and cytology sections section in the specified period of study.
Results: In the present study, 225 cases of Thyroidectomy were received at the Histopathology Section of Pathology Department, Geetanjali medical college and hospital, Udaipur, during the period Between June 2020 to October 2021. Out of These, 190 were non-neoplastic and 35 were Neoplastic. Among 35 neoplastic lesions, 28 Were benign and 7 were malignant,120 cases Were correlated with FNAC findings. In correlation study, FNAC had 100% Accuracy for malignant lesions.

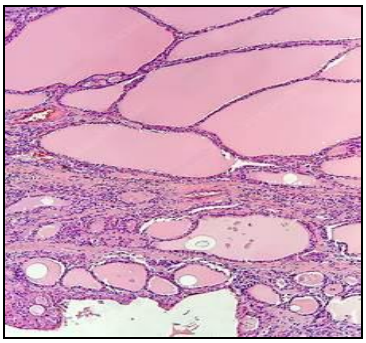
Keywords: FNAC, histopathology, thyroid lesions

Introduction
Fine needle aspiration cytology (FNAC) is popular diagnostic as well as therapeutic test in thyroid pathology. Fine needle aspiration cytology (FNAC) forms part of the routine workup for suspicious thyroid lesion**.** Fine needle aspiration cytology (FNAC) has become the effective method in the Evaluation of thyroid nodules, being the fast, reliable, safe and minimally invasive, cost Effective and reaching high sensitivity and specificity. FNAC has allowed a minimally the surgical treatment of the Patients with the thyroid lesion.

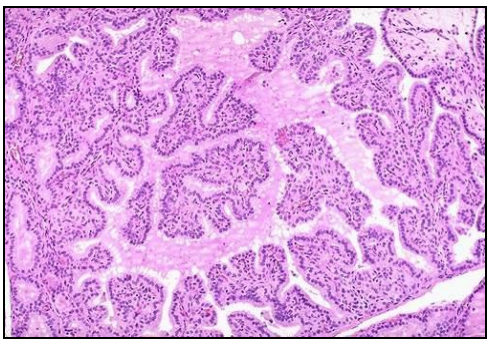
Aims and Objectives
The Aim of this study is to establish a cytohistological correlation in thyroid lesion and to find out can FNA obviate the need for histopathological diagnosis of thyroid lesion.

Material and Methods
The present retrospective study was conducted among 225 patients with thyroid lesion in the department of Pathology of Geetanjali medical college and hospital, Udaipur, during the period between June 2020 to October 2021. Data for study is obtained from departmental records and tissue specimens received in the histopathology and cytology sections section in the specified period of study. A total of 120 patents with thyroid swelling were aspirated during a period June 2020 to October 2021 using 23-gauge needle and 5 ml syringe. The slide were both air dried and wet fixed for May-Grunwald Giemsa and Papanicolaou stains, respectively. All the specimens were fixed in 10% formalin, and detail gross examination was done.4-10 tissue bits were selected from representative areas and all the bits were processed and stained with H and E stain. Out of 225 cases, cytological findings of 120 cases were available. Cytological and histopathological correlation of these 120 cases was performed. Patients in whom either of one HPE /FNAC was not available were excluded.

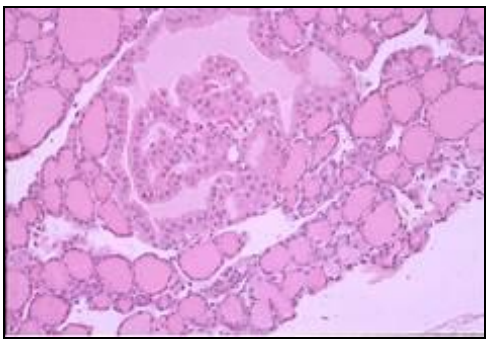
Histology Immage



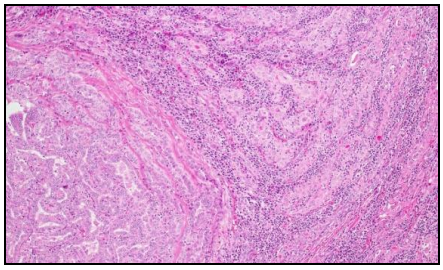
Colloid goiter



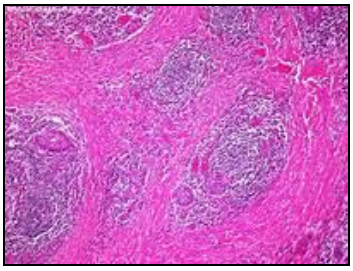
Diffuse toxic goiter



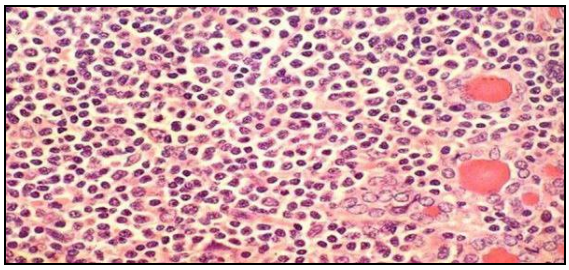
Adenomatous (hyperplastic goiter)



