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A STUDY ON FINE NEEDLE ASPIRATION CYTOLOGY OF THYROID LESIONS IN A TERTIARY CARE CENTRE

Pathology

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ABSTRACT

Fine Needle Aspiration Cytology (FNAC) is widely considered as diagnostic study of choice inassessment of thyroid lesions. The present study is a one year retrospective study of FNAC of thyroid lesions performed in a tertiary care centre during the period of January 2017 to December 2017. A total of 144 cases of thyroid lesions received over a one year period were analysed and stained by MGG and PAP. Total 134 cases (93.1%) were found to be non-neoplastic and rest 10 cases (6.9%) were neoplastic. FNAC is a very important accurate initial diagnostic test for preoperative evaluation and management of thyroid lesions .

KEYWORDS

FNAC, thyroid lesions.

INTRODUCTION

Fine-needle aspiration cytology (FNAC) plays a vital role in the evaluating patients with thyroid lesions. Thyroid lesions are a common clinical finding with reports of a prevalence ranging from 4–7% of population available in the literature.[1,2] Thyroid lesions are a source of concern for the patients and a diagnostic dilemma for physicians.[3] The prevalence of patients with thyroid nodules ranges from 4-25%.[4] The vast majority of lesions are non-neoplastic , whereas 5-10% are estimated to be neoplastic lesions.[5] FNAC of the thyroid gland is now a well established, most important modality and first line preoperative and pathological diagnostic test, for the evaluation of diffuse thyroid lesions aswell as of thyroid nodules, as it is a rapid, inexpensive investigation.[6] Thyroid cytology not only provides a definite diagnosis of malignancy but also the tumour type, thus enabling appropriate therapeutic surgery. Thyroid FNAC also helps in reducing the rate of surgery for benign thyroid diseases.[7,8] Rapid preoperative assessment and accurate diagnosis of FNAC smears has become increasingly popular due to the global trend in reducing health care costs.[9] Thyroid cytology not only provides a definite diagnosis of malignancy but also the tumour type, thus enabling appropriate therapeutic surgery. Thyroid FNAC also helps in reducing the rate of surgery for benign thyroid diseases.[10]

MATERIALS AND METHOD

This study was carried out in the Department of Pathology, Assam Medical College and Hospital, Dibrugarh, North-East India from January 2017 to December 2017. A total of 144 cases of thyroid lesions were reported in the cytology section. Information about the patient's age, sex, clinical history, ultrasonography findings were recorded.

Aspiration was done with full aseptic precautions using 23 gauge needle using a 10 ml syringe. Multiple smears were prepared from the aspirate and those immediately fixed in 95% ethanol were stained with Papanicolaou (PAP) stain and air dried smears were stained with May Grunwald Giemsa (MGG)stain.

RESULTS

In our study of 144 cases, the maximum number of thyroid lesions were found to be 31-40 year old age group (30.1%) followed by 21-30 years (25.7%). There was female predominance (90.7%) over male. M:F ratio is 1:10. A total of 134 cases (93.1%) were found to be non-neoplastic and rest 10 cases (6.9%) were neoplastic. Out of 134 cases of non-neoplastic lesions, the most common lesion was found to be colloid goiter (52.2%) followed by nodular goitre and hashimoto's thyroiditis which are detailed in Table1. And out of 10 neoplastic lesions, the most common was found to be follicular neoplasm (60%) followed by papillary carcinoma and poorly differentiated carcinoma which are detailed in Table2.

Table1: Distribution of 134 cases of non-neoplastic lesions

Lesions	No. of patients	Percentage (%)
Colloid goitre	70	52.2
Nodular goitre	23	17.3
Hashimoto's thyroiditis	21	15.7
Granulomatous thyroiditis	10	7.5
Cysts	6	4.5
Adenomatous goitre	3	2.2
Graves disease	1	0.8

Table2: Distribution of 10 cases of neoplastic lesions

Lesions	No. of patients	Percentage (%)
Follicular neoplasm	6	60
Papillary carcinoma	3	30
Poorly differentiated carcinoma	1	10

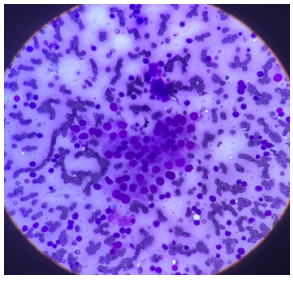

Figure1: Hashimoto's thyroiditis. Clusters of follicular cells with oxyphilic change in a lymphocytic background.

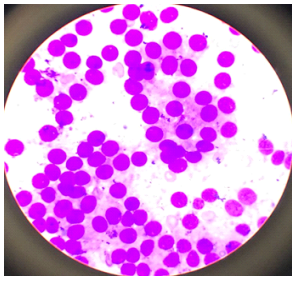

Figure2: Follicular neoplasm. Cellular smears of microfollicles in a repetitive manner.

DISCUSSION

In our study of 144 cases, the commonest age group of thyroid lesion was found to be 31-40 years with female preponderance (90.7%) which is in agreement with Parikh UR et al[11], Singh DK et al[12], Silverman JF et al[13] and Gupta M et al[7].

In the present study, maximum number of cases (93.1%) belonged to the non-neoplastic category and 10 cases (6.9%) belonged to neoplastic category which is closely similar to the study done by Guhamallick M et al[6].

In the present study neoplastic group comprised 10 cases (6.9%), which is slightly higher than the observations of Handa U et al[14]. and

Salari AA et al[15].

Among the distribution of the lesions in present study, the number of cases of colloid and nodular goitre were 70 cases (52.2% of non-neoplastic cases) and 23 cases (17.2% of non-neoplastic cases) which correlated with the studies conducted by Nggada HA et al[16] and Sathiyamurthy k et al[17].

Hashimoto's thyroiditis accounted to 21 cases (15.6% od non-neoplastic cases) in the present study, the number of which was closely similar to the study conducted by Silverman JF et al[13].

The cases diagnosed as follicular neoplasm in this study were 6 cases (60% of neoplastic cases) and papillary carcinoma was diagnosed in 3 cases (30% of neoplastic cases) which is closely similar to the study done by Sathiyamurthy k et al[17].

CONCLUSION

FNAC is a minimally invasive technique of obtaining material for cytological examination. The rapidity, reliability, reproducibility and cost-effective of the method, are the main merits of its popularity for the diagnosis of various thyroid lesions. It can be done as an outpatient procedure and helps in the rapid diagnosis of inflammatory, hyperplastic and neoplastic lesions. It helps to differentiate cysts from solid tumors and serves as a therapeutic procedure when a cyst is encountered. It helps in avoiding unnecessary need for excisional biopsy or in cases where, the treatment is non surgical. It is a rapid diagnostic procedure to rule out recurrence of previously treated malignancy without recourse to surgery. FNAC provides a more rapid and accurate diagnosis of thyroid lesions than any other combination of clinical laboratory tests.

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