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STUDY OF HISTOPATHOLOGICAL LESIONS OF THYROID IN A TERTIARY CARE HOSPITAL IN NORTH TELANAGANA

Pathology

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ABSTRACT

INTRODUCTION: Thyroid cancers accounts for approximately 1% of all malignancies in developed countries with an estimated annual incidence of 1,22,000 cases worldwide.Thyroid enlargements may be diffuse or nodular, often with physiological changes . Thyroid nodules are more common in women and in regions of low intake of iodine .

MATERIALS & METHODS: The present study is a prospective and retrospective study done for a period of two years. All the clinical history, radiological examination details were collected. Specimens were sent to department of Pathology after surgical excision for histopathological examination. Sections were taken and observed carefully for microscopic examination.

RESULTS: Multinodular goitre constitiuted highest number of cases among all the different lesions. Among the malignant lesions, Papillary carcinoma thyroid (PCT) was the most common neoplasm constituting 7 cases, followed by Follicular carcinoma of thyroid 3 cases and Medullary carcinoma thyroid and anaplastic carcinoma thyroid each one case. Females are more affected than males in our study and the age group between 31-40 years constituted highest number of cases.

CONCLUSION: Enlargement of thyroid is one of the common day to day problem. All cases of enlarged thyroid should be evaluated with hormonal study and also should compare with radiological and cytological studies also. Even small thyroid nodules may be missed as malignancies which may metastasis also. Multinodular goitre was the most common benign lesion and Papillary carcinoma thyroid was the most common malignant disorder observed in our study. Females are more affected compared to males.

KEYWORDS

Thyroid, goitre, papillary carcinoma, adenoma

INTRODUCTION

Thyroid gland has 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]. Thyroid disorders range from functional, immunological derangements to neoplastic lesions . The major function of the thyroid gland is to maintain a high rate of metabolism which is done by means of iodine-containing thyroid hormones, thyroxine and tri-iodothyronine.

The thyroid is one of the most labile organs in the body and responds to numerous stimuli such as puberty, pregnancy, physiologic stress and various pathologic states. This functional lability of the thyroid is responsible for transient hyperplasia of the thyroidal epithelium.[2]

Hyperthyroidism may be caused by many diseases but three most common causes are: Graves disease, toxic multinodular goitre and a toxic adenoma. A sudden spurt in the severity of hyperthyroidism termed ' thyroid storm' or thyroid crisis may occur in patients who have undergone subtotal thyroidectomy before adequate control of hyperthyroid state, or in a hyperthyroid patient under acute stress, trauma, and with severe infection.

MATERIALS AND METHODS

The present study is a prospective and retrospective study for 2years (January 2016 – December 2018) was done in Department of Pathology, a total of 71 thyroid specimen were received.

Clinical details for the Retrospective study were obtained from the old files in the department. Paraffin blocks of sections diagnosed as malignancy were sorted out; sections were cut and stained with H&E for Histopathological study. For prospective study on receiving the specimens, the gross features were noted, and the tissues were fixed in 10% formalin for 24hrs. After formalin fixation, multiple bits were taken from representative sites. They were processed for histopathological examination and paraffin blocks were made. The blocks were cut at 3-4 microns thickness and stained with H&E. Microscopic examination of the tumor was done to arrive at an accurate diagnosis. The data collected was analyzed for various parameters like age, sex and incidence of different histological patterns.

RESULTS

Out of 71 cases, Mutinodular goiter constituted highest number of cases, followed by granulomatous thyroiditis. Among different benign lesions adenoma, hashimotos and hurthle cell adenoma were included. Among the malignant lesions, Papillary carcinoma thyroid was the most common neoplasm, followed by follicular carcinoma, medullary carcinoma and anaplastic carcinoma of thyroid [Table 1]. Females are more affected than males and age group between 31-40 years contributed highest number of cases. [Table 2]

DISCUSSION

Diseases of the thyroid are of great importance as most can be controlled by medical or surgical management. Thyroidectomy, presently, has become a routine procedure as a result of safe anesthesia, antiseptics, fine surgical instruments, developments of new techniques and is offering the chances of cure to many patients.