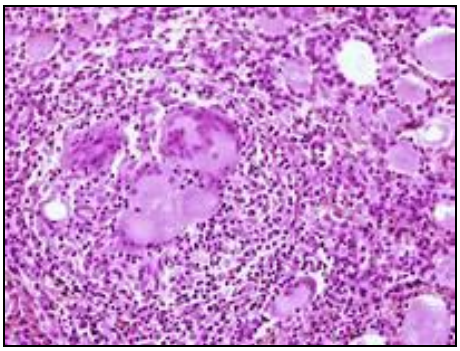
Hashimoto thyroiditis



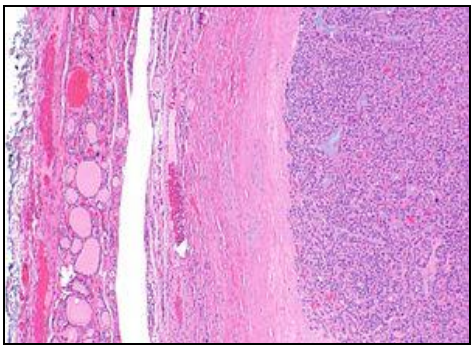
Follicular variant of Hashimoto thyroiditis



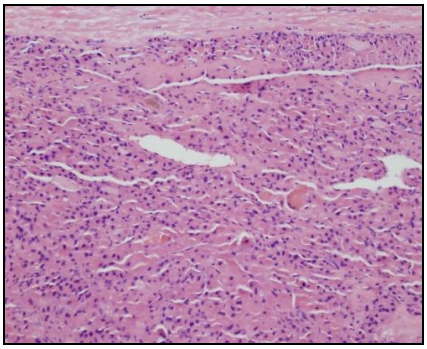
Lymphocytic thyroiditis



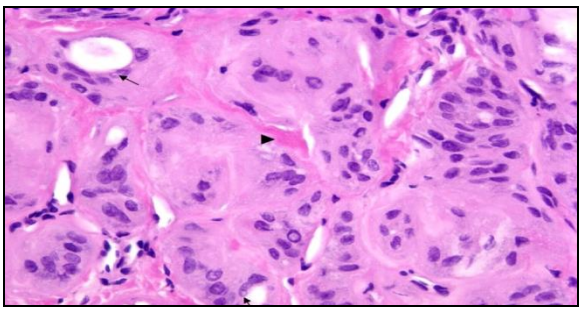
Granulomatous thyroidits



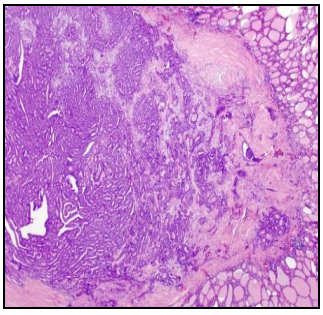
Follicular Adenoma



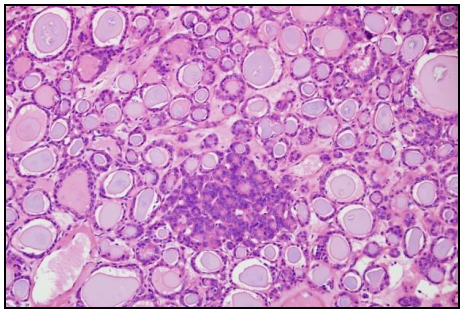
Hurthle cell adenoma



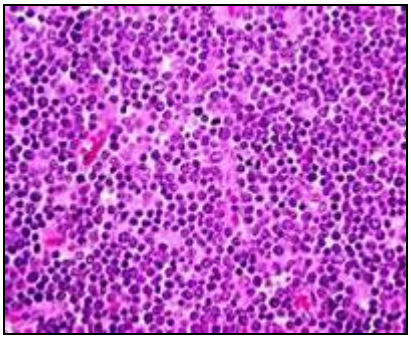
Hyalinizing Trabecular adenoma



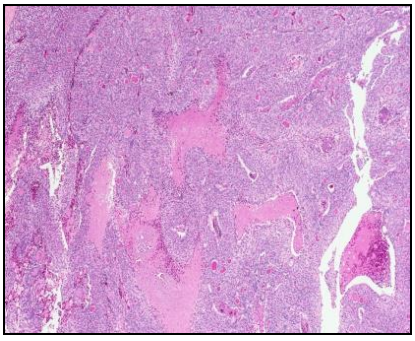
Papillary thyroid carcinoma



Follicular variant of papillary thyroid carcinoma

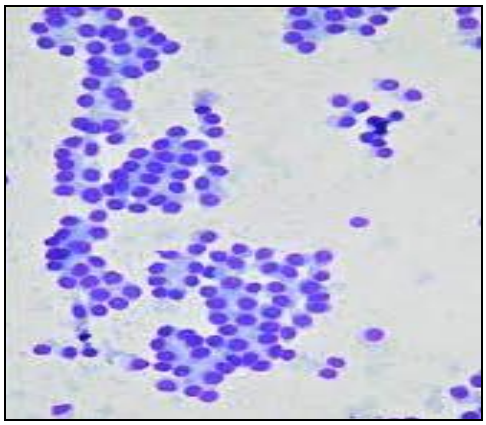


Non-Hodgkin lymphoma

