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Research Article

A clinical study of solitary nodule thyroid

Rajesh Kakkeri*

Department of General Surgery, Navodaya Medical College, Raichur, Karnataka, India

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***Correspondence:**
Dr. Rajesh Kakkeri,
E-mail: rajeshkakkeri@gmail.com

ABSTRACT

Background: 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 clinicians.
Methods: The study was conducted in the Department of general surgery at government general hospital, consisting of 120 cases of solitary thyroid nodule in all the surgical units, during the period of September 2012 to September 2014.
Results: Most of the patients in the younger age group i.e., those below 30 years of age had no other symptoms apart from the swelling and sought advice because of the disfigurement. Pressure symptoms were noted in only 15 cases.
Conclusions: Majority of the solitary nodules are located in right lobe. In the present study 50% of solitary nodules were in the right lobe.

Keywords: Thyroid nodule, Clinical profile, Swelling

INTRODUCTION

Thyroid disorders are the most common endocrine disorder seen in clinical practice and solitary thyroid nodule is one of the common presentations of thyroid disease.

A discrete swelling in an otherwise impalpable gland is termed isolated or solitary nodule of thyroid.[1]

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 clinicians.[2]

At autopsy, upto 30% of thyroid nodule harbor malignant nodules under 1cm, termed microcaricinomas.[3]

A nodules is more likely to be a carcinoma in a man.[4]

Many solitary nodules are found asymptomatically, but because of their size and position can result in obstructive symptoms of trachea and oesophagus (dyspnoea and dysphagia).[2]

The major concern relates to the potentiality for malignancy of solitary nodule.

Whether nodule size itself is a risk factor for malignancy is controversial.

Fine needle aspiration biopsy is the single most important test in the evaluation of patients with thyroid swelling.[5]

Ultrasound is helpful for differentiating solid from cystic nodules, and for identifyinglymphadenopathy.[6]

The optimal management of a solitary thyroid nodule continues to be a source of controversy, because mot surgeons recommend operative intervention and surgery

is not always considered by some physicians, advocating either observation or thyroid suppression.

The basis of the conflict of divergent opinions may stem from the fact that the thyroid nodule undoubtedly has different connotations, when considered by a clinician, a surgeon or a pathologist. All are concerned whether the thyroid swelling in question is benign or malignant.

Most patients with a solitary nodule will have a benign lesion; however; thyroid cancer must be considered in all patients. Deciding between conservative management and surgical therapy relies on careful analysis of the clinical findings, risk assessment, imaging, and diagnostic testing.[7,8]

METHODS

Source data

The study was conducted in the Department of general surgery at government general hospital, consisting of 120 cases of solitary thyroid nodule in all the surgical units, during the period of September 2012 to September 2014.

Method of collection of data

The data was collected from patients admitted with a diagnosis of solitary nodule in the Department of surgery, GGH.

The clinical study was done through questionnaires and clinical examination.

All patients were investigated with routine and special investigations.

Necessary treatment was planned once arrived to a definitive diagnosis of solitary thyroid nodule. Postoperative complications were also included.

Inclusion criteria

A random selection of 120 cases admitted to the hospital with a diagnosis of solitary thyroid nodule, irrespective of the sex of the patients.

Exclusion criteria

- Children aged less than 12 years.
- Patients with multi- nodular and diffuse goiter.
- Patients of coagulopathy and on anti-coagulant regimen.
- Pregnant women with solitary thyroid nodule.

RESULTS

In the present series females outnumbered the males. There are 15 males and 105 females, giving a male to female ratio of 1:8, most of the patients are (i.e., 93 out of 120) between 21 and 40 years with a peak incidence in 21-30 years group. Youngest patient is 19 years. An oldest patient was 58 years (Table 1).

Table 1: Age and sex incidence.

Age (year)	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

Majority of the solitary nodules are located in right lobe. In the present study 50% of solitary nodules were in the right lobe. 40% in the left lobe and 10% in the isthmus (Table 2).

Table 2: Site of solitary nodule.

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

The duration of symptoms ranged from 3 months to more than one year. 45 patients complained of a swelling of more than one year duration. In all the 13 patients with proven malignancy symptoms were present for more than one year duration (Table 3).

