ORIGINAL RESEARCH PAPER

General Surgery

A STUDY ON MALIGNANT AND BENIGN NEOPLASMS OF THYROID GLAND IN A GENERAL SURGERY UNIT OF A TERTIARY CARE CENTER.

KEY WORDS: Thyroid; Neoplastic Lesion; Papillary Carcinoma, Follicular Adenoma.

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ABSTRACT

Background- Thyroid Neoplasms are classified into Benign and Malignant. Follicular adenoma is a common Benign Neoplasm of thyroid. Malignant Thyroid neoplasms include follicular carcinoma, papillary carcinoma, Medullary carcinoma & Anaplastic carcinoma. The present study is carried out to study the Spectrum of Neoplastic Thyroid diseases in our surgical unit.

Material and methods- This study is carried out in Department of General Surgery & Department of Pathology, Osmania Medical College, Hyderabad, Telangana, India, from 2015 to 2017 i.e., for a period of 2 years.

Results-.A Total of 47 Neoplastic cases were diagnosed histopathologically in our study. Out of 47 Neoplastic cases, 22 are Benign and 25 are Malignant.38 are Females and 9 are Males giving F: M ratio of 4.22: 1. The age range is 17 years to 80 years with mean age of 40.93 years and the relative peak age of incidence is seen in 21-40 years age group. Papillary carcinoma is 46.83% of all Neoplastic lesions where as Follicular adenoma is 38.3% of all Neoplasms.

Conclusion- Benign and Malignant thyroid lesions are common in Females. Follicular adenoma is the commonest Benign neoplasm of thyroid and Papillary carcinoma is the commonest Malignancy of thyroid. Males with thyroid neoplasms present at a later age than females.

1. INTRODUCTION

Thyroid Neoplasms are classified into Benign and Malignant. Follicular adenoma is a common Benign Neoplasm of thyroid. Other Benign neoplasms include Hurthle cell adenoma & Hyalinizing Trabecular adenoma. Malignant Thyroid neoplasms include Follicular carcinoma, Papillary carcinoma, Medullary carcinoma & Anaplastic carcinoma. Other rare Malignant thyroid neoplasms include Lymphoma, Hurthle cell carcinoma, Sarcomas and Secondaries. The present study is carried out to study the Spectrum of Benign and Malignant Neoplasms of Thyroid in our surgical unit.

2. MATERIALS AND METHODS.

This study is carried out in Department of General Surgery & Department of Pathology, Osmania Medical College, Hyderabad, Telangana, India, from 2015 to 2017 i.e., for a period of 2 years. The Thyroidectomy specimens from the Department of General Surgery are sent to the Department of Pathology of our institute where they get processed and the final Histopathological impression will be given by experienced Pathologists of our institute. Those Histopathological reports suggesting Neoplastic Benign & Malignant lesions are taken for our study. The histopathological data thus obtained is analysed.

3. RESULTS

A total of 167 thyroid specimens were sent from the Department of Surgery to the Department of Pathology in a period of 2 years. Out of this, 47 (28.15%) specimens are found to be Neoplastic lesions.

3.1) Disease Incidence

Total 47 neoplastic lesions are reported in our study. Benign lesions are 46.8% (n=22) and malignant lesions comprise 53.2% (n=25) of all neoplastic lesions in our study. Out of 22 Benign cases 18 (38.3%) are Follicular Adenomas, 3 (6.38%) are Hurthle cell adenomas and 1 (2.12%) case of Hyalinizing trabecular adenoma. Out of 25 Malignant lesions, 22 (46.83%) are Papillary carcinomas, 2 (4.25%) are Anaplastic carcinomas and 1 (2.12%) case of Medullary carcinoma. There is no Follicular carcinoma diagnosed in our study. (Table-1)

TABLE-1 showing the proportion of Neoplastic lesions.

