



## MALIGNANT INCIDENCE IN SOLITARY NODULE THYROID – A CLINICAL STUDY

### KEYWORDS

Thyroid, Solitary Nodule, Carcinoma, Toxic Nodule

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### ABSTRACT

*In clinically palpable solitary nodule of thyroid the percentage of carcinoma is 10.89% and papillary carcinoma is the common pathological type. FNAC is the reliable method of diagnosis preoperatively. Thyroid scan comes great diagnostic significance in toxic nodule.*

### Introduction :

Common presentation of thyroid disorders is solitary nodule a discrete swelling in an otherwise impalpable gland is termed as isolated or solitary nodule of thyroid.

At autopsy upto 30% of thyroid nodules harbour malignant nodules under 1cm are termed as "micro carcinomas". A nodule is more likely to be a carcinoma in a man. Whether nodule size itself is a risk factor for malignancy is controversial. FNAC is the single most important test in evaluation of patients with thyroid swellings. Most patients with a solitary nodule will have a benign lesion however thyroid cancer must be considered in all patients.

**Primary malignant tumours :** The presence of a solitary nodule is a great concern than a thyroid with multiple nodules. Most of these nodules are benign but overall 5%-15% are thyroid cancers.

The major types thyroid carcinomas and there relative frequencies include :

- Papillary carcinomas (70%-80%)
- Follicular carcinomas (10%)
- Medullary carcinomas (4%-10%)
- Anaplastic carcinomas (1%)

**Tumours are categorized into three categories depending upon increasing clinical aggressiveness as :**

- Well differentiated (Papillary & Follicular carcinomas)
- Intermediate differentiated (Hurthle cell carcinomas)
- Un differentiated (Anaplastic carcinomas)

Lymphoma of thyroid is relatively a rare disease comprising <1% of lymphomas and accounting for 2% of all extra nodule Non Hodgkins Lymphomas. These patients have hypothyroidism and have incidence of auto immune thyroiditis in biopsy or pathological specimens.

**Metastatic malignant tumours involving thyroid gland and presenting clinically as solitary nodule is very rare.**

**Most common primary is :**

- Renal carcinoma (23%)
- Breast (16%)
- Lung (15%)
- Melanoma (5%)
- Colon and Larynx (4.5% each)

**Investigations :** Fine needle biopsy is accepted as the

most precise diagnostic screening procedure for differentiating benign from malignant thyroid nodule.

Other investigations which help in diagnosis are radionuclide scan, ultrasonography, CT scan and thyroid profile.

### Methodology of survey:

A study conducted at Department of General Surgery, Govt. General Hospital, Kurnool consisting of 120 cases of solitary thyroid nodule from 2010-2014. Clinical study was done through questionnaires and clinical examinations.

All patients were investigated with routine and special investigation. Children below the age of 12yrs, pregnant women with solitary nodule are excluded in this study.

**Age & Sex Incidence :** In the present study females are outnumbered the males. There are 15 males and 105 female giving a male to female ratio of 1:8. Most of the patients are (93/120) between 21 and 40yrs with a peak incidence in 21-30yrs group. Youngest patients is 19yrs oldest patients is 58yrs.

Age in years	Male	Female	Total
11-20	2	5	7
21-30	4	46	50
31-40	4	39	43
41-50	3	11	14
51-60	2	4	6

**Site of solitary nodule :** Majority of solitary nodules are located in right lobe in the present study 50% of solitary nodules are in the right lobe. 40% in the left lobe and 10% is in the Isthmus.

Site	Number	Percentage (%)
Right lobe	60	50
Left lobe	48	40
Isthmus	12	10

**Duration of symptoms :** The duration of symptoms ranged from 3 months to >1year. 45 patients complained

of swelling of >1year duration in all the 13 patients with proven malignancy, symptoms were present for >1year duration.

