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Role of Fnac in diagnosis of thyroid lesions

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Abstract
Aims and Objectives: The aim of this study is to determine the role of FNAC in diagnosing thyroid lesions with the use of Bethesda system.
Materials and Methods: A total of 130 FNAC cases of thyroid lesions were studied over a period of 1 year from June 2017 to June 2018.
Results: Bethesda system was used to classify the thyroid lesions, out of which 4.6% constituted the category Non diagnostic, 81.4% constituted the category Benign, 4% constituted the category Follicular neoplasm, 1.53% constituted the category Suspicious of Malignancy, 9.2% constituted the category Malignant and there were nil cases in the category Atypia of Undetermined significance.
Conclusion: FNAC serves as a preliminary investigation in the diagnosis of thyroid lesions and application of Bethesda system helps in precise cytological diagnosis. FNAC serves as a safer, inexpensive and as a first line of investigation in diagnosis of thyroid lesions though after having understood its limitations.

Keywords: FNAC, thyroid lesions, Bethesda system

Introduction
Thyroid lesions are one of the most common lesions that we come across in the day to day practice. FNAC serves as a simple, safe, cost effective and first line investigation in diagnosis of thyroid lesions [1]. It serves both therapeutic and diagnostic role in thyroid lesions. With the combined role of ultrasound and thyroid function tests fnac serves as the most specific and widely used investigation [2, 3]. To overcome the confusion of multiplicity of categories The Bethesda System for Reporting Throid Cytopathology was introduced in the year 2007 which included unsatisfactory/nondiagnostic (ND), benign, atypical follicular lesions of undetermined significance (AFLUS), suspicious of follicular neoplasm (SFN), suspicious for malignancy (SM), and malignant [4, 5].

Aims and Objectives
To analyse the data of thyroid lesions with the help of Bethesda system and to study the role of fnac in diagnosis of thyroid lesions.

Materials and Methods
A total of 130 cases of FNAC on thyroid lesions were studied over a period of one year from june 2017 to june 2018.Fnac was performed by pathologist and the slides were fixed in alcohol and stained by H and E and Pap staining methods. All the cases were categorised based on the Bethesda System for Reporting Thyroid Cytopathology.

Inclusion and Exclusion Criteria
All the patients of thyroid lesions of any age and gender were included in the study. Cases of Ultrasound guided FNAC were excluded from the study.

Results
A total of 130 FNAC'S were studied from the year June 2017 to June 2018. Out of 130 patients, 10.77% (n=14) were males and 89.23 % (n=116) were females with females being the most commonly affected. Out of 130 cases 51.5% of the cases (n=67) presented as solitary nodules, 25.38% of the cases (n=33) presented as nodular swelling and 23.07% of

the cases (n=30) presented as diffuse swelling.

According to the Bethesda system of reporting, 4.6% (n=6) were diagnosed as Nondiagnostic, 81.4% (n=106) were diagnosed as benign, 3.07% (n=4) of the cases were diagnosed as Follicular neoplasm, 1.53% (n=2) of the cases were diagnosed as Suspicious for malignancy and 9.2% (n=12) were diagnosed as malignant.

Table 1: FNAC Results

Bethesda category	Cytological diagnosis	Number	Percentage
Non diagnostic	Only colloid	6	4.6%
Benign	Nodular goitre	19	14.6%
	Adenomatoid goitre	4	3%
	Colloid nodule	45	34.6%
	Hashimotos thyroiditis	35	26.9%
	Subacute thyroiditis	3	2.3%
Atypia of Undetermined significance	0	0	0%
Follicular neoplasm	Follicular neoplasm	3	2.3%
	Hurthle cell neoplasm	1	0.76%
Suspicious for malignancy	Suspicious for malignancy	2	1.53%
Malignant	Papillary carcinoma	11	8.46%
	Medullary carcinoma	1	0.7%

In the present study 13.75% of the cases constituted neoplastic lesions and 86% of the cases constituted non neoplastic lesions. Out of the benign thyroid lesions, 14.6% were diagnosed as nodular goitre, 3% of them were diagnosed as Adenomatoid goitre, 34.6% of the cases were of Hashimotos thyroiditis.3.07% of the cases were of follicular neoplasm .1.53% of the cases were of Suspicious for malignany. Out of malignant lesions 8.46% of the cases were of papillary carcinoma and 0.7% of the cases were of medullary carcinoma of thyroid.

Discussion

The present study showed that the females were more commonly affected than the males which were similar to studies done chowdari and Padgala *et al*. Majority of the lesions were benign with solitary nodules being the most common. Colloid nodules were most common lesions constituting 34.6% of the cases followed by hashimotos throiditis with 26.9%, Nodular goitre constituting 14.6% of the cases, adenomatoid goitre constituting 3% of the cases and subacute thyroiditis constituting 2.3% of the cases. Amongst the malignant cases papillary carcinoma was the most common constituting 8.46% of the cases [6, 7, 8].

Conclusion

Present study emphasises the role of fnac in diagnosis of thyroid lesions as it serves as a more specific nvestigation along with the application of Bethesda system in detecting throid malignancies and there by helping in the prompt management of cases. Fnac serves as a safer, inexpensive and as a first line of investigation in diagnosis of thyroid lesions. The present study recommends FNAC as a preliminary investigation which helps in the identification of malignant and potential malignant cases and helps in early detection of malignancies. Also, application of Bethesda system helps in avoiding unnecessary surgeries for benign thyroid lesions.

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