

Histo-Pathological Profile of Thyroid Cases at a Tertiary Care Hospital

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Abstract

Introduction: It is critical that cytopathologists should communicate thyroid FNA interpretations to referring physicians in terms that are succinct, unambiguous, and clinically helpful. Historically, terminology for thyroid FNA has varied significantly from one laboratory to another, creating confusion in some cases and hindering the sharing of clinically meaningful data among multiple institutions. **Methodology:** Patients with thyroid lesions referred to the Department of Pathology, Medical College, Hospital & Research Centre for FNAC and histopathological evaluation were taken. **Results:** Total no of benign follicular lesion were 82. Out of which 11 were Adenomatoid goiter, 56 were MNG (colloid nodule), Lymphocytic (Hashimotos thyroiditis) were 14 and 1 case was Granulomatous thyroiditis. **Conclusion:** Histopathological follow up was available in 56 cases, out of which 50 cases were reported as benign thyroid lesion. Follicular carcinoma and malignant tumors were reported in 2 cases each.

Keywords: Thyroid; Histopathology; FNAC.

Introduction

The thyroid is composed of spherical follicles that selectively absorb iodine from the blood for production of thyroid hormone & also store iodine in thyroglobulin. Twenty-five percent of all the body's iodide ions are in the thyroid gland. Inside the follicles, colloid serves as a reservoir of materials for thyroid hormone production and also acts as a reservoir for the hormones themselves. Colloid is rich in a protein called thyroglobulin. The follicles are surrounded by a single layer of thyroid epithelial cells, which secrete T_3 and T_4 . When the gland is not secreting T_3/T_4 (inactive), the epithelial cells range from low columnar to cuboidal cells. When active, the epithelial cells become tall columnar. Parafollicular cells are scattered among these follicular cells and in spaces between the spherical follicles which secrete calcitonin. The primary function of the thyroid is production of triiodothyronine (T_3), thyroxine (T_4), and calcitonin. Up to 80% of the T_4 is converted to T_3 by

peripheral organs such. T_3 is four to ten times more active than T_4 [1,2,3].

Cytology is an excellent method for the study of inflammatory and autoimmune thyroid lesions especially their natural history, that may be better understood by sequential cytological monitoring. The association of primary lymphoma of thyroid with Hashimotos thyroiditis is well known and cytological monitoring has been shown to be of value in early detection of the lymphoma and prompt treatment. Autoimmune thyroid lesions usually are diffuse goitre that may not present clinical or biochemical features of altered thyroid function. They occasionally present as cold thyroid nodules leading to a clinical suspicion of malignancy. In both situations, FNA cytology is of great value [4-6].

Fine-needle aspiration (FNA) has an essential role in the evaluation of euthyroid patients with a thyroid nodule. It reduces the rate of unnecessary thyroid surgery for patients with benign nodules and appropriately triages patients with thyroid cancer to appropriate surgery. Before the routine use of thyroid FNA, the percentage of surgically resected thyroid nodules that were malignant was 14%. With current thyroid FNA practice, the percentage of resected nodules that are malignant surpasses 50% [7].

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It is critical that cytopathologists should communicate thyroid FNA interpretations to referring physicians in terms that are succinct, unambiguous, and clinically helpful. Historically, terminology for thyroid FNA has varied significantly from one laboratory to another, creating confusion in some cases and hindering the sharing of clinically meaningful data among multiple institutions [7].

To address terminology and other issues related to thyroid FNA, the National Cancer Institute (NCI) hosted the "NCI Thyroid FNA State of the Science Conference" which was organized by Andrea Abati. It took place on October 22 and 23, 2007, in Bethesda. Edmund, Cibas and Susan J M, served as moderators. Zubair W B, served as chair of the Terminology and Morphologic Criteria committee [7].

Methodology

Source of Data

Patients with thyroid lesions referred to the Department of Pathology, Medical College, Hospital & Research Centre for FNAC and histopathological evaluation were taken.

