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Original Research Paper

Pathology

A STUDY ON HISTOPATHOLOGICAL EVALUATION OF THYROID LESIONS

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ABSTRACT Histopathological evaluation of thyroid lesions is essential for accurate diagnosis and appropriate patient management. **Material And Methods:** This retrospective observational study was conducted in the Histopathology Department of Smt. Shardaben Chimanlal Lalbhai General Hospital from May 2022 to October 2024, including 58 thyroid specimens. **Results:** All samples were processed using routine H&E staining, and diagnoses were made on microscopic examination. The patient age ranged from 22 to 66 years, with a mean of 42.3 years, and a marked female predominance (M: F = 1:7). Non-neoplastic lesions were more common than neoplastic lesions. Among neoplasms, benign tumors prevailed, with follicular adenoma being the most frequent. Papillary thyroid carcinoma was the predominant malignancy. **Conclusion:** The study reinforces histopathology as the gold standard for diagnosing and categorizing thyroid lesions due to its definitive diagnostic accuracy.

KEYWORDS : Thyroid neoplasm, Benign and malignant thyroid lesions, Follicular adenoma, Papillary thyroid carcinoma, Follicular carcinoma

INTRODUCTION

Histopathological examination of Thyroid plays an important role in making a correct and accurate diagnosis of various lesions of thyroid, which has a profound impact on the further management of the patient.

Differentiation of follicular lesions like follicular adenoma and follicular carcinoma requires histopathological examination to establish a definitive diagnosis, further management and prognosis of the patient1.

Although tumors of the thyroid gland account for only 1% of the overall human cancer burden, they represent the most common malignancies of the endocrine system and pose a significant challenge to pathologists, surgeons and oncologists[2].

AIMS & OBJECTIVES

- To study the various thyroid lesions and to evaluate the spectrum of histopathological patterns.
- To distribute various thyroid lesions according to age and sex.

MATERIAL AND METHODS

The retrospective and observational study was carried out at the Histopathology section of Pathology Department, Smt. Shardaben Chimanlal Lalbhai General Hospital, Smt. NHL Municipal Medical College, Ahmedabad.

Duration Period: May 2022 to October 2024.

Sample Size: 58

Inclusion Criteria:
All the thyroid tissue specimens like Tru-cut biopsy. Lobectomy, Hemi thyroidectomy. Subtotal thyroidectomy and Total Thyroidectomy were included during study period.

Exclusion Criteria:
Inadequate biopsy and autolysed specimens were excluded from study.

RESULT AND DISCUSSION

Type of Thyroid lesion		Diagnosis	No. Of cases	Percentage (%)
Non Neoplastic Lesions [n=33]	Non Inflammatory (Hyperplasia) [n=30]	Colloid Goiter	12	20.68
		Nodular Goiter	17	29.31
		Diffuse toxic Goiter	1	1.72
	Inflammatory [n=3]	Hashimoto Thyroiditis	2	3.45
		Lymphocytic Thyroiditis	1	1.72
Neoplastic Lesions [n=25]	Benign [n=12]	Follicular adenoma	10	17.2
		Oncocytic adenoma	2	3.45
	Low risk [n=4]	NIFTP	3	5.17
		Hyalinizing Trabecular Tumor	1	1.72
	Malignant [n=9]	Papillary carcinoma	7	12.1
		Lymphoma	1	1.72
		Oncocytic carcinoma	1	1.72
Total			58	100

Classification of thyroid neoplasms:

WHO classification scheme of thyroid neoplasms, 5th edition (2022)

Developmental abnormalities

1. Thyroglossal duct cyst
2. Other congenital thyroid abnormalities

Follicular cell–derived neoplasms

1. Benign tumors
   a. Thyroid follicular nodular disease
   b. Follicular adenoma
   c. Follicular adenoma with papillary architecture
   d. Oncocytic adenoma of the thyroid
2. Low-risk neoplasms
   a. Non-invasive follicular thyroid neoplasm with papillary-like nuclear features
   b. Thyroid tumors of uncertain malignant potential
   c. Hyalinizing trabecular tumor
3. Malignant neoplasms
   a. Follicular thyroid carcinoma
   b. Invasive encapsulated follicular variant papillary carcinoma
   c. Papillary thyroid carcinoma
   d. Oncocytic carcinoma of the thyroid
   e. Follicular-derived carcinomas, high-grade
      i. Differentiated high-grade thyroid carcinoma
      ii. Poorly differentiated thyroid carcinoma
   f. Anaplastic follicular cell–derived thyroid carcinoma

