

Histopathological Study of Solitary Thyroid Nodules

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ABSTRACT

Aim: To determine the clinic-Histopathological spectrum nodules in patients of solitary thyroid nodules.

Methods: A total number of 100 patients with diagnosis of solitary thyroid nodules were included in this cross-sectional study. Before hemi-thyroidectomy complete thorough general physical examination of all patients was done and vital signs were taken. In all patients' hemi-thyroidectomy was done and biopsy specimens were taken and sent to the central laboratory of the hospital for determining the frequency of malignancy.

Results: Mean age of studied patients was 41.81 ± 12.33 years. There were more females 78% as compared to male patients which were only 22%. On histopathological reporting, adenoma was diagnosed in 36% patients, colloid nodules in 33% patients, cyst in only 9% patients and thyroiditis in only 5% patients. While malignant lesions were diagnosed in only 17% cases, out of which 10% cases were of papillary carcinoma and follicular carcinoma in 7% cases.

Conclusion: Malignant lesions are found in 17% cases of solitary thyroid nodules (STN). In benign lesions adenoma and colloid nodules are very common.

Keywords: Solitary thyroid nodule, malignancy.\

INTRODUCTION

Solitary thyroid nodule (STN) is a distinct swelling in one lobe of gland without any palpable abnormality in any other lobe of gland¹. These nodules are very common and are nearly diagnosed in 8% total adult population. With advancements in diagnostic methods frequency of diagnosis of thyroid lesions have increased remarkably²⁻⁴. In Pakistan different studies have reported 11% to 14.35% in adult population⁵. However, when compared to all ages groups the prevalence is only 1.0%.⁶ Thyroid cancer is diagnosed in about 5% cases of thyroid nodules⁶. Its incidence is increasing over time. Recent literature has concluded that the risk of malignancy is high in patients having STN as compared to the patients having multinodular goiter⁷.

Pre-operative knowledge regarding the pathophysiology of lesions e.g., benign or malignant help the operating surgeon during the procedure. It helps to avoid unnecessary extensive surgery and potential surgery related adverse effects, such as hypothyroidism, hypocalcemia, and recurrent laryngeal nerve injury⁸.

METHODS

In this descriptive cross-sectional study, we included one hundred patients of solitary thyroid nodules. This study had approval from IRB of the B.A attached hospital. Written informed consent was taken from all participants. Before hemi-thyroidectomy complete thorough general physical examination of all patients was done and vital signs were taken. In all patients' hemi-thyroidectomy was done and

biopsy specimens were taken and sent to the central laboratory of the hospital for determining the frequency of malignancy. In the occasion of a malignant frozen section report, completion thyroidectomy was done in the same sitting. Data analysis was done using SPSS v23. Frequency and percentages were calculated for different types of lesions diagnosed on histopathological findings.

RESULTS

Mean age of studied patients was 41.81 ± 12.33 years. There were 21 patients having age <30 years, 27% patients having age 30-40 years, 19% patients having age 40-50 years and 23% patients having age >50 years. There were more females 78% as compared to male patients which were only 22% (Table 1).

On histopathological reporting, adenoma was diagnosed in 36% patients, colloid nodules in 33% patients, cyst in only 9% patients and thyroiditis in only 5% patients. While malignant lesions were diagnosed in only 17% cases, out of which 10% cases were of papillary carcinoma and follicular carcinoma in 7% cases (Table 2).

Table 1. Baseline Variables of Patients

Variables	Value
Mean Age (Years)	41.81±2.33
Age Groups	
< 30 years	21
30-40 years	27
40-50 years	19
>50 years	23
Gender	
Male	22
Female	78

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Table 2: Histopathological pattern of solitary nodules biopsy specimens.

Type of Lesion	Frequency
Benign Lesions	
Adenoma	36
Colloid Nodule	33
Cyst	9
thyroiditis	5
Malignant Lesions	
Papillary carcinoma	10
Follicular Carcinoma	7

DISCUSSION

Thyroid lesions are one of the commonly encountered in adult population, these are palpable and on radiographs look distant from normal parenchymal tissues. Thyroid nodules having size <1 cm are of least importance and those having >1 cm size should undergo proper evaluation.

Solitary thyroid nodules are defined clinically as a localized thyroid enlargement with an apparently normal adjacent gland. Clinically, STNs are common, being present in up to 50% of the elderly population. The majority of STNs are malignant. Preliminary investigation should include careful history and thorough clinical examination and thyroid function tests^{9,10}.

The management of thyroid nodules requires a combination of clinical evaluation followed by appropriate investigations. An individualized approach, rather than a broad algorithm is increasingly becoming relevant in the management of thyroid nodules.¹¹ Determining the nature of STN is very important as aggressive surgery may be regarded as an excessive mode of treatment¹².

In present study, there were females 78% as compared to male patients which were only 22%. Jena et al. also reported higher percentage of female patients in their study, in their study there were 69.7% female patients and only 30.3% male patients.⁸In the study of Umapathi P, there were 82.0% female patients and only 18% male patients.¹³Ghauri et al. also reported similar results¹⁴.

In our study, there were 83% having benign lesions and only 17% were having malignant lesions. Out of benign lesions, adenoma was diagnosed in 36% patients, colloid nodules in 33% patients, cyst in only 9% patients and thyroiditis in only 5% patients. While in malignant lesions, 10% cases were of papillary carcinoma and 7.0% lesions were follicular carcinoma.

Umapathi P reported benign lesions 81.0%, out of which 34% colloid nodules, adenoma in 37% cases, thyroiditis in 4% cases and cyst in 6% cases. While they reported malignant lesion in 19% cases, papillary carcinoma in 11% cases and follicular ca in 8% cases¹³.

Ghauri et al. reported malignant lesions in 8.4% cases of STN, with papillary carcinoma being the commonest one. While they reported benign lesions in 91.6% cases, in benign lesions adenoma was the commonest one, followed by follicular adenoama and cyst¹⁴.

CONCLUSION

Malignant lesions are found in 17% cases of solitary thyroid nodules (STN). In benign lesions adenoma and colloid nodules are very common.

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