Inflammation of the thyroid, thyroiditis, is more often due to non – infectious causes and is classified on the basis of onset and duration of disease into acute, subacute and chronic thyroiditis. The term goiter is defined as thyroid enlargement caused by compensatory hyperplasia and hypertrophy of the follicular epithelium in response to thyroid hormone deficiency.

Diffuse, nontoxic simple or colloid goiter is the name given to diffuse enlargement of the thyroid gland, unaccompanied by hyperthyroidism. Most cases are in a state of euthyroid though they may have passed through preceding stage of hypothyroidism due to inadequate supply of iodine.TSH levels are invariably elevated.

Follicular adenoma is the most common benign thyroid tumour occurring more frequently in adult women. Clinically, it appears as a solitary nodule which can be found in approximately 1% of the population.

Thyroid tumors are the most common endocrine tumors. Carcinoma of the thyroid gland is a relatively rare disease accounting for 1% of all malignant neoplasms. Thyroid malignancy occur more commonly in female than in male. The role of sex hormones during a woman's menstrual cycle and pregnancy and menopause has been hypothesized as a reason for the gender disparity in thyroid cancers. In particular, the peak incidence of papillary thyroid cancer has also been observed in women aged 40-49 years, this being the age group at which most women approach or enter menopause.

Papillary carcinoma thyroid is the most common form of thyroid malignancy. They occur at any age but most often in the twenties to forties, and account for the majority of thyroid carcinomas associated with previous exposure to ionising radiation.Various pathways involved in the pathogenesis include rearrangements of the tyrosine kinase receptors RET or NTRK1 and another involves activating mutations in the BRAF oncogene. There are variant forms of papillary carcinoma that are important to recognise because they can resemble

other lesions and have unique clinical features. Medullary carcinomas arise from the parafollicular C cells in the thyroid. Familial medullary thyroid carcinomas occur in multiple endocrine neoplasia type 2.[3] Anaplastic carcinomas are highly aggressive and lethal tumours can arise denovo or by dedifferentiation of a well differentiated papillary or follicular carcinoma.

Table 1: Showing various lesions in the present study

Sl No	Lesion	Number of cases
1	Granulomatous thyroiditis	02
2	Multinodular goitre	37
3	Adenoma	07
4	Hashimotos	07
5	Hurthle cell adenoma	02
6	Papillary carcinoma	11
7	Medullary carcinoma	01
8	Follicular carcinoma	01
9	Anaplastic carcinoma	03
Total		71

Papillary carcinoma is the most common malignant neoplasm in there studies also which is similar to our study. This observation was in accordance with the study of Chukudebelu et al. (2012), Abdulkader et al. (2014) and Gupta A et al (2016).[4,5,6]

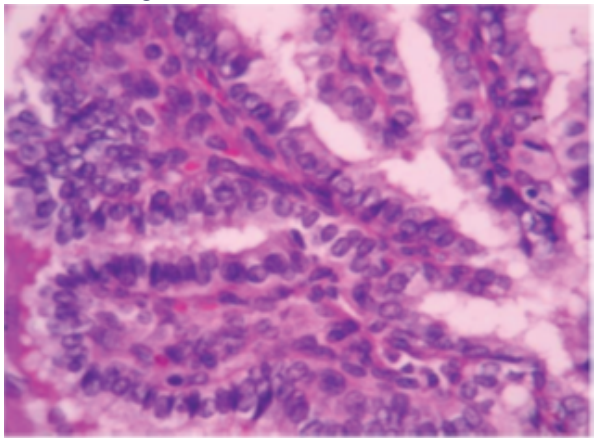
CONCLUSION

Thyroid problems are the most common problems which we encounter in our day to day life. Thyroid swelling should not be neglected because tumours like anaplastic carcinoma are very aggressive and may metastasise fast and may lead to death of the patient. Although FNAC helps us in diagnosing the lesion but histopathological examination is the final diagnosis along with the help of immunohistochemistry.

Table 2: Showing age distribution

Sl no	Age group	No. of cases
1	0-10	01
2	11-20	05
3	21-30	22
4	31-40	37
5	41-50	04
6	51-60	02
Total		71

Figure 1: Section showing tumour tissue arranged in branching papillary pattern and the individual cells showing clearing of nulei and few showing inclusions. [H&E, x40]



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