Methods of Collection of Data

Detailed clinical history and examination findings of the patients were noted Standard FNAC procedure was performed by using Cameco syringe pistol,

disposable syringe {10ml} and 24-20G needle. Multiple smears were prepared simultaneously. Wet-fixed smears in absolute alcohol were stained with Hematoxylin and Eosin {H & E} and Papanicolaou stains while air dried smears were stained with May-Grunewald Giemsa {MGG} stain.

Inclusion Criteria

All cases of thyroid lesions for which FNAC and histopathological examination are performed were included.

Exclusion Criteria

Swelling in front of the neck other than thyroid lesions were excluded.

Results

The maximum number of cases were in the age group 41-60 years. In females the maximum numbers of cases were in the age group of 41-50 years. In males, the maximum number of cases were in the age group of 41-50 years. In males no cases were noted in the age group of 11-40 years.

Total no of benign follicular lesion were 82. Out of which 11 were Adenomatoid goiter, 56 were MNG (colloid nodule), Lymphocytic (Hashimoto's thyroiditis) were 14 and 1 case was Granulomatous thyroiditis.

Table 1: Age and sex distribution

Sl. No.	Age in years	No of males	No of females	Total no	Percentage%
1	11-20	00	07	7	6.6
2	21-30	00	14	14	13.2
3	31-40	00	12	12	11.3
4	41-50	4	28	32	30.1
5	51-60	3	26	29	27.3
6	61-70	2	07	9	8.4
7	71-80	1	02	3	2.8

Table 2: Cytological diagnosis of Benign Follicular lesions

Benign follicular lesion	No of cases(n=82)	Percentage
Adenomatoid goitre	11	13.4
Multinodular goiter (colloid nodule)	56	68.3
Lymphocytic (Hashimoto's thyroiditis)	14	17.07
Granulomatous (subacute thyroiditis)	1	1.21

Table 3: Histopathological Diagnosis

Categories	No of Cases (n=56)	Percentage
Benign thyroid lesion	50	89.3%
Follicular Neoplasm/Follicular carcinoma	2	3.57%
Follicular carcinoma	2	3.57%
Malignant	2	3.57%
Total	56	100

Table 4: Histopathological diagnosis of benign thyroid lesion

Benign Thyroid lesion	No of Cases (n=50)	Percentage %
MNG	37	74%
Adenomatoidgoiter	3	6%
Colloid goiter	4	8%
Hashimotos thyroiditis	6	12%

Histopathological follow up was available in 56 cases, out of which 50 cases were reported as benign thyroid lesion. Follicular carcinoma and malignant tumors were reported in 2 cases each.

Discussion

FNA thyroid has been accepted as screening test for patients with palpable thyroid lesion. The main role of FNA thyroid is to plan the patients of thyroid lesion. Patients that are diagnosed as neoplasm / malignancy are managed surgically and non-neoplastic lesions can be managed clinically [8].

Considering age and sex incidence, thyroid lesions were common in 3rd and 4th decade and showed female predominance.

Total number of cases studied on FNAC were 104. Out of which 104 cases 82 (78.8%) were benign lesions, 10(9.6%) were unsatisfactory/nondiagnostic, 6 (6.20%) were Follicular neoplasm/suspicious for neoplasm, 4 (4.16%) were suspicious of malignancy, 3 (3.12%) were Malignant and one case was reported as Atypia of undetermined significance. The available histopathological follow up was in 56 cases (53.8%). In 8 cases (14.4%) there was cyto histologic discrepancy.

In the present study the cyto-histopathological discrepancy was noted in 14.4% which is in correlation with the study done by yang et al [5].

The sensitivity and specificity in the present study is 60% and 98% respectively. P value is 0.0014 and statistically highly significant.

Conclusion

Cytology is an excellent method for the study of inflammatory and autoimmune thyroid lesions especially their natural history, that may be better understood by sequential cytological monitoring.

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