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Study of Distribution of Thyroid Lesions in a Hospital

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Abstract: ***Background:*** ***To study the various histomorphological types of neoplastic and non-neoplastic lesions of the thyroid and to correlate these with respect to age and sex.*** ***Methods:*** ***Thyroid specimens received at the pathology Department of Sri Devaraj Urs Medical College, Kolar during the period January 2000 to December 2004 were processed. A detailed histomorphological study was done. The histomosphological type was correlated with the age and sex .*** ***Results:*** ***Total one hundred twenty cases of thyroid were studied. Most common age group affected was between 3rd and 5th decade. Females were predominantly affected.*** ***Conclusion:*** ***Total one hundred twenty thyroid lesions were studied in the present study out of this 57 cases were non-neoplastic and neoplastic were 63 cases. Total thyroid malignancies reported by other studies range from 14% to 31.91%. Papillary carcinoma classic variant found was 9.16%, follicular variant of papillary carcinoma reported was 5.83%. Papillary carcinoma reported by other studies range from 7.44% to 61.1%. Medullary carcinoma constituted 5.16%. Other study reported as 6.5% of medullary carcinomas. Majority patients were between 3rd and 6th decade with female preponderence. Follicular adenoma was the most common pathological lesion. Commonest malignancy was the papillary carcinoma.***

Keywords: Thyroid lesions, Histomorphology, Goitres, Non-Neoplastic Lesions, Neoplastic lesions

1. Introduction

Thyroid gland is the endocrine glands in having a wide spectrum of diseases ranging from functional enlargements immunologically mediated enlargements to the neoplastic lesions. These enlargements may be diffuse or nodular at times causing obvious physiological changes. Occasionally a patient may present with obvious metastatic disease with an undetectable primary. Thyroid gland lesions appear to be common in and around the city of Kolar. So the classification of various histomorphological types of tumor is important to categorize the lesion into non-neoplastic and neoplastic lesion of thyroid. We classified according to the WHO published its second edition on the histological classification of thyroid tumors in 1988[1]. It will be of great value for clinicians for further therapy and prognosis.

2. Materials and Methods

The material for the present study comprised of specimens received at Department of Pathology, Sri Devraj Urs Medical College, Tamaka, Kolar, between January 2000 and December 2004. The specimen was fixed in 10% formalin for 24-48 hour. Large specimens were cut serially before fixing. After fixation, representative areas were selected for paraffin embedding. In case of encapsulated lesions, adequate representation from tumour capsule – thyroid interface was given. Section were cut at 4-5 microns thick and stained with heamatoxyl in and eosin and studied. Special stains like methyl violet, vanGieson, masson trichrome and congo red were performed for necessary cases. Stained histopathology slides were studied in detail. All details of the case consisting of clinical history, external examination, gross features, microscopic features and final diagnosis.

3. Results

The present study is undertaken for a period of five years between January 2000 and December 2004. Retrospective study for three years from January 2000 to December 2002 (48cases). Prospective study for two years from January 2003 to December 2004 (75cases). A total number of 8,638 specimens were received during this period. Of these 120 cases were thyroid lesions and included in this study.

Table 1: Age and Sex distribution

Sl.No	*Age*	*No.of. Cases*	*Male*	*Female*
1	<10	1	-	1
2	10-19	4	-	4
3	20-29	33	4	29
4	30-39	40	2	38
5	40-49	21	5	16
6	50-59	11	1	10
7	60-69	9	-	9
8	70-79	1	-	1
	Total	120	12(10%)	108(90%)

Table 2: Morphologic types of thyroid lesions

Sl.No	*Morphologic type*	*No.of.Cases*	*%*
1	Non - Neoplastic lesions	57	47.5
2	Neoplastic lesions	63	52.5

Table 3: Histomorphologic types of non-neoplastic lesions of thyroid

Sl.No	*Types*	*No.of.Cases*	*%*
1	Thyroglossal duct cyst	1	0.83
2	Sub- acute thyroiditis	1	0.83
3	Hashimoto thyroiditis	11	9.16
4	Colloid goiter	7	5.83
5	Multinodular goiter	35	29.16
6	Diffuse toxic goiter	2	1.66
	Total	57	47.5

Table 4: Histomorphologic types of neoplastic lesions

S. No	*Types*	*No of cases*	*%*
1	Follicular adenoma	43	36
2	Atypical adenoma	1	1
3	Papillary.Ca.Classic	11	9
4	Papillary .Ca.Follicular	7	6
5	Medullary Carcinoma.	1	1
	Total	63	(52.5%)

