

ORIGINAL RESEARCH

Study of Histopathological Spectrum of Non-Neoplastic Lesions of Thyroid

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ABSTRACT

Background: Thyroid gland is one of the vital endocrine organs and thyroid disorders are the most common endocrine disorders. The prevalence of thyroid disease in India is huge. Thyroid lesions usually present as goitrous enlargement and nodules. Non-neoplastic lesions are more common than the neoplastic lesions.

Materials and Methods: The present study was conducted both retrospective and prospectively and included 100 non-neoplastic thyroid specimens received to the department. The clinical details were noted, specimens were fixed in formalin and H&E sections were studied.

Results: Most of the patients were in the age group of third decade of life constituting about 57% of all the cases. There is female preponderance in the study overall, with female to male ratio of 2.4:1. In this study, the commonest non-neoplastic thyroid lesion observed was nodular goitre which accounted for 56%, followed by colloid goitre, 33%. Hashimoto's thyroiditis is the commonest inflammatory lesion (5%) and 1 case of thyroglossal cyst diagnosed.

Conclusion: The present study was conducted to evaluate the spectrum of distribution of non-neoplastic thyroid lesions in the institute as these show higher incidence than the neoplastic lesions.

Keywords: Endocrine, thyroid, non-neoplastic. Goitre.

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INTRODUCTION

Thyroid gland is one of the vital endocrine organs, responsible for maintenance of homeostasis and the body integrity and also essential for proper growth and development of nervous system.^[1] Thyroid disorders are the most common endocrine disorders in India.^[2] The prevalence of thyroid disease in India is huge with about an estimated 42 million people suffering with thyroid disorders and incidence is variable with factors like geographical

region, age, gender, nutrition and environment.^[3,4] Thyroid lesions usually present as goitrous enlargement and nodules with or without association with hypo or hyperthyroidism. Thyroid nodules may be diagnosed by different methods and include clinical evaluation, thyroid function tests and ultrasonography. But these methods are not considered strong for evaluation of thyroid nodules.^[5] Final and accurate diagnosis is based on histopathological examination of thyroid nodules. Though FNAC is a very useful investigation in cases of thyroid lesions, it has few limitations like adequacy of material, errors in interpretation of cytology as the sampling of the lesion can be variable and may not always be representative.^[6]

MATERIALS & METHODS

The study was conducted both retrospective and prospectively in the department of Pathology, NIMRA medical college, Vijayawada over a period of two years. The present study included 100 non-neoplastic thyroid specimens received to the department. Neoplastic lesions of thyroid were excluded from the study. The clinical details were noted such as age, sex, presenting complaints and clinical diagnosis from the requisition forms. For prospective study, specimens were fixed, gross findings were noted, and the tissue bits were given from the representative areas and stained with hematoxylin and eosin. For retrospective study all the details were obtained from medical record department and old histopathology archives.

RESULTS

A total of 100 non-neoplastic thyroid specimens were included in the study to be analysed. Most of the patients were in the age group of third decade of life constituting about 57% of all the cases and majority in the third and fourth decades, together accounting for 89% cases. Youngest patient in the study was 8 years old and the oldest patient 65 years. There is female preponderance in the study overall, with female to male ratio of 2.4:1. In this study, the commonest non-neoplastic thyroid lesion is found to be nodular goitre which comprises 56% followed by colloid goitre in 33% cases. These cases were diagnosed in both sexes but majority in females. Rest of them are 9 cases (9%) of thyroiditis (5 cases of Hashimoto's thyroiditis, 4 cases of lymphocytic thyroiditis), and all these inflammatory lesions were predominant in females. 1 case of thyroglossal duct cyst (1%) was observed in a young boy of 8 years age.

