

EVALUATION OF SOCIO-CLINICAL CHARACTERISTICS OF SOLITARY NODULE OF THYROID: A HOSPITAL BASED PROSPECTIVE STUDY

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Abstract

Background: Solitary thyroid nodule is one of the most frequent presentations of thyroid disorder. This study aimed to evaluate the Socio-clinical Characteristics of Solitary Nodule of Thyroid at Krishna Rajendra Hospital, Mysore.

Methods: This prospective study included 55 patients, who were clinically diagnosed as solitary nodule of thyroid in the Department of Surgery at K R Hospital attached to MMC & RI, Mysore during the period of 18 months from January 2011 to July 2012. All patients were subjected to thyroid profile, USG & FNAC examination.

Results: The peak age at presentation of solitary nodule thyroid was 3rd to 5th decade, constituting about 43(78%) of the cases .It was more common in females with the ratio M:F(49/6) = 1:8.16 and in euthyroid state(95%). Its commonest presentation was swelling in front of neck and maximum had duration of symptoms between 1-2 years. 28 (50.9%) presented with nodule in right lobe of the thyroid gland and 27(49.1%) in the left lobe. Most of the patients 31(56.4%), were presented with the size of about 3 to 5 cm. Its Common causes were MNG (33%), follicular adenoma(25%) and adenomatous goitre(25%). FNAC was an important investigation in the evaluation.

Conclusion: Solitary nodule of thyroid were more common in females , in the age group of 20-50years, present with swelling in front of neck, had duration of symptoms between 1-2 years, presented with nodule in right lobe of the thyroid gland, size of about 3 to 5 cm, mostly in euthyroid state and the commonest cause was multi-nodular goiter

Key words: Evaluation, Socio-clinical Characteristics , Solitary Nodule of Thyroid

Introduction

A solitary nodule is defined as “a palpable single clinically detected nodule in the thyroid gland that is otherwise normal.” It is necessary to consider the status of opposite lobe when considering the ‘solitariness’ of the nodule. Ignoring palpability of opposite lobe is likely to lead to a higher incidence of solitary nodule turning out to be multi-nodular goiter.¹

Thyroid nodules are very common entities, though varying in incidence in different

geographical regions. The prevalence of palpable nodules in general population is 4-7%. Solitary nodules of thyroid are about four times more common in women than in men. Overall incidence of malignancy in solitary thyroid nodule ranges from 10-30%.^{2,3}

The usual presentation of a thyroid nodule is an asymptomatic mass that is discovered by either the patient or the clinician. Nodules of at least 0.5cm to 1cm can be usually be detected by palpation, although estimates of nodule size varies from physician to physician. It can be difficult to palpate any nodule in patient with a thick, short neck.⁴

The thyroid nodule has been subject of vigorous controversy with divergent opinions expressed by those who had wide experience in this field. The optimal management of thyroid nodule continues to be a source of controversy and the operative intervention recommended by most of surgeons is not always considered divine by some physicians advocating either observation or suppression.⁵

The importance of discrete swelling lies in the risk of neoplasia compared with other thyroid swellings. Some 15% of isolated swelling prove to be malignant and non- neoplastