

PATTERN OF THYROID DISORDER IN THYROIDECTOMY SPECIMEN

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ABSTRACT

Background: There is enormous burden of thyroid diseases in the general population. Among all the endocrine disorders, thyroid disorder are the most common in India, though most of them are benign. Multinodular goitre is the commonest cause of thyroid enlargement followed by thyroid tumors.

Aims & Objectives: The aim of this study is to describe the clinicopathological findings of thyroidectomy specimens.

Materials and Methods: It was a 24 month (May 2012 to May 2014) non-interventional retrospective study, including all cases of thyroidectomy specimens in Azeezia Medical College, Kollam, Kerala. All histology reports, clinical informations and stained slides were reviewed. Thyroid diseases were grouped into different categories according to gender and age distribution.

Results: A total of 179 lesions were reviewed, 167 were from females and 12 from males. 164 cases were found non-neoplastic and 15 were neoplastic lesions. Multinodular goitre was found to be the commonest - 116 (64.8%) non-neoplastic lesion, followed by Hashimoto's thyroiditis 21(11.73%). Among 179 specimens, 15 (8.37%) were of thyroid malignancy, and papillary carcinoma was found to be the commonest malignant thyroid lesion, observed in (10 /15) 66.66% of all thyroid malignant lesions. This was followed by follicular carcinoma (3/15) 20% and while medullary and poorly differentiated carcinoma were noted in one patients each.

Conclusion: The commonest cause of goitre was multinodular goitre. Papillary carcinoma was the commonest malignant lesion.

Key Words: Multinodular Goitre; Follicular Adenoma; Hashimoto's Thyroiditis; Papillary Carcinoma; Thyroiditis; Thyrotoxicosis, Tumor

Introduction

Thyroid gland is one of the important organs, which plays wide and vital physiological roles in the body. The thyroid hormones affect all body organs and are responsible for maintenance of homeostasis and the body integrity.^[1] There is enormous burden of thyroid diseases in the general population. Among all the endocrine disorders, thyroid disorders are the most common in India.^[2] Literature suggests that as many as 50% of people in the community have microscopic nodules, 3.5% have occult papillary carcinoma, 15% have palpable goitre, 10% have an abnormal thyroid stimulating hormonal level, and 5% of women have overt hypothyroidism or hyperthyroidism.^[3]

Thyroid disorders are one of the common problem witnessed in clinical practice with majority of them are benign in nature.^[4] They are endemic in mountainous regions of the world - where the soil, water, and food supply contain little iodine.^[5] Consumption of iodinated salts by the people in their diet has reduced the occurrence rate.

Thyroid nodules which are commonly encountered in the clinical practice, are far more common in females than in males.^[6,7] Nodular goitre can occur as a result of an

endemic goitre due to iodine deficiency in the soil, water or food. Sporadic nodules may be caused by a variety of conditions - most of them are benign in nature, but still can simulate malignancy.^[8] Most of these nodules are benign in nature and only 5% may be malignant.^[7] Multinodular goitre is the commonest cause of thyroid enlargement followed by thyroid tumors.^[9] Long-standing goitre (more than 5 years) is one of the risk factor for the development of thyroid cancer.^[10] FNAC of thyroid nodule is a very helpful tool in differentiating the benign nodule from the malignant.^[7]

Thyroid cancer is a relatively rare malignancy - representing only 1.5% of all cancer, but it is the commonest endocrine cancer accounting for 92% of all endocrine malignancies. Papillary carcinoma is the most common thyroid cancer followed by follicular, medullary, anaplastic carcinoma and lymphoma.^[11]

The aim of the study was to describe the pattern of thyroid disorders in thyroidectomy specimen received in the department.

Materials and Methods

It was a 24 month (May 2012 to May 2014) non-interventional retrospective study, including all the 179

patients who underwent thyroidectomy in the Azeezia Medical College hospital. Thyroidectomy operation decision was based on clinical, radiologic and laboratory tests.

Specimens' sections were stained with hematoxylin and eosin, and special stains were considered and used when needed. The histopathological findings were classified into six groups: Nodular goitre, thyroiditis, benign tumors (follicular adenomas), malignant tumors, Primary thyrotoxicosis, and others. Strict morphologic diagnostic criteria were used for the above grouping.

Results

A total of 179 thyroidectomies were performed during study period, and all 179 thyroidectomy specimens were reviewed. The distribution of cases according to the clinical diagnosis and the treatment received is shown in Table 1 - multi Nodular Goitre being the commonest diagnosis, followed by the solitary nodule. Among the multinodular goitre patients, 50.96% and 20.8% of patients underwent subtotal and hemi thyroidectomy surgeries respectively. Table.2 shows the age and sex distribution of thyroid disorders according to the histopathological report of the thyroidectomy specimens. Out of 179 specimens, 167 (93.2%) and 12 (6.7%) were of female and male patients respectively. Multi Nodular goitre was the commonest in 116 (64.8%) followed by Hashimotos thyroiditis (HM) in 21 (11.73%). Table 3 represents thyroid malignancies. Among 179 specimens, 15 (8.37%) were of thyroid malignancy and papillary carcinoma was found to be the commonest malignant thyroid lesion, observed in (10 /15) 66.66% of all thyroid malignant lesions. This was followed by follicular carcinoma (3/15) in 20% - medullary and poorly differentiated carcinoma were noted in one patients each.

Table-1: Clinical diagnosis and treatment received

Clinical Diagnosis	Treatment Given					N	%
	Lobectomy	HT	TT	NT	ST		
Multi nodular goitre (MNG)	0	31	4	16	53	104	58.10
Solitary nodule (SN)	4	44	1	1	4	54	30.16
Nodular colloid goitre (NCG)	0	3	0	0	2	5	2.79
Hashimoto's thyroiditis (HM)	0	1	0	1	2	4	2.23
Papillary carcinoma (PCA)	0	0	3	1		4	2.23
Graves' disease	0	0	0	1	2	3	1.67
Follicular neoplasm	0	0	0	1	0	1	0.55
Hyperthyroidism	0	1	0	0	0	1	0.55
MNG + Hyperthyroidism	0	0	0	0	1	1	0.55
Solitary nodule + Hyperthyroidism	0	0	0	0	1	1	0.55
Subacute thyroiditis	0	0	0	0	1	1	0.55

HT - Hemi thyroidectomy; TT - Total thyroidectomy; NT - Near total thyroidectomy; ST - Subtotal thyroidectomy

Table-2: Sex and Age wise distribution of Thyroid disorder (HP Report Based)

HP Diagnosis	N	%	M	F	≥20	21-30	31-40	41-50	51-60	61-70
MNG	116	64.80	9	107	2	13	32	42	21	6
HM	21	11.73	0	21	0	5	6	7	2	1
MNG + LT	11	6.14	0	11	0	2	2	4	2	1
LT	8	4.46	0	8	0	4	2	1	1	0
Papillary carcinoma	10	5.58	1	9	0	3	4	1	2	0
Follicular adenoma	3	1.67	1	2	0	1	0	1	0	1
Follicular carcinoma	3	1.67	0	3	0	1	1	0	1	0
Diffuse colloid goitre	2	1.11	0	2	0	0	1	1	0	0
Hurtle cell adenoma	2	1.11	1	1	0	1	0	0	0	1
Medullary carcinoma	1	0.55	0	1	0	1	0	0	0	0
MNG + HM	1	0.55	0	1	0	0	1	0	0	0
Poorly differentiated carcinoma	1	0.55	0	1	0	0	1	0	0	0

Table-3: Sex and Age wise distribution of Thyroid Malignancy

HP Diagnosis	N	%	M	F	≥20	21-30	31-40	41-50	51-60	61-70
Papillary carcinoma	6	40	1	5	0	1	3	0	2	0
Follicular carcinoma	3	30	0	3	0	1	1	0	1	0
PCA follicular variant	2	13.33	0	2	0	1	1	0	0	0
Papillary micro carcinoma	2	13.33	0	2	0	1	0	1	0	0
Medullary carcinoma	1	6.66	0	1	0	1	0	0	0	0
Poorly differentiated carcinoma	1	6.66	0	1	0	0	1	0	0	0

Discussion

Diseases of the thyroid are of great importance as most can be controlled by medical or surgical management.^[6] According to WHO, 7% of the world population is suffering from clinically apparent goitre, and majority of them are from developing countries, where the disease is attributed to iodine deficiency.^[10] Thyroid enlargement may be in the form of multinodular, solitary or diffuse goitre - and is accounted for frequent surgical problem.^[12] Thyroidectomy, presently, has become a routine procedure as result of safe anaesthesia, antiseptics, fine surgical instruments, developments of new techniques and is offering the chances of cure to many patients.^[13]

In current study, as identical to many studies, number of female patients was more than the male patients. The non-neoplastic lesions (91.63%) were more common than the neoplastic (8.37%). These results were in agreement with previous studies.^[14,15] In this study, multinodular goitre (MNG) accounted for 64.8% (116) cases, forming the most common pathologic presentation - despite the fact that the study population has a good constant access to dietary iodine, mainly from seafood

products and consumption of iodide salt. Among the MNG cases, 107 cases were of females, and male accounted for only 9 cases. MNG were diagnosed in the age group of 31 – 50 (74 cases). Similar results were noted with respect to distribution of age and sex in MNG cases with studies of Abdulla H.^[8] In the present study, HM was the second most frequently encountered thyroid disorder. Thyroid malignancy accounted for 15 (8.37%) of total thyroid disorder. In this study, papillary carcinoma was the most common malignant thyroid lesion observed in (10 /15) 66.66% of the malignant lesions. This observation was consistent with several other studies.^[16] This was followed by follicular carcinoma (3/15) in 20% – while medullary and poorly differentiated carcinoma were noted in one patients each. In conclusion, benign thyroid lesions were more common than malignant lesions. MNG was the commonest lesion observed in thyroid specimens. Papillary carcinoma was the commonest thyroid cancer followed by follicular carcinoma.

Conclusion

The commonest cause of goitre was multinodular goitre. Papillary carcinoma was the commonest malignant lesion.

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