NEOPLASTIC LESIONS	No. OF CASES(%)
BENIGN	22(46.8%)
FOLLICULAR ADENOMA	18(38.3%)
HURTHLE CELL ADENOMA	3(6.38%)
HYALINIZING TRABECULAR ADENOMA	1(2.12%)
MALIGNANT	25(53.2%)
FOLLICULAR CARCINOMA	0
PAPILLARY CARCINOMA	22(46.83%)
ANAPLASTIC CARCINOMA	2(4.25%)
MEDULLARY CARCINOMA	1(2.12%)
TOTAL	47(100%)

3.2) Age & Sex Incidence

Out of 47 cases, 9 (19.14%) are males and 38 (80.86%) are females with age range 17-80 years and mean age of 40.93 years giving F: M ratio of 4.22:1. Females age ranged 18-80 years with mean age of 40.15 years and males age ranged from 17-70 years with mean age of 44.22 years. More than half (53.3%) of the cases belong to age group of 21-40 years. Younger (<20years) age group constitute 6.4% older >60

years age group constitute 10.6%. In males most frequently (66.66%) cases are seen in the age group of 31-50 years (n=6) whereas in females the common age group for Neoplastic lesions is 21-40 years (57.9%, n=22).(Table-2)

TABLE-2 showing the sex incidence and F: M ratio in all Neoplastic lesions.

S. No	NEOPLASTIC	MALES	FEMALES	TOTAL	F: M RATIO
	BENIGN	3(13.63%)	19(86.37%)	22(100%)	6.33:1
1	FOLLICULAR.ADENOMA	1(5.55%)	17(94.45%)	18(100%)	17:1
2	HURTHLE CELL ADENOMA	1(33.33%)	2(66.67%)	3(100%)	2:1
3	HYALINIZING TRABECULAR ADENOMA	1(100%)	-	1(100%)	ALL MALES
	MALIGNANT	6(24%)	19(76%)	25(100%)	3.16:1
1	PAPILLARY CARCINOMA	5(22.72%)	17(77.28%)	22(100%)	3.4:1
2	MEDULLARY CARCINOMA	1(100%)	-	1(100%)	ALL MALES
3	ANAPLASTIC CARCINOMA	-	2(100%)	2(100%)	ALL FEMALES
	TOTAL	9(19.14%)	38(80.86%)	47(100%)	4.22:1

3.3) Individual Neoplastic lesions

3.3.1) Benign Neoplastic Lesions

In this study, 22 cases are reported to be benign. They constitute 46.8% of all the neoplastic lesions in our study. Out of 22 cases 3 (13.63%) are males and 19 (86.37% are females) with age ranging from 17-80 years, mean age of 38.4 years giving F: M ratio of 6.33:1. Males age ranged from 17 – 47 years with mean age of 35.33 years, and females age ranged from 22-80 years with mean age of 38.9 years. 2/3rd of males belong to 41-50 years age group whereas 68.41% of females belong to 21-40 years age group.

3.3.1a) Follicular Adenoma

In this study, 18 cases of follicular adenoma were reported which constitute 38.3% of all neoplastic lesions and 81.81% of benign neoplastic lesions.

Age & Sex incidence

Out of 18 cases 1(5.55%) is male and remaining 17 (94.45%) are females giving F: M ratio of 17:1. The age of these patients ranged from 17 – 80 years with mean age of 36.72 years. The only male patient of 17 years age is the youngest of all patients.

Females age ranged from 22 – 80 years with mean age of 37.88 years. 70.59% (n=12) of females belong to age group of 21 – 40 years. Only one case is reported in younger age group <20years and the patient is a male of 17 years and two cases are reported in older age group >60 years.

3.3.1b) Hurthle Cell Adenoma

There are 3 cases of hurthle cell adenoma in our study which constitute 6.38% of neoplastic lesions and 13.64% of benign neoplastic lesions.

Out of these 3 cases, 1 (33.33%) is a male aged 42 years and 2 (66.67%) are females aged 40 and 55 years giving F: M ratio of 2:1. The mean age is 45.66 years.

3.3.1c) Hyalinizing Trabecular Adenoma

There is only a single case of hyalinizing trabecular adenoma reported in our study constituting 2.12% of all neoplastic lesions and 4.55% of benign neoplastic lesions. The patient is a male of 47 years.

3.3.2) Malignant Lesions

Total 25 cases are reported in our study comprising 53.2% of all neoplastic lesions. Out of 25 cases, 6 (24%) are males and 19(76%) are females giving F: M ratio of 3.16:1. 83.33% (n=5) & 89.47% (n=17) of males and females respectively diagnosed with malignant lesions have PTC. Age of these patients with malignant lesions ranged from 18 – 70 years with mean age of 43.16 years. Males age ranged from 35 – 70 years with mean age of 48.66 years and females age ranged from 18– 65 years with mean age of 41.47 years.