Table 3: Duration of symptoms.

Duration of symptoms (month)	Benign	Malignant	Total
1-3	5	0	05
4-6	15	0	15
7-9	25	0	15
10-12	30	0	30
More than 12	32	13	45

In all cases the presenting complaint was a swelling in the region of the thyroid. But they sought advice for different reasons. Most of the patients in the younger age group i.e., those below 30 years of age had no other symptoms apart from the swelling and sought advice because of the disfigurement. Pressure symptoms were noted in only 15 cases (Table 4).

Table 4: Modes of presentation.

Made 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 in voice	4	1	3
Euthyroid (Clinically)	118	105	13
Hyper thyroid	2	2	3
Hypothyroid	0	0	0

All the patients with dysphagia and dyspnoea had benign solitary nodules. Of the 4 patients with change in voice, one patient had a benign nodule and the other three had malignant nodules (Table 5).

Size and consistency were varying from case to case. Smallest size: 2x2 cm; largest size: 8x7 cm; consistency-soft: 40 cases; firm: 71 cases; hard: 9 cases.

Table 5: Dysphagia.

Dysphagia	6 cases
Dyspnoea	5 cases
Change in voice	4 cases

Of the 40 patients with soft nodules 2 had malignant nodules and the other 38 had benign nodules. Of the 71 patients with firm nodules, 2 had malignant nodules and the others had benign nodules. All patients presenting with hard nodules had malignancy (Table 6).

Deviation of the trachea was observed in 50 cases. Deviation to the right -18 cases (36%). Deviation to the left- 32 cases (64%). Toxicity was observed in only 2 cases of the total solitary nodules constituting about 1.6%. Indirect laryngoscopy was done in all cases. Vocal cord palsy was present in 3 cases. All these 3 patients had malignant nodules.

In the present study physical findings associated with malignancy were studied such as hard and immobility of nodules and cervical lymphadenopathy. Both the variables were statistically significant.

Table 6: Univariate analysis of physical findings potentially associated with thyroid cancer.

		Cancer rate (%)	Odd ratio	95% confidence interval	P- value
Number of nodules	Solitary nodule Goiter with two or more nodules	12.20 35.70	4	[1.70-9.40]	0.0025
Hard and/or immobile nodule	No yes	17.65 13.40	1.38	[0.67-2.87]	0.38
Suspicious cervical Lymphadenopathy	No yes	14.10 22.20	1.70	[0.35-8.65]	0.62

DISCUSSION

Most patients with thyroid carcinoma present with an asymptomatic thyroid nodule, as do most patients with benign thyroid nodules, and the most common method of detection appears to have shifted from physical examination to incidental imaging by radiology studies.

Recently published evidence based guidelines by professional societies, ATA, AACE, AME and ETA provide similar recommendations for the evaluation and management of patients with thyroid nodules beginning with history and physical examination and then progressing to diagnostic testing and therapeutic recommendation.[7,9]

A thyroid nodule is more likely to be a thyroid carcinoma in patients under 20 years of age and those over 65 years of age than in those between. Benign thyroid nodules are four to five times more common in women than men, but thyroid carcinomas are only two to three times more common in women thus a nodule is more likely to be malignant in men.[10]

Various studies were done on the incidence of malignancy in solitary nodule thyroid and the results of present study are compared below in the following tables.

Study by Thai JD et al compared risk factors for malignancy in solitary thyroid nodule and the results were shown below.[11]

Study done by Huque SMN et al with 118 patients of STN, majority of the patients were within 21-40 years age group with female predominance. In thyroid malignancy male and ratio was 1:1.75.[12]

In the present study females outnumbered the males. There are 15 males and 105 females, giving a male to female ratio of 1:8, most of the patients are (i.e., 93 out of 120) between 21 and 40 years with a peak incidence in 21-30 years group. Youngest patient is 19 years. Oldest patient is 58 years. The results are consistent with the above studies.

CONCLUSION

In the present series' most of the patients are between 21 and 40 years age group with peak incidence in 21-30 years age group. This is not at variance with those reported in other series.

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