

Histopathological Pattern of Thyroid Lesions

SADIA ALAM¹, AMAN UR REHMAN², ATIKA MASOOD³, IHTESHAMUD DIN QURESHI³

ABSTRACT

Background: Thyroid lesions are common in Pakistan and cause major concern because of possibility of malignancy in neoplastic lesions in young patients. Histopathological studies of thyroid swellings reveal different pattern of lesions in different regions of the world.

Aim: To document the frequency of histopathological pattern of thyroid lesions presented to pathology department at Akhter Saeed Medical and Dental College, Lahore from year 20012-2017.

Method: All thyroidectomy specimens presented to pathology departments at AMDC (2012-2017) were retrospectively reviewed and categorized according to their histological findings.

Results: Sixty seven cases were enrolled in our study. The age of the patients ranged from 17 to 75 years. Male to female ratio was 1:4.5. Non- neoplastic cases were (86%) and neoplastic cases were (13%). Benign category of the neoplastic group includes 5 cases (7.5% of all cases, and 55%of neoplastic cases) and the malignant category includes 4cases, representing 6 % of all studied cases and 45% of the neoplastic category. Three cases (75 % of malignant) were of papillary carcinoma and one case was of follicular carcinoma (25 % of the malignant cases).

Conclusion: Among the varied histomorphological spectrum of surgical specimens of thyroid, the most frequent lesion is multinodular goiter. Follicular adenoma is the commonest benign lesion while the most frequent thyroid cancer is papillary carcinoma.

Keywords: Lesions, thyroid, neoplastic

INTRODUCTION

Nodular Goiter is the most common clinical presentation of thyroid disorders occurring in 3% to 5% of the population. These are endemic in areas with low levels of iodine in water¹. Thyroid swellings are more frequent in females. Cold thyroid nodule is considered commonest risk factor for the development of thyroid cancer².

Most of the thyroid nodules are due to cystic change in nodular goiter or are colloid cysts while a few of the solitary nodules are neoplastic³. From a clinical point, solitary thyroid nodules cause major concern because of 5% risk of malignancy in them. Although thyroid nodules are common, but majority of nodules are benign. Adenoma is the commonest benign tumor of the thyroid⁴. Thyroid cancers are relatively rare, constituting 1% of all the cancers worldwide but are commonest endocrine tumours⁴.

In routine, various modalities like thyroid scan, thyroid function tests FNAC and histopathology are used in Pakistan for evaluation of thyroid nodules. FNAC is inexpensive, sensitive and accurate procedure for triaging patients into operative and non operative category but histopathology of thyroidectomy specimen is gold standard⁵.

Thyroid lesions can present a wide range of spectrum ranging from colloid goiter to anaplastic carcinoma. This variation in incidence and histopathological pattern of thyroid lesions in different geographical areas depends on variety of factors⁶.

MATERIALS AND METHODS

This was a retrospective cross sectional study of thyroidectomy specimens conducted at the department of Pathology, Akhter Saeed Medical College &Hospital Lahore, during the period January2012 to June 2017.

A total of 67thyroidectomy specimens (complete or partial) were selected for histopathological evaluation. Data of the patients regarding age, sex, clinical status (hypothyroid, hyperthyroid or euthyroid), other investigations like FNACs, thyroid scan, ultrasound reports and operation findings were obtained.

RESULTS

The total of 67 cases were studied (table 1). There were 12(18%) males and 55(82%) females with male to female ratio1:4.5. The age range was 17 to 75 years with a mean age of 35 years. The cases were divided into two categories ;Non- neoplastic lesions 58(86.5%) and Neoplastic lesions 9(13.5%).

The largest group of non-neoplastic category was that of "Multinodular Goiter" (MNG), it involved 41 cases (61% of all the specimens and 70% of non-neoplastic cases)

The second group of the non-neoplastic category included hyperplastic colloid nodules 13 cases, 19% of all the specimens and 22.5% of Non- neoplastic cases, other non-neoplastic cases include parathyroid hyperplasia (2), thyroglossal cyst (1) and thyroiditis (1) which account 6.8% of non-neoplastic cases.

The second group of the examined cases was that of neoplastic nature. The benign category represented by "Adenomas" included 5 case (7.4% of all cases, and 55.5% of neoplastic cases). Among benign lesion five follicular adenomas were reported. The reported cases were of females and no male case was reported. The age of the cases ranged from 25-72 with mean age of 40 years.

The malignant cases were 4, representing 6% of all studied cases and 45% of the neoplastic category. Three

¹Senior Demonstrator at Pathology Department Akhter Saeed Medical College

²Demonstrator at Pathology Department Akhter Saeed Medical College.

³Associate Professor at Pathology Department Akhter Saeed Medical College.

⁴Professor of Pathology at Akhter Saeed Medical College.

Correspondence to Dr. Atika Masood Email: dratika@hotmail.com
Cell: 0334-9071762

cases (75%) were papillary carcinomas and one case (25%) was follicular carcinoma. The age range of malignant neoplasm reported was 20-40 year with average age of 33. The male to female ratio was 1:3.