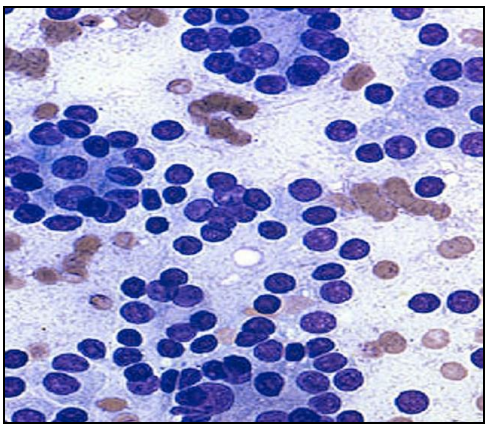


poorly differentiated thyroid carcinoma

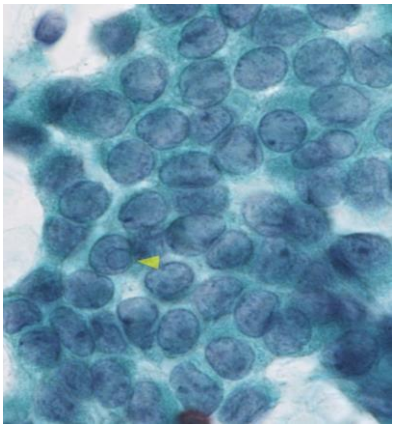
Cytological Image



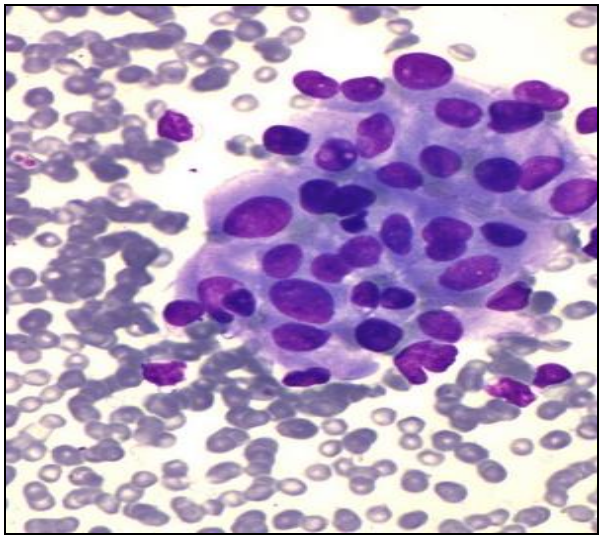
Benign follicular nodule



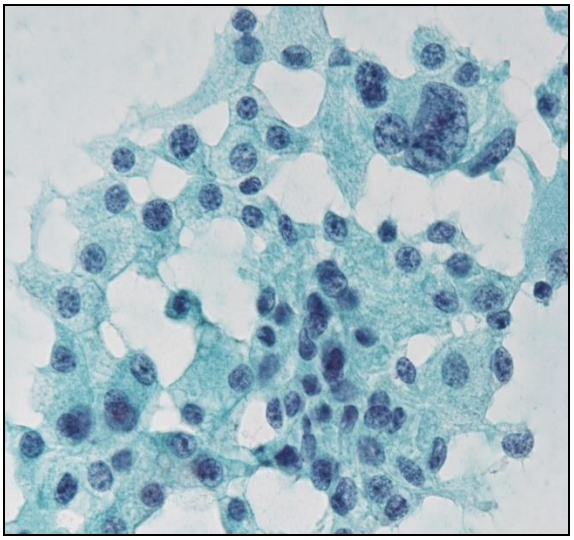
Follicular neoplasm



Papillary neoplasum



Hurthle cell neoplasum



Medullary neoplasm

Observations and Result

In the present study, 225 cases of thyroidectomy were received at the histopathology section of pathology department, Geetanjali medical college and hospital, Udaipur, during the period between June 2020 to October 2021. Out of these, 190 were non-neoplastic and 35 were neoplastic. Among 35 neoplastic lesions, 28 were benign and 7 were malignant.