4. Discussion

Total one hundred twenty thyroid lesions were studied in the present study. Of this 57 cases were non– neoplastic and 63 cases were neoplastic consisting of 47.5% and 52.5% respectively. A study conducted by Sankaran[9] reviewed 127 cases and found the percentage of non neoplastic lesions as 85.8% and neoplastic as 14.2%

Non-neoplastic lesions, in this study there was one case of thyoglossal cyst (0.83%) . One case of sub-acute thyroid it is was reported (0.83%) in a 38 years female patient. A study conducted by Arora and Gupta [6,10] reviewed 94 cases and found the percentage of sub-acute thyroditis was 4.25% (4 cases). Another study conducted by Meachim and Young[8] reviewed 1285 cases and found the percentage of sub acute thyroditis was 0.15% (2 cases).Hashimoto thyroditis accounted for 11 cases (9.16%) . A study conducted by Arora and Gupta [2,6,10] found Hashimoto thyroditis were 4.25% (4 cases) out of 94 cases studied . Another study conducted by Meachim and Young[8] reviewed 1285 cases and found the percentage of Hashimoto thyroditis was 5.68% (73 cases).Total all types of the thyroditis reported were 12 cases (10%). Total all types of thyroditis reported in the study conducted by Arora and Gupta[6,10] was 9.57% (9 cases) out of 94 cases. In another study conducted by Meachim and Young[6,8] total all types of thyroditis was 5.99% (77 cases) out of 1285 cases studied. Colliod goiter formed 5.83% (7 cases). Maximum cases were in the 3rd to 5th decade of life and one male case was reported. There was a wide range in the incidence of the colloid goiter reported by several authors. In a study conducted by Sankaran[6, 9] the incidence of colloid goiter was 36%. The average age being 33 years with female preponderance. In another study conducted by Arora and Gupta[10] the incidence of colloid goiter was 15.95%. In the study conducted by Meachim and Young[8] the incidence of colloid goiter was 49.18%. Mulitnodular goiter was the most common non-neoplastic lesion in this study. There were 35 cases (29.16%) with peak age incidence seen between 3rd and 5th decade of life and was more common in females. In a study conducted by Sankaran[6, 9] the incidence of multinodular goiter was 18% and average age incidence was 35 years. In the study conducted by Arora and Gupta[10] the incidence of multinodular goiter was 3.19%. Diffuse toxic goiter accounted to 1.66% (2 cases). Both were female patients. The study by Arora and Gupta[5, 10] reported an incidence of 2.12%. Compared to the overall incidence of goiter (all types) in this study (36.65%). Kalpatrick et al[6, 11] reported the overall incidence as 39.4 %, predominantly in the 20-49 years age group.

Neoplastic lesions**,** benign and malignant tumors together formed 63 cases (52.5%). Benign lesions found were in 36.66% (44 cases). Of this follicular adenoma was reported in 35.83 %(43 cases). Follicular adenoma was the most common lesion in this study and it was the most common neoplastic lesion. Maximum incidence was seen between 3rd and 5th decade of life with female preponderence. Five male patients were reported. In a study conducted by Arora and Gupta[1, 3,7,10] represent 36.17% of follicular adenoma out of 94 cases studies. In another study conducted by Thomas[12] follicular adenoma represented 21.3% out of 121 cases studied. A typical adenoma was found in one case (0.83%). This was female patient aged 27 years. Malignant tumors (19 cases) constituted 15.63% .In contrast, Sankaran[9] reported an incidence of 14%. Arora and Gutpa[7, 10] reported an incidence of 31.91% and Thomas[3, 5, 12] reported an incidence of 19%. Papillary carcinoma classic variant constituted 9.16% (11 cases). Most cases were aged 40 years and below. Two youngest patients were 22 years old females. The oldest patient was a 65 years female with lymph node metastasis. There were only three male patients.

5. Conclusion

Majority of the patients were between 3rd and 6th decade. Females were predominantly affected. The commonest lesion was follicular adenoma followed by multinodular goiter. Most common malignant lesion was papillary carcinoma. The present study was undertaken to review the recent literature in recognizing the histomorphologic criteria for the thyroid lesions and to correlate the histomorphological type of thyroid lesion with age and sex of patient in and around Kolar.

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