3.3.2a) Papillary Thyroid Carcinoma

PTC is the most frequent neoplastic as well as malignant lesion in our study. There are total 22 cases of PTC in our study which comprise 46.83% of all neoplastic lesions and 88% of all malignant lesions.

Age & sex incidence

Out of 22 cases 5 (22.72%) are male and 17 (77.28%) are females giving F:M ratio of 3.4:1 and age ranged from 18-70 years. Males age ranged from 35 - 70 years where as females age ranged from 18 - 65 years. The commonest age group is 31- 40 years 54.54% (n=12). In males middle & older age groups (35,40,47,65,70 years) are effected whereas in females 59.09% (n=13) of the cases are below 40 years of age. The mean age for PTC is 42.36 years. The mean age of PTC in males and females is 51.4 and 39.7 years respectively.

3.3.2b) Medullary Thyroid Carcinoma

A single case of MTC is reported in our study which constitute 2.12% of neoplastic lesions and 4% of malignant lesions. The patient is a male and of 35 years age and underwent total thyroidectomy with lymph node dissection.

3.3.2c) Anaplastic Thyroid Carcinoma

2 cases of Anaplastic carcinoma is reported in our study which constitute 4.25% of all neoplastic lesions and 8% of all malignant lesions. The patients are of 52 and 60 years age.

4. DISCUSSION

In our study 28.15% thyroid surgeries are performed on Neoplastic lesions. Malignant neoplasms are slightly more than Benign Neoplasms (53.2% Vs 46.8%). Similar observation is seen in studies done by Ranjan et al., Bapat et al., Maqsood et al., & Manuel et al.,(1-4.). Studies done by Dash M et al., Venkatesh et al., Raju et al., & Kabir et al., (5- 8) show Benign neoplasm outnumbering Malignant neoplasm, in contrast, our study showed that Malignant neoplasms are slightly more than Benign neoplasm.

In our study, most common thyroid neoplasm is Papillary carcinoma which comprise 46.83% of all thyroid neoplasms. Most of the studies doesn't show similar observation. The commonest Thyroid neoplasm in studies done by Rajesh et al., Parikh et al., Tsegaye et al., and Champa et al., is Follicular adenoma (9-12). In contrast, studies done by Rupam et al., Joseph et al., Abdul kader et al., & Salama et al show Papillary carcinoma as the most common neoplasm of thyroid (13- 16).

In our study, females predominate males in number. The F: M ratio is 4.22: 1 which means out of 6 cases of thyroid neoplasm, 5 (4.22 is taken as 5) will be females and 1 case will be male. Thyroid neoplasm has a wide age range of 17 to 80 years which says that all ages are affected with thyroid neoplasm. Middle age males are commonly affected with thyroid neoplasm whereas young females are affected with thyroid neoplasms. The mean age of females is 40 years and for males it is 44 years.

In benign lesions, Follicular adenoma is the commonest condition in our study and also in all the studies taken for reference. Hurthle cell adenoma is seen in 3 cases (6.38%) of our study. In studies done by Ranjan et al., Smita et al., Ashwini et al., & Rahman et al., Hurthle cell adenoma is detected (1, 17-19). Hyalinizing Trabecular adenoma is not seen in studies done by Mittal et al., & Ghafoor et al.,(20, 21)) but is diagnosed in studies done by Hathila et al., & Gupta et al., (22, 23,)

In our study, as well as in other studies (9,14,17) Papillary carcinoma is the commonest Thyroid Malignancy. There is no single case of Follicular carcinoma diagnosed in our study. But, most of the studies (9, 17, 20, 24, 25) have Follicular carcinoma diagnosed. Even in studies done by Hathila et al., & Darwish et al.,(22,26) Follicular carcinoma is not diagnosed. 4 % of the Neoplastic cases are Medullary carcinomas in our study which is similar to study done by Bukhari et al.,(27). 8 % are Anaplastic carcinomas similar to the observation in a study done by Rajesh et al.,(9). Other malignant conditions like Hurthle cell carcinoma, lymphoma, sarcomas, and secondaries are not diagnosed in our study.

5. CONCLUSION

Benign and Malignant thyroid lesions are common in Females. Follicular adenoma is the commonest Benign neoplasm of thyroid and Papillary carcinoma is the commonest Malignancy of thyroid. Males with thyroid neoplasms present at a later age than females.

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