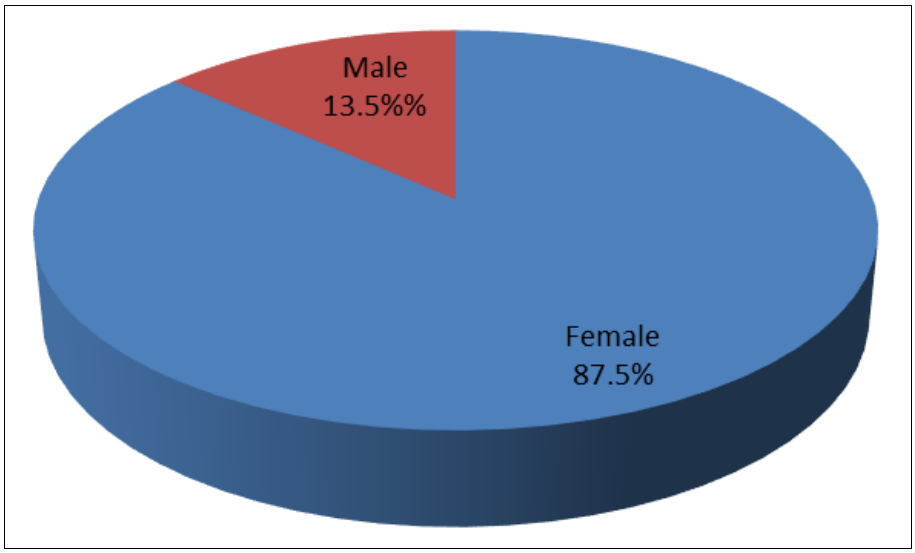


Fig 1: Distribution of Lesions according to Gender

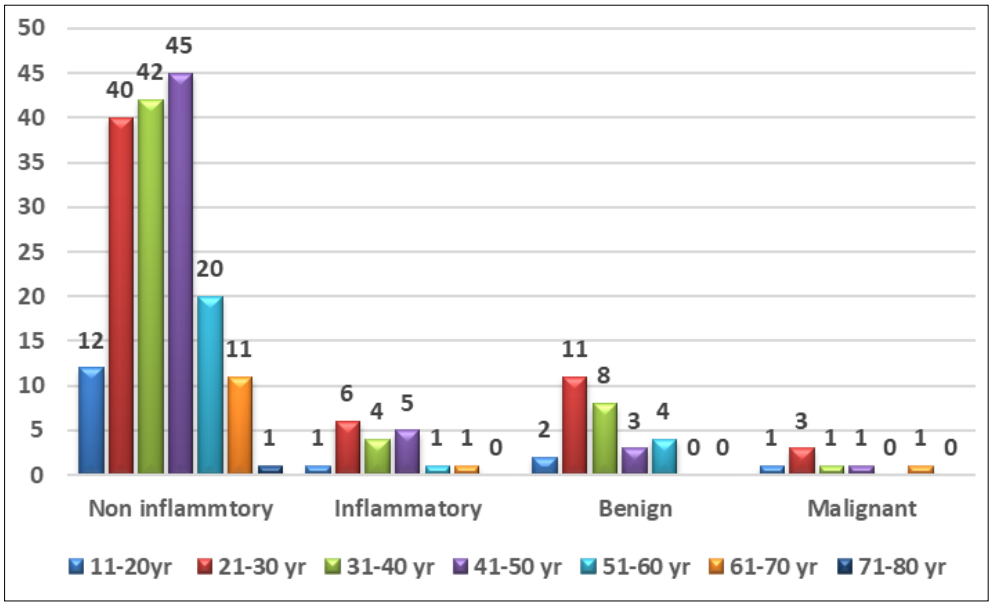


Fig 2: Distribution of cases According to age

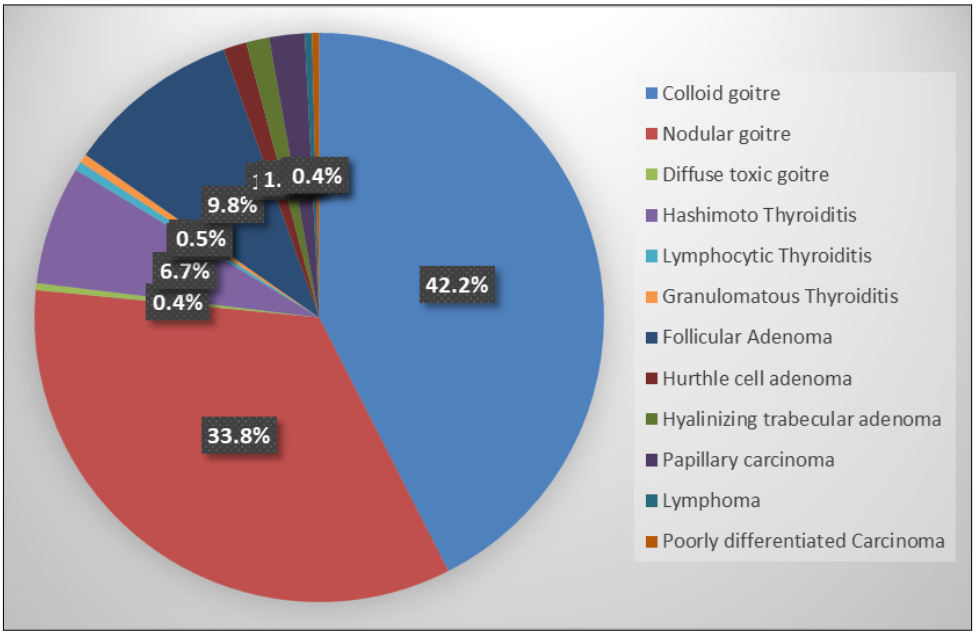


Fig 3: Histodiagnosis of Thyroid gland lesions

Table 1: Correlation between histodiagnosis and cytodiagnosis of thyroid lesions

		Diagnosis	No of cases of histodiagnosis	No of cases of cytodiagnosis	Correlation
Non-neoplastic lesions	Non-inflammatory (hyperplasia)	Colloid and nodular goiter	93	113	82.3
		Diffuse goiter	1	1	100
	Inflammatory	Hashimoto thyroiditis	6	3	50
		Lymphocytic thyroiditis	1	0	0
		Granulomatous thyroidits	1	0	0
Neoplastic lesions		Follicular neoplasm	10	3	30
		Hyalinizing trabecuar Adenoma	3	0	0
		Hurthle cell adenoma	2	0	0
		Papillary carcinoma	3	0	0
Total			120	120	

Discussion

Diseases of thyroid are of great importance because they are most amenable to medical or surgical management. Single nodules are about four times more common in women than in men. In fact benign lesions out number thyroid carcinomas by a ratio of nearly 10:1. Overall, the incidence of thyroid malignancy is Low, forming 0.5- 1.0% of all cancers. In Present study, the age of patients ranged from 16-72 years and maximum number cases were seen in age group of 21-40 years. Out of 225 Cases, only 34 (15.5%) occurred in males and remaining 190 (84.4%) cases were in female. The M:F ratio is 1:5.4