Table 1: Different patterns thyroid diseases (n=67)

Category	n
Non-neoplastic	58(86.5%)
Multinodular Goiter	41(61%)
Hyperplastic colloid nodule	13(19%)
Thyroglossal cyst	2(3%)
Parathyroid hyperplasia	1(1.5%)
Thyroiditis	1(1.5%)
Neoplastic	9(13.5%)
Follicular adnoma	5(7.5%)
Papillary Carcinoma	3(4.4%)
Follicular Carcinoma	1(1.5%)

Table 2: Ineoplastic Cases

Benign Cases (n=5)		Malignant Cases (n=4)	
Follicular adenoma	5(55%)	Papillary carcinoma	3(33%)
		Follicular carcinoma	1(11%)

DISCUSSION

Thyroid diseases are one of the frequent endocrine disorder affecting the population of Pakistan. Thyroid swellings range from non-neoplastic to neoplastic lesions. The incidence of both benign and malignant lesions in thyroidectomy specimens varies widely in different areas of the world. The prevalence and pattern of different thyroid disorders depend on various factors including sex, age, iodine deficiency, radiation ethnic and geographical patterns⁴.

The age range of the patients in our study was 17 to 75 years with a mean age of 35 years. These findings are similar with the results of other authors. Previous studies showed thyroid lesions commonly affects females^{3,5}. Same are the findings in this study with 82 % females with 1:4.5 male to female ratio.

In our study, non-neoplastic diseases are more frequent than neoplastic. The overall frequency of non-neoplastic lesions in this study was 86.5% as compared to 13.5% of neoplastic category. The findings of our study are consistent with all the recent studies on thyroidectomy specimen, showing that non-neoplastic lesions are more frequent than the neoplastic lesions^{5,6}.

Similarly, in the non-neoplastic category, our study showed most of the cases (61%) were of multinodular goiter. Recent studies from Pakistan also reported the most common benign lesions are colloid and multinodular goiters (6,8). The other histological thyroid disease found included hyperplastic colloid nodules, thyroglossal cysts and thyroiditis. The low frequency and the female sex predilection over males in other non-neoplastic lesions such as thyroiditis were also seen by other authors^{5,6}.

The frequency of follicular adenoma, reported in literature, is more than the frequency of malignancy^{8,9}. In

comparison within the neoplastic lesions, benign lesions (Follicular adenomas) predominated (55%) over malignant (45%) in our study^{8,9}.

Papillary carcinoma was reported in the literature to be most common histologic subtype of the thyroid cancer followed by follicular carcinoma^{5,10}. In this study, the most common carcinoma is papillary carcinoma (33%) and second most carcinoma is Follicular carcinoma (11%). Recently, a study on 261 malignant cases of thyroid showed 75% of the cases were of papillary carcinoma whereas 13.4% cases were of follicular carcinoma. The histological pattern and frequencies of different thyroid lesions in our study are comparable with the international and recent thyroid studies¹¹.

CONCLUSION

Thus in conclusion, the histological pattern of thyroid diseases in Pakistan is similar to that seen around the world with multinodular goiter the most common benign lesion and papillary carcinoma the frequent malignant lesion.

REFERENCES

- Gandolfi PP, Frisina A, Raffa M et al. The incidence of thyroid carcinoma in multinodular goiter: retrospective analysis. *Acta Biomed* 2004 August;75(2):114-7.
- Faquin WC. The thyroid gland: recurring problems in histologic and cytologic evaluation. *Arch Pathol Lab Med* 2008 April;132(4):622-32.
- Rahman MA, Biswas MA, Siddika ST, et al (2013). Histomorphological pattern of thyroid lesions. *Dinajpur Med Col J*, 6, 134-40
- Igissinov N, Tereshkevich D, Moore MA, et al (2011). Age characteristics of incidences of prevalent cancers in the Aral Sea area of Kazakhstan. *Asian Pac J Cancer Prev*, 12, 2295-7.
- Galofre JC, Lomvardlias S, Davies TF. Evaluation and treatment of thyroid nodules: a clinical guide. *Mt Sinai J Med*. 2008;75:299-311.
- Abdulkareem KF. Surgical pathology of thyroid biopsies: A prospective study. *Thi-Qar Medical Journal (TQMJ)* 2010; 4(2): 47-52.
- Fahim A, Qureshi A, Alvi H, Azmi MA (2012). Clinical Presentation and Evaluation of Histopathological Patterns of Hospital-based Frequency of Thyroidectomy Biopsies. *Medical Forum*, 9, 1-6.
- Vincent G (2008). Thyroidectomy over a quarter of a century in the Belgian Ardennes: a retrospective study of 1207 patients. *ActaChirBelg*, 108, 542-7.
- Hussain N, Anwar M, Nadia N, Ali Z (2005). Pattern of surgically treated thyroid disease in Karachi. *Biomedica*, 21, 18-20.
- ALBouq Y, Fazili FM, Gaffar HA. The current pattern of surgically treated thyroid diseases in the Medinah region of Saudi Arabia. *JK Practitioner* 2006; 13(1): 9-14.
- Islam MS, Siddiquee BH, Akhtar N, Salam KS, Aktaruzzaman M. Comparative study of FNAC and histopathology in the diagnosis of thyroid swelling. *Bangladesh J Otorhinolaryngol* 2010; 16(1): 35-43.
- Chukudebelu O, Dias A, Timon C (2012). Changing trends in thyroidectomy. *Ir Med J*, 105, 167-9.