Volume : 5 | Issue : 5 | May 2016 • ISSN No 2277 - 8179 | IF : 3.508 | IC Value : 69.48

Research Paper

Cytomorphological Profile in Cases of Diffuse Thyromegaly

Medical Science

KEYWORDS : diffuse thyroid swelling, fine needle aspiration cytology.

Dr Vasuki S	Associate professor. Pathology, Department of Pathology. Tirunelveli Government Medical College. Tirunelveli. TamilNadu. Pincode -627011.
Dr S Vallimanavalan	Professor. Pathology, Department of Pathology. Tirunelveli Government Medical College. Tirunelveli. TamilNadu. Pincode -627011.
Manojmurugan K.	MBBS student, Department of Pathology. Tirunelveli Government Medical College. Tirunelveli. TamilNadu. Pincode -627011.

ABSTRACT

AIM: Fine needle aspiration cytology is an established first line test for the study of thyroid swelling. A swelling in the thyroid can be either diffuse type or nodular type. The aim of the study is based on the assessment of cytomorphological features in different cases of diffuse thyromegaly.
MATERIALS AND METHODS: 50 patients who presented with the complaints of swelling in the neck were taken for the study, their cytomorphological features were studied after FNAC.
RESULTS: Out of 50 cases, 40 cases were found with diffuse swelling. Among the 40, 37 were females, only three were males. Results show that 60% of the diffuse swelling were caused by Hashimoto's thyroiditis. Patients of age 30 to 40yrs were found with diffuse swelling.
CONCLUSION: In our study, we included 40 patients who presented to FNAC OPD with diffuse thyromegaly. Most common lesion diagnosed was Hashimotos thyroiditis comprising 60% of lesions and occurring in all age groups, common in 30-40 years of age.

INTRODUCTION:
Fine needle aspiration technology (FNAC) of the thyroid gland is firmly established as a first line diagnostic test for the evaluation of the gland enlargement. It is also the single most effective test for the preoperative diagnosis of lesions of the thyroid gland[1]. Recent studies have also confirmed that FNAC is more sensitive as well as specific in segregating neoplastic and non neoplastic thyroid pathology. Identification of predominant cell pattern, morphology and background details in FNAC smear plays an important role in diagnosing various thyroid lesions with accuracy[2].

Swelling in thyroid gland is of two major types-diffuse and nodular. Causes of diffuse thyromegaly are

1. Autoimmune (hashimoto's) thyroiditis
2. Thyrotoxicosis
3. TSH-secreting pituitary adenoma
4. Goitrogens
5. Antithyroid drugs
6. Simple colloid goitre
7. Thyroid cyst

Causes of nodular swelling are
1. Solitary nodular goiter
2. Papillary or follicular carcinoma
3. Unilateral (hemi)agenesis of thyroid lobe

The causes for the swelling can be identified with FNAC.

MATERIALS AND METHOD:
The study was conducted on 50 cases presenting with thyroid gland swelling. The hormonal status of the patients was also recorded. FNAC was done using standard procedure on an outpatient basis. Air dried smears were prepared. The basic materials are

1. A syringe holder or syringe pistol.
2. Disposable 10-mL plastic syringes
3. Disposable 25- or 27-gauge needles, 1 1/2 inches long
4. Glass slides with one end frosted.
5. Alcohol prep sponges
6. Alcohol bottles for immediate wet fixation of smears
7. Gloves.
8. Containers for cystic fluid collection and transportation to the cytology laboratory
9. Laboratory slips with the patient's name, clinic number, biopsy sites, and other relevant information to be transferred to the cytology laboratory
10. Lidocaine—1% lidocaine should be available for those who prefer biopsy with local anesthesia.

The biopsies were taken. The cytomorphological features were observed.

RESULTS
50 cases of thyroid swelling were studied with special attention to their cytomorphological features. Based on the observation, the causes for diffuse swelling were identified. The latter was correlated with patient's age and sex. The commonest cause for the diffuse thyromegaly was studied.