In the present study, the most common non-Inflammatory thyroid lesion was colloid goiter follicular adenoma was the most common benign neoplastic thyroid lesion and papillary thyroid carcinoma (PTC) the most common malignancy. After exclusion of the follicular Variants of other tumors, Follicular carcinoma (FC) becomes relatively a rare tumor, it Accounts for 10-15% of clinically evident Thyroid malignancy. Medullary thyroid Carcinoma (MTC) comprises 5-10% of all Thyroid malignancies.

Conclusion

The study comprised of 225 cases of thyroid Lesions. The surgical specimens were then evaluated histo-pathologically and 120 cases were correlated with FNAC findings. Based on the study, following conclusions were drawn.

- The age group of patients ranged from 16-72 years, with a mean age of 36.2 years. M:F ratio in the study was 1:5.4.
- We encountered 190 non-neoplastic masses and 35 neoplastic masses. Among 35 neoplastic lesions, 28 were benign and 7 were malignant.
- The most common type of inflammatory lesion was Hashimoto thyroiditis (15 cases 83.3% of total inflammatory lesion cases.
- Incidence rate of non-inflammatory lesions was 76.4%. The most common histopathological subtype of hyperplastic lesion was colloid goiter. (95 cases, 55.2%of the total hyperplastic lesion)
- Incidence rate of benign lesion was 12.4% and of malignant was 7%.
- In correlation study, FNAC had 100% accuracy for malignant lesions.

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