Duration of symptoms in months	Benign	Malignant	Total
1-3	5	0	05
4-6	15	0	15
7-9	25	0	25
10-12	30	0	30
>12	32	13	45

**Modes of presentation:** In all cases the presenting complaint is a swelling in the region of thyroid. Most of the patients in the younger age group i.e., those <30 years of age had no other symptom apart from the swelling and sought advice because of disfigurement. Pressure symptoms noted in only 15 cases. All the patients with dysphagia and dyspnoea have benign solitary nodules. Of 4 patients with hoarsness of voice, 3 patients have malignant nodules.

Mode of presentation	Total	Benign	Malignant
Swelling	120	107	13
Sudden increase in size	0	0	0
Pain	0	0	0
Dysphagia	6	6	0
Dyspnoea	5	5	0
Change of voice	4	1	3
Euthyroid (clinically)	118	105	13
Hyper thyroid	2	2	0
Hypothyroid	0	0	0

Size varied from 2 x 2 cms (smallest size) to 8 x 7 cms (largest size). Consistency of the swelling soft (40 cases ) firm (71 cases) and hard (9 cases). Of the 40 patients with soft nodules 2 had malignant nodules and other 38 have benign nodules. Of the 71 patients with firm nodules 2 had malignant and all other are benign nodules. All the hard nodules malignant.

Indirect Laryngoscopy was done in all cases. Vocal cord palsy is present in 3 cases and all have malignant nodules.

**Pathological diagnosis :** The benign nodules constitute about 89.16% and malignant nodules 10.83% of all clinically solitary nodules.

Of all the 120 cases of clinically solitary nodules 66 cases were turned out to be multi nodular goitres at exploration. So only 54 cases are true solitary nodules constituting 45% of clinically solitary nodules.

	No. of cases	Percentage (%)
Total no. of clinically solitary nodules studied	120	-
Benign nodules (total)	107	89.16
Multi nodular	66	55
Toxic nodules	2	1.66
Variants of adenoma	31	25.83
Hashimotos thyroiditis	8	6.66

	No. of cases	Percentage (%)
Malignant nodules	13	10.83
Papillary carcinoma	10	76.92 of malignant nodules
Follicular carcinoma	2	15.38 of malignant nodules
Anaplastic carcinoma	1	6.69 of malignant nodules
Medullary carcinoma	0	-
Lymphoma	0	-

**Conclusion :**

The female male ratio is 8:1. The peak age incidence is in 21-30yrs of age group. Most common presentation is a swelling in thyroid region. Majority of patients with change of voice have malignant nodules. All hard solitary nodules are malignant. Incidence of multi modularity on surgical exploration is 55% on clinically solitary nodules.

The incidence of true solitary nodules is 45% only. Most of the solitary nodules are benign and constitute 89.16%. the incidence of malignancy being 10.83%.

Adenoma is the most common pathological type of a true solitary nodules. Papillary carcinoma is the most common malignant variant encountered. The incidence of Hashimotos thyroiditis in clinically solitary nodules is 6.66%.

The accuracy rate of ultra sonogram in cystic nodule is 100%. In solid nodules is 88.89% and in mixed nodules 87.5%. ultra sonogram is not much helpful in differentiating a benign from malignant nodule.

Aspiration cytology is very useful in making a preoperative diagnosis. The accuracy rate in the present series being 75%. FNAC is very reliable and powerful screening method in the preoperative diagnosis of STN with high specificity and sensitivity. Combined use of FNAC and Thyroid scan and Ultra Sonography can detect them with 90% accuracy.

Thyroid scan carries great diagnostic, therapeutic and prognostic significance in toxic nodular goitre. Recently developed immunohistochemical and genetic techniques for examining FNAB specimens may produce nearly 100% reliability in the near future. Technical advances in HRUS have benefited the diagnosis of thyroid nodules. HRUS can be expected to remain a key tool for assisting in surgical decisions. However HRUS is heavily operator dependent.

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