



**CORRELATION OF FINE NEEDLE ASPIRATION CYTOLOGY WITH
HISTOPATHOLOGY IN THYROID LESIONS**

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ABSTRACT

Introduction: The thyroid gland is the largest of all endocrine gland. Fine Needle Aspiration Cytology (FNAC) proves as an important investigation for proper identification and management of wide spectrum of thyroid lesions. The aim of the present study is to determine the accuracy of FNAC in detection of thyroid lesions at our institute. **Objectives:** The present study aims to classify various cytomorphological lesions of FNAC thyroid and correlate with histopathological findings. **Material & Methods:** This retrospective study was conducted from May 2015 – April 2016 in Pathology department of SBMCH, Chennai. Aspiration was taken after detailed clinical history, physical examination and thyroid function test, USG. Various lesions diagnosed by FNAC were correlated with histopathological findings wherever applicable. **Results:** Of 92 cases, 88 cases were female and 4 cases were male. Peak incidence was in the fourth decade and median age was 38 years. By Fine Needle Aspiration Cytology, of the 92cases, 90 cases(97.8%) were benign and 2 cases(2.17%) were malignant. Incidence of various thyroid lesions according to Fine Needle Aspiration cytology were Hashimoto thyroiditis 25 (27.1%) nodular colloid goiter with cystic changes 21(22.8%), colloid goiter 43 (46.7%) thyroiditis 3(3.2%). Of the 92 cases, 23 cases were sent for histopathological study, 22 cases correlated with FNAC finding and 1 case diagnosed as nodular colloid goiter on FNAC turned out as papillary carcinoma thyroid on histopathology. **Conclusions:** FNAC is a safe, simple, highly accurate, economical and universally accepted modality for evaluation of thyroid lesions. FNAC helps in avoiding unwanted surgeries in patients diagnosed to have a benign pathology based on cytology.

KEYWORDS: Thyroid, FNAC, nodules.

INTRODUCTION

Fine needle aspiration cytology (FNAC) of the thyroid has been increasingly utilized for the investigation of thyroid lesions.^[1] Thyroid nodules are a common clinical entity found among the adult general population. Simplicity, diagnostic accuracy and most of all cost effectiveness have given FNA the first line diagnostic test in the preoperative evaluation of thyroid lesions. FNA has been shown to be able to categorize many benign and malignant lesions and thereby guide therapeutic protocols. The routine use of FNAC has reduced the number of unnecessary surgical procedures for thyroid nodules.

MATERIALS AND METHODS

This is a retrospective study conducted from May 2015 – April 2016 in patients who attended the department of ENT and General Surgery. Detailed clinical history, TFT and USG was done, followed by FNAC. Total 92 cases of thyroid lesion aspirate followed by histopathological correlation. The FNAC was performed using a 21-23 gauge needle attached to a 5 ml disposable syringe. Aspirates were smeared on clean slides and stained by H

& E (Hematoxylin and Eosin). Various lesions diagnosed by FNAC were correlated with histopathological findings wherever applicable. We compared findings of FNAC and histopathology and calculate the sensitivity, specificity and diagnostic accuracy of FNAC for diagnosing neoplastic and non-neoplastic lesions.

DISCUSSION

FNAC is regarded as the gold standard initial investigation in the diagnosis of thyroid swellings.^[2] Thyroid enlargement is a common occurrence in most regions of the world. FNAC is a safe, simple and inexpensive technique that has emerged as a valuable and popular adjunct in the diagnosis and management of various thyroid lesions.^[3,9] FNAC forms a valued assistant to the preoperative examination in the detection of thyroid nodules and in majority of the cases, it can differentiate neoplastic from nonneoplastic lesions.^[4] The routine use of FNAC in the assessment of thyroid nodules has reduced the number of patients subjected to thyroidectomy for benign diseases of the thyroid.^[5] Solitary thyroid nodules were 4–9 times more common in females as compared to males.^[6,7] FNAC has an

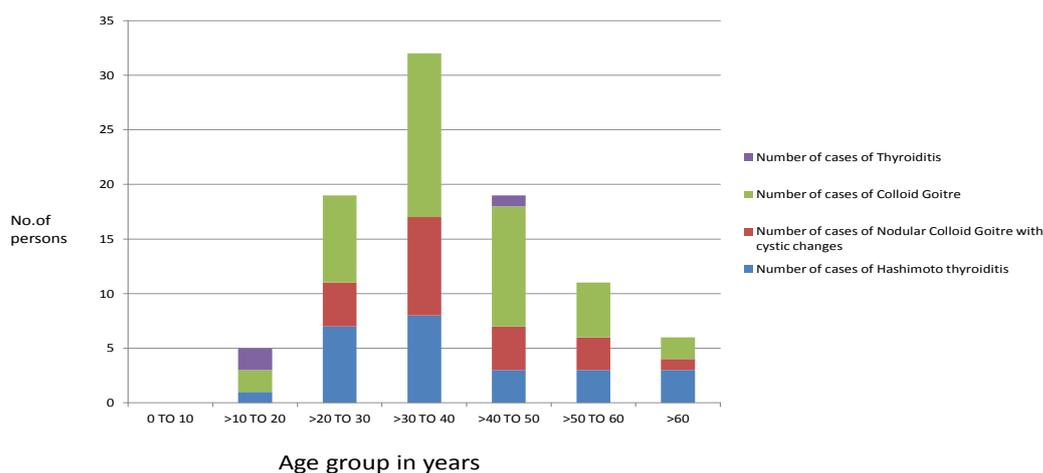
overall accuracy rate around 75% in the detection of thyroid malignancy.^[8]

RESULTS

Of 92 cases, 88 cases were female and 4 cases were male. Peak incidence was in the fourth decade and median age was 38 years. By Fine Needle Aspiration Cytology, of the 92 cases, 90 cases (97.8%) were benign and 2 cases (2.17%) were malignant. Incidence of various

thyroid lesions according to Fine Needle Aspiration cytology were Hashimoto thyroiditis 25 (27.1%) nodular colloid goiter with cystic changes 21 (22.8%), colloid goiter 43 (46.7%) thyroiditis 3 (3.2%). Of the 92 cases, 23 cases were sent for histopathological study, 22 cases correlated with FNAC finding and 1 case diagnosed as nodular colloid goiter on FNAC turned out as papillary carcinoma thyroid on histopathology.

Age Distribution of Thyroid Lesions



CONCLUSION

The fine needle aspiration cytology is a simple, safe, cost effective, time saving and minimally invasive procedure which can be used as an outdoor patient procedure or as a part of screening programme for the diagnosis of thyroid lesion with a high diagnostic yield accuracy, sensitivity and specificity. FNAC is recommended as the first line investigation for the diagnosis of solitary thyroid nodule, especially in developing countries with limited resources, as it helps in differentiating lesions that require surgery from those that can be managed otherwise.

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