There was female preponderance in all categories. Among 50 cases, 40 cases are found with diffuse thyromegaly, There were 37 females(77%) and 3 males(13%) in this study

The age group between 20 to 40 yrs contributed with maximum number of cases belonging to diffuse thyromegaly(44%).

It was observed that among 40 cases of diffuse thyromegaly, Hashimoto's thyroiditis accounted for 24 out of 40 cases(60%), followed by lymphocytic thyroiditis in 6 cases(15%). Next is the simple colloid goitre which had same percentage as lymphocytic thyroiditis. Carcinoma of thyroid contributed about 5%.

The remaining 10 cases presented with nodular swelling. Nodular goitre was the major cause for the swelling in these cases. In one or two cases, nodular goitre presented along with cystic lesions.

DISCUSSION
FNAC is a safe, simple, cost effective procedure that can be performed on out-patients with wide patient acceptance. It provides a more rapid and accurate diagnosis of thyroid lesions. The lesions that present with thyroid enlargement are[2]

1. Multinodular goitre

Volume : 5 | Issue : 5 | May 2016 • ISSN No 2277 - 8179 | IF : 3.508 | IC Value : 69.48

2. Diffuse toxic goitre
3. Dyshormonogenic goitre
4. Autoimmune thyroiditis – Florid lymphocytic thyroiditis , Hashimotos thyroiditis
5. Acute suppurative thyroiditis
6. Subacute thyroiditis
7. Riedel's thyroiditis
8. Neoplasms diffusely involving thyroid – malignant lymphoma, anaplastic carcinoma .

Multinodular Goitre :
Multinodular goitre was not included in our study.

Diffuse Toxic Goitre :
Usually FNAC is avoided in toxic goitre.

Diffuse Non Toxic Goitre :
Common lesions that presents with diffuse non toxic goitre are Colloid goitre, Lymphocytic thyroiditis, Hashimotos thyroiditis[3]. FNAC reliably distinguishes between colloid goitre and autoimmine thyroiditis in most cases. Because latter requires life long treatment and follow up. Antibody levels are positive in only 60-80% of cases[3]. Thus cases may be missed if antibody estimation is used as a sole screening indicator. Also cytological pattern may be diagnostic well before antibody levels in serum have risen significantly .Thus FNAC is an essential tool in diagnosis of diffuse nontoxic goitre .

Cytologically colloid goitre shows no difference from normal thyroid except for presence of abundant colloid of varying thicknes .

Florid lymphocytic thyroiditis - Thyroid follicular cells are relatively sparse and cells do not show oxyphilic change. Occur more commonly in women and in younger patients. In our study, lymphocytic thyroiditis contributed to around 17% of cases. All were female patients and half of them are 10-20 years old.

Hashimotos thyroiditis is common in women and can occur in any age but common in older age group. In our study, Hashimotos was the commonest among the diffuse lesions of thyroid – 42%. All were females with many cases in 30-40 years of age

Possibility of lymphoma should be carefully considered in any case of florid lymphocytic infiltration of thyroid particularly in older patients more than 60 yrs of age[4]

Acute Suppurative Thyroiditis :
It is a rare condition seen in immunocompromised patients

Subacute Thyroiditis :
Presents as a painful diffuse enlargement of thyroid often accompanied by fever, elevated ESR and sore throat

Dyshormonogenic Goitre :
This is an uncommon disease caused by defects in enzymes involved in synthesis of thyroid hormone. Usually presents in childhood often with hypothyroidism .

Riedel's Thyroiditis :
This is common in women and is characterised by complete replacement of thyroid gland tissue by fibrous tissue which may extend outside the gland causing fixation of gland. FNAC is unlikely to yield any cellular material.

CONCLUSION
In our study we included 40 patients who presented to FNAC OPD with diffuse thyromegaly. Most common lesion diagnosed was Hashimotos thyroiditis comprising 60% of lesions and occurring in all age groups, common in 30-40 years of age. Colloid goitre is second most common – 15% of lesions common in 20-30 age groups. Lymphocytic thyroiditis is common in women and in 20-30 years of age, comprising around 15% of total lesions . Carcinoma contributes about 10% of total lesions common in 50-60 years of age.

