



## "A CLINICAL STUDY ON SOLITARY NODULE OF THE THYROID GLAND"

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## KEYWORDS :

## INTRODUCTION

A discrete swelling in an otherwise impalpable gland is termed isolated or solitary nodule of thyroid.<sup>1</sup> The prevalence of thyroid nodule increases from near zero at 15 years to 50% by about 60 to 65 years on sonography. At most 10% of these nodules are palpable even by experienced clinician.<sup>2</sup> At autopsy, up to 30% of thyroid nodule harbor malignant nodules under 1cm, termed micro carcinomas.<sup>3</sup> A nodule is more likely to be a carcinoma in a male.<sup>4</sup> Thyroid nodules present a challenge in their diagnosis, evaluation, and management. They can be a part of a multinodular thyroid gland, adenomas or neoplasms, Hashimoto's thyroiditis. The ultimate aim in the evaluation of solitary thyroid nodule (STN) is to differentiate benign hyperplasia from true neoplasms.

Fine needle aspiration biopsy is the single most important test in the evaluation of patients with thyroid swelling.<sup>5</sup> Ultrasound is helpful for differentiating solid from cystic nodules, and for identifying lymphadenopathy.<sup>6</sup>

## AIMS &amp; OBJECTIVES

To evaluate a patient with solitary nodule thyroid in terms of Clinical presentation, age & sex distribution and complications, correlate the findings of FNAC with the HPE of resected specimen.

## METHODOLOGY

This is an observational and descriptive study conducted in 60 eligible patients admitted to Narayana Medical College and Hospital, Nellore with solitary nodule thyroid during the study period between October 2015 to October 2017. History and examination, Thyroid profile, Ultrasound, Fine needle aspiration cytology, Surgery findings, post operative histopathology were documented.

## RESULTS

TABLE NO 1: AGE DISTRIBUTION OF PATIENTS (n=60)

Age in years	No of cases	Percentage
18-20	3	5
21-30	5	8
31-40	22	37
41-50	15	25
51-60	9	15
61-70	6	10
Total	60	100

- males were 6 and 54 cases were female
- all cases presented with swelling, pain was noted in 6, dyspnoea in 3, voice change and weight loss was noted in 3 each
- 4 had symptoms for < 1 month, 8 cases had 1-2 months, 27 cases had symptoms for 1-2 years and in 21 cases it was for more than 2 years.
- right lobe was involved in 33, left lobe in 24 and isthmus nodule in 3 cases.
- Nodule was soft in 6, firm in 51 and hard in 3 cases
- USG showed cystic lesions in 3, STN in 42, MNG in 15 cases
- 56 cases were in euthyroid, 3 in hyper and 1 in hypothyroid state

TABLE NO 2: FNAC Reports (n=60)

FNAC report	No of Patients	Percentage
Colloid Goiter	34	56
Follicular Neoplasm	6	10
In conclusive	1	2
Papillary	10	16
Adematous	5	8
Adenoma	2	4
Suspicious	2	4
Total	60	100

TABLE NO 3: HISTOPATHOLOGICAL FINDINGS IN PATIENTS WITH STN - BENIGN LESIONS

Diagnosis	No of Patients	Percentage
Nodular Goiter	7	12
MNG	3	5
Simple Cyst	1	2
Hashimotos Thyroiditis	5	8
Lymphocytic Thyroiditis	0	0
Follicular Adenoma	12	20
Fibrosing Thyroiditis	3	5
Adenomatous Colloid Goitre	14	23
Hurthle Cell Adenoma	2	5
Total	47	78

- 47 cases of STN were benign and 13 were malignant with 10 papillary type and 3 had follicular carcinoma
- 26 cases had rt hemithyroidectomy, 17 had lt hemithyroidectomy, 12 had total thyroidectomy and 5 had total thyroidectomy with lymph node dissection.

## DISCUSSION

TABLE NO 4: COMPARISON OF SEX DISTRIBUTION IN VARIOUS STUDIES

Study	Sex ratio	Year
MdAbul Hossain <sup>7</sup> et al	7:1	2014
Ramesh babu <sup>8</sup> et al	8:1	2015
Rajesh Kakkeri et al	8:1	2016
Present Study	9:1	2017

TABLE NO 5: COMPARISON OF PEAK AGE INCIDENCE IN VARIOUS STUDIES

Study	Peak Age Incidence	Year
Huqee SMN et al	31 - 40 years	2012
MdAbul Hossain <sup>7</sup> et al	31 - 40 years	2014
Naz Akhtar et al	31 - 40 years	2015
Ramesh babu et al	21 - 30 years	2015
Rajesh Kakkeri et al	21 - 30 years	2016
Present Study	31 - 40 years	2017

**TABLE NO 6: COMPARISON OF SITE OF INVOLVEMENT OF THE THYROID NODULE**

Study	Right lobe	Left lobe	Isthmus
Rajesh kakkeri et al	50%	40%	10%
T V Haridasu et al	60%	37%	3%
Hossain et al	37%	53%	10%
Present Study	55%	40%	5%

**TABLE NO 7: COMPARISON STUDY FOR FNAC**

Study	Benign	Follicular Neoplasm	Malignant	Cyst
Premalatha et al	76%	12%	10%	2%
T V Haridasu et al	66%	13%	20%	1%
Hossain et al	80%	3%	15%	2%
Present Study	68%	10%	20%	2%

**TABLE NO 8: COMPARISON OF HPE IN VARIOUS STUDIES**

HPE Report	MdEzzat et al	Hemshankara et al	Premalatha et al	Present Study
Colloid	30%	50.30%	34%	35%
Adenoma	32%	28.40%	22%	25%
Cyst	4%	-	2%	2%
Papillary CA	14%	11.50%	10%	16%
Follicular CA	6%	3.70%	2%	5%
Medullary CA	4%	-	-	-
Anaplastic CA	2%	-	-	-
Thyroiditis	2%	1.60%	10%	12%
MNG	6%	7.80%	20%	5%

**TABLE NO 9: COMPARISON STUDY OF FNAC VS HPE**

FNAC	HPE		TOTAL
	MALIGNANT	BENIGN	
<b>MALIGNANT</b>	10	0	10
<b>BENIGN</b>	3	47	50
<b>TOTAL</b>	13	47	60

From the present study sensitivity of FNAC was 76.9%. While overall specificity was 100%. As all malignancy reported on FNAC conformed by HPE.

**TABLE NO 10: ACCURACY OF FNAC FINDINGS**

Sensitivity	76.9%
Specificity	100%
Positive predictive value (PPV)	100%
Negative predictive value (NPV)	94%

**CONCLUSION**

For solitary nodule thyroid FNAC is first investigation of choice. It is very useful, cost-effective, safe, and simple and has high diagnostic accuracy. It is highly sensitive and specific for diagnosis of thyroid nodule. However, it cannot differentiate between follicular carcinoma and follicular adenoma. USG is a useful diagnostic aid as it helps in distinguishing a cystic and solid nodule and for USG-guided FNAC. It also detect very small nodule clinically impalpable. But it does not help in differentiating benign from malignant nodule.

Among the benign lesion colloid goiter is most common and papillary and follicular carcinoma are common in malignant lesion. Minimal surgery performed for solitary nodule is hemi thyroidectomy. Modified neck dissection is advised for patients with enlarged nodes in papillary carcinoma and for those post op patients who are diagnosed to have malignancy with lymph node metastasis. All the patients with malignant lesion treated with total thyroidectomy with neck dissection and were given suppressive dose of thyroxin post-operatively lifelong with regular follow up.

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