Table 1: Distribution of cases according to type of lesion

Serial no.	Type of lesion	Number	Percentage (%)
1.	Colloid goitre	33	34%
2.	Nodular goitre	56	56%
3.	Lymphocytic thyroiditis	4	4%
4.	Hashimoto's thyroiditis	5	5%
5.	Thyroglossal duct cyst	1	1%

Table 2: Age wise distribution of cases

Age in years	Colloid goitre	Nodular goitre	Lymphocytic thyroiditis	Hashimoto's thyroiditis	Thyroglossal duct cyst	Total
0-10	-	-	-	-	1	1(1%)
11-20	2	-	-	-	-	2(2%)
21-30	14	37	3	3	-	57(57%)
31-40	16	14	1	1	-	32(32%)
41-50	2	3	-	1	-	6(6%)
51-60	-	1	-	-	-	1(1%)
61-70	-	1	-	-	-	1(1%)
Total	34(34%)	56(56%)	4(4%)	5(5%)	1(1%)	100(100%)

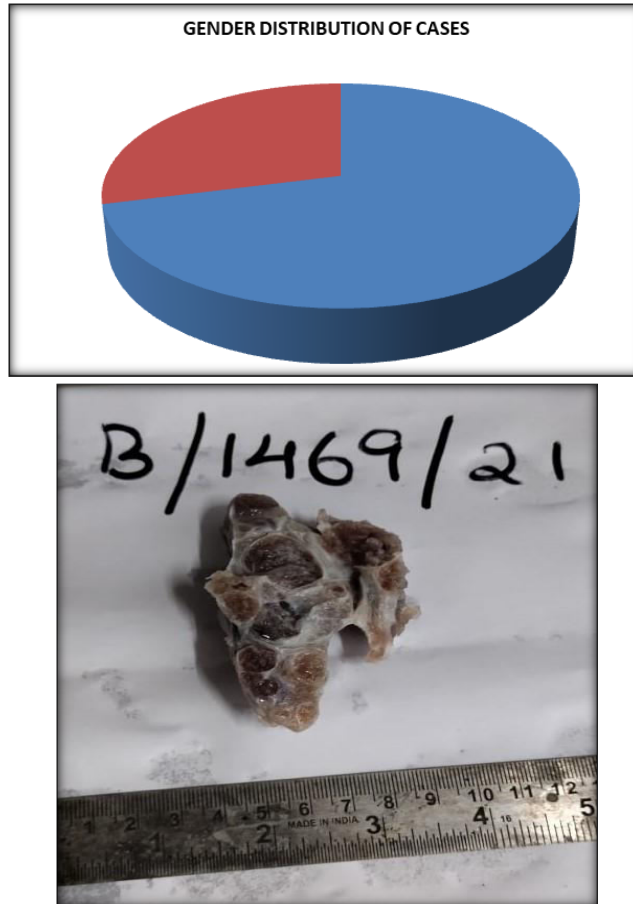


Figure 1: Gross morphology of specimen of multinodular goitre showing multiple nodules on cut surface

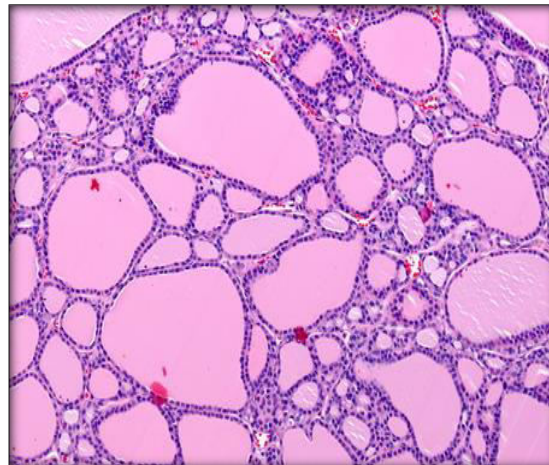


Figure 2: H&E stained section of a case of nodular goitre showing variable sized follicles lined by cuboidal epithelium

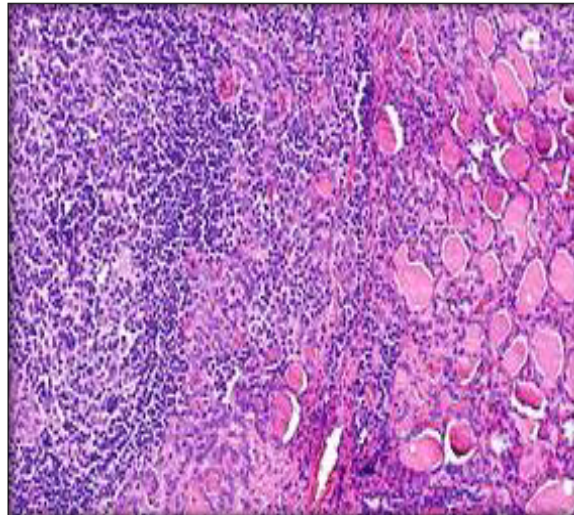


Figure 3: H&E stained section of a case of Lymphocytic thyroiditis showing dense lymphocytic infiltration with follicle formation

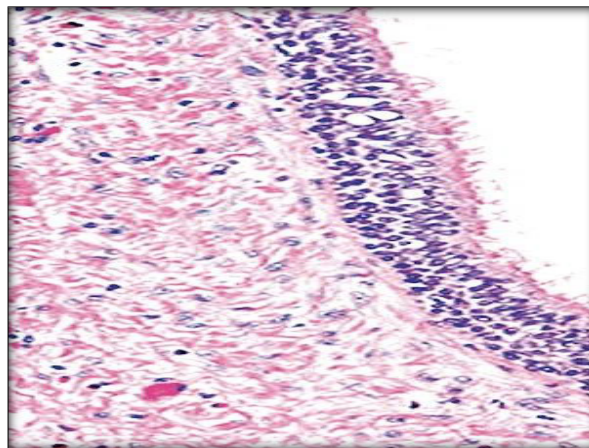


Figure 4: H&E stained section of single case of thyroglossal cyst with respiratory type lining epithelium

DISCUSSION

Thyroid is one of the vital endocrine organ as many of the significant homeostatic processes are regulated by the hormones secreted by it and thyroid disorders form the commonest endocrine disorders, as any change in thyroid may easily be recognised due to its superficial location and becomes a matter of apprehension for the patient even when the goitrous enlargement is minimal or for a small nodule. Non-neoplastic lesions of thyroid outnumber the neoplastic lesions. Hence the present study was undertaken to observe the spectrum of these lesions in the institute.

In the present study, a total of 100 cases of non-neoplastic thyroid lesions were taken. There is a female preponderance in the study with a female to male ratio of 2.4:1 which is in concordance with study by Kumar C H and Gayatri M⁷ and study by Rajagopal JA, Patil SB, Mane MA,^[8] with F:M ratio of 2.5:1. The peak age incidence of non-neoplastic thyroid lesions in this study was observed to be third and fourth decades of life with similar findings in the studies done by Kumar C H and Gayatri M, Sengupta et al,^[9] and Rajagopal JA.

The commonest non-neoplastic lesion encountered in the study was nodular goitre accounting for about more than half of cases (56%). Similar results were found in the study by Rajagopal JA et al.^[8] M.Padmavathi,^[10] and Urmiladevi P et al.^[11] Among some other studies, colloid goitre is the frequent non-neoplastic thyroid lesion but it is the second most common lesion

in the present study. Among the inflammatory lesions of thyroid, Hashimoto's thyroiditis is the commonly encountered lesion followed by lymphocytic thyroiditis with all cases showing female predominance. This is in concordance with the study by Kumar C H and Gayatri M,^[7] and K.F. Magdalene et al.^[12] The present study encountered only a single case of thyroglossal cyst in a young boy who is 8years old and cyst was lined by respiratory type of epithelium and fibrocollagenous wall without any thyroid follicles.

CONCLUSION

The present study was conducted to evaluate the spectrum of non-neoplastic thyroid lesions in the institute. Commonest lesion encountered in the study was nodular goitre followed by colloid goitre and among the inflammatory lesions, Hashimotos thyroiditis is the commonest. A single case of thyroglossal duct cyst was observed in the study. Histopathological examination of excised thyroid specimen is the gold standard for definitive diagnosis and to rule out malignancy in case of suspicion, though FNAC is helpful.

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