TABLE 1

AGE	SEX-MALE	SEX-FEMALE	DIFFUSE SWELLING	PERCENTAGE	NODULAR SWELLING	PERCENTAGE
<10		1	1	2%	-	-
11-20	1	5	6	12%	-	-
21-30		13	10	20%	3	6%
31-40		14	12	24%	2	4%
41-50	1	6	5	10%	2	4%
51-60	1	6	5	10%	2	4%
61-70		2	1	2%	1	2%

CHART1:

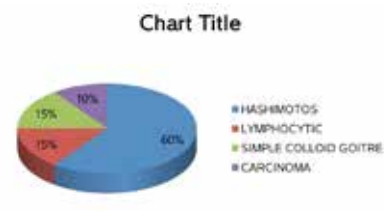


CHART 2:

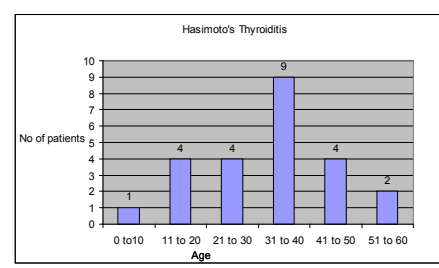


CHART 3:

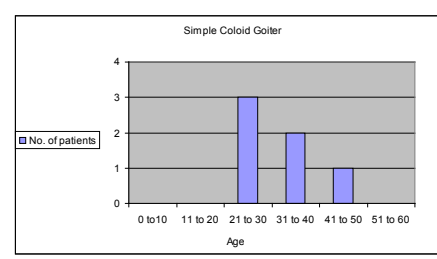


CHART 4:

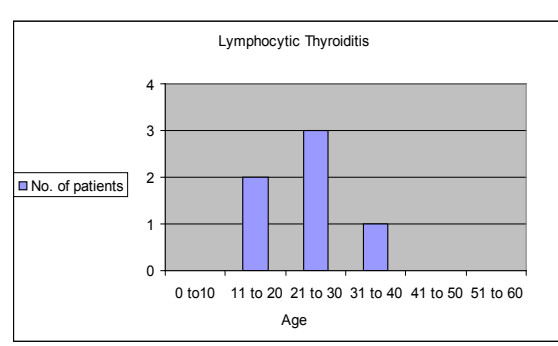
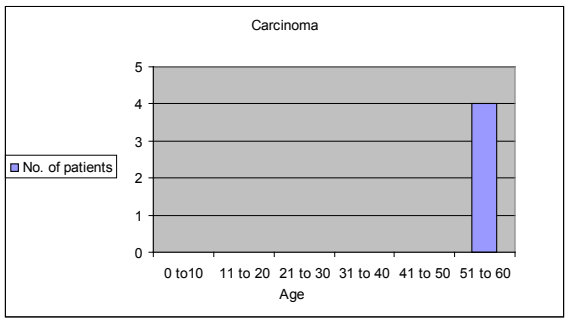


CHART 5:



REFERNCES:

1. Orell SR, Sterrett GF, Whitaker D. Fine needle aspiration cytology. 4thed. New York: Elsevier Churchill Livingstone; 2005.
2. Svante R. Orelle, Jaenette Philips. Cytological Patterns in Thyroid Disease. In : .Svante R. Orelle editor. The Thyroid-Fine Needle Biopsy And Cytological Diagnosis Of Thyroid Lesions, vol.14. Basel: Karger; 1997. P. 61-3.
3. Svante R. Orelle, Gregory F Sterrett, Darrel Whitaker.`Thyroid. In: .Svante R. Orelle editor. Fine Needle Aspiration Cytology, 4th ed. New Delhi: Elsevier; 2005. P.125-38
4. Svante R. Orelle, Jaenette Philips. Cytological Patterns in Thyroid Disease. In : .Svante R. Orelle editor. The Thyroid-Fine Needle Biopsy And Cytological Diagnosis Of Thyroid Lesions, vol.14. Basel: Karger; 1997. P. 66-84.