



## A CLINICAL STUDY OF SOLITARY THYROID NODULE

## General Surgery

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## ABSTRACT

Solitary thyroid nodule is defined as a discrete swelling in an otherwise impalpable gland with prevalence of 4-7% in adult population with female preponderance. Importance of solitary thyroid nodule lies in its risk of malignancy compared with other thyroid swellings (10-20% are malignant). Conditions that present with solitary thyroid nodule are dominant nodule of multinodular goiter, follicular adenoma, thyroid cyst, thyroid carcinoma, localized form of thyroiditis and colloid goiter. FNAC is the single most useful investigation which can detect most of these conditions. Surgery is the mainstay of treatment after optimizing the patients to euthyroid state. Patients were taken to surgery of which hemi-thyroidectomy, total thyroidectomy and completion thyroidectomy were done depending upon pre-operative FNAC and post-operative HPE.

## KEYWORDS

Solitary, nodule, colloid, benign, incidence, thyroid

## INTRODUCTION

A solitary thyroid nodule (STN) is defined as a palpable discrete swelling in an otherwise normal thyroid gland. Found to affect 4-7% of total population with female to male ratio being 4:1. [1] A majority of STN are benign. Benign causes include colloid goiter, and dominant nodule of multi nodular goiter. Incidence of malignancies is around 5-10%. [2] A systemic approach is needed to evaluate and treat STN. Treatment modalities include:

Hemi Thyroidectomy	Total Thyroidectomy	Completion Thyroidectomy
<ul style="list-style-type: none"> <li>• Colloid goiter</li> <li>• Follicular Adenoma</li> </ul>	<ul style="list-style-type: none"> <li>• MNG</li> <li>• Papillary carcinoma (with/without neck dissection)</li> </ul>	<ul style="list-style-type: none"> <li>• Post op HPE suggestive of Malignancy</li> </ul>

## AIM AND OBJECTIVES OF STUDY

- To evaluate age and sex distribution
- To evaluate etiology and clinical presentation
- To evaluate incidence and type of malignancy in STN
- To evaluate treatment modalities.

## MATERIAL AND METHODS

- Type of study: Prospective
- Sample size: 80 patients diagnosed clinically as STN.
- Institution: Government General Hospital, Kakinada.
- Time of study: September 2020 to May 2022.

## Inclusion Criteria

Patients found to have STN on clinical examination. Patients giving consent for participation in study.

## Exclusion Criteria

Patients with thyroid enlargement except STN. Patients not giving consent for study.

Thorough clinical examination was done in all cases. All cases were subjected to USG neck, FNAC and thyroid profile. FNAC and Thyroid profile are the main line of investigations. Patients whose FNAC reported as colloid nodule/ Follicular Adenoma were posted for Hemi thyroidectomy.

Patients whose FNAC findings reported as MNG and Papillary carcinoma were posted for Total thyroidectomy. Neck dissection was done depending on status of neck nodes in Papillary carcinoma. Post operative specimens were sent for HPE. Patients were followed for recurrence by clinical examination and radiological investigations.

## RESULTS

- Age and Sex: Peak incidence is seen at 3rd and 4th decades of life with majority of patients between 30-39 years.
- Female patients far outnumbered males with 69 females and 11 males.

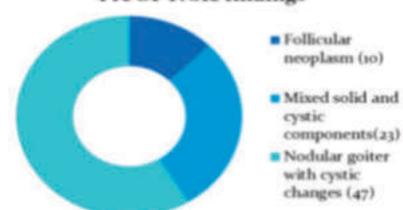
AGE	FEMALES	MALES	TOTAL
10-19	2	0	2
20-29	16	1	17
30-39	33	5	48
40-49	10	3	13
50-59	7	2	9
60-69	1	0	1
TOTAL	69	11	80

Most common clinical feature on presentation was swelling in front and lower part of neck seen in all of the cases on admission.

CLINICAL FEATURES	NUMBER
SWELLING	80
PAIN	0
HOARSENESS	0
PRESSURE SIGNS	0
TRACHEAL DEVIATION	0
LYMPHADENOPATHY	0

77 cases were in euthyroid state, 2 cases were hypothyroid and 1 case was in hyperthyroid state. Pre op FNAC was done in all patients; nodular goiter with cystic changes being the most common finding accounting to almost 60% of the cases.

## Pre OP FNAC findings



All cases were confirmed by post operative HPE. Most common etiology was noted to be MNG. Carcinoma was seen in 10 patients.

ETIOLOGY	NUMBER	PERCENTAGE
ADENOMA	23	28.75
MNG	47	58.75
CARCINOMA	10	12.5
LYMPHOCYTIC THYROIDITIS	0	0
TOTAL	80	100

Papillary carcinoma was noted to be the most common cause of carcinoma of the 10 cases.

TYPE OF CARCINOMA	NUMBER
PAPILLARY CARCINOMA	9
FOLLICULAR CARCINOMA	1
MEDULLARY CARCINOMA	0
ANAPLASTIC CARCINOMA	0
LYMPHOMA	0
OTHERS	0
TOTAL	10

## DISCUSSION

In my study the peak incidence is seen in 3rd to 4th decades with higher incidence in females with 7:1 ratio with males which is similar to studies done by Yamashita et al. [3] All evaluated patients complained of swelling in front of neck as their primary symptom with 96% of total patients being euthyroid state. Patients with hyperthyroidism and hypothyroidism states prior to surgery were controlled with medical management and then taken up for surgery. All patients underwent FNAC (direct visualization / USG guided) as primary investigation. Present study found that predominant etiology in our case series was MNG amounting to 58% of total cases which is similar to studies done by Bennedback et al. [4,5] Next common etiology is found to be follicular neoplasm (28%) of all cases and malignancies being (12.5%) of total cases in which papillary carcinoma being most common. Treatment for all cases initially started with hemi-thyroidectomy. In those patients whom MNG was found on operative exposure and in patients with preoperative FNAC suggestive of papillary carcinoma underwent total-thyroidectomy with or without neck dissection. Patients whom malignancy was detected in postoperative HPE underwent completion thyroidectomy.

## CONCLUSIONS

STN is a common clinical entity that occurs more commonly in females with peak clinical incidence in between 30- 40 years. Usually presents with painless swelling in front of neck. FNAC and Thyroid profile are most important investigations that help in diagnosis. Multinodular goiter is most common cause of solitary thyroid nodule. Surgery is the treatment of choice in all cases.

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