Thyroid C-cell–derived carcinoma

1. Medullary thyroid carcinoma

Mixed medullary and follicular cell–derived carcinomas

Salivary gland–type carcinomas of the thyroid

1. Mucoepidermoid carcinoma of the thyroid
2. Secretory carcinoma of salivary gland type

Thyroid tumors of uncertain histogenesis

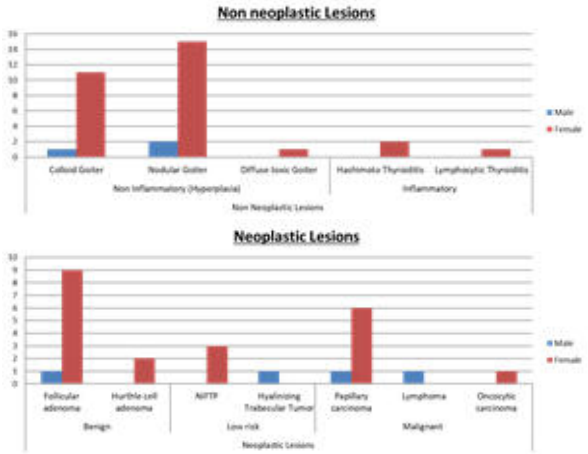
1. Sclerosing mucoepidermoid carcinoma with eosinophilia
2. Cribriform morular thyroid carcinoma

Thymic tumors within the thyroid

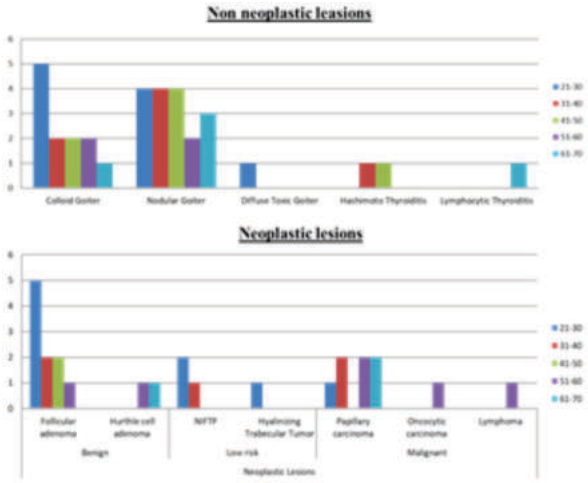
1. Thymoma family
2. Spindle epithelial tumor with thymus-like elements
3. Thymic carcinoma family

Embryonal thyroid neoplasms

1. Thyroblastoma



Gender Wise Distribution



Age Wise Distribution

CONCLUSIONS

A retrospective and observational study to evaluate the various histopathological patterns of thyroid lesions was undertaken from May 2022 to October 2024.During study period, total 58 thyroid specimens were received in our department. The age group of patients ranged from 22-66 years with a mean age of 42.3 years. Thyroid lesions were most common in age group of 21-30 years (Third decade). A striking female preponderance was observed with male to female ratio of 1:7. The non-neoplastic lesions were more common than neoplastic lesions. Among the neoplastic lesions, Benign lesions were more common than malignant lesions. Follicular adenoma was the commonest benign thyroid lesion. The most common thyroid malignancy was papillary thyroid carcinoma. We conclude that, it is necessary to study all thyroid lesions carefully as incidence and trend changes over time and depends on multiple factors. Though, different preoperative modalities are available for the diagnosis of thyroid diseases, histopathological examination of the thyroid specimens proves to be the gold standard tool for the diagnosis and further management of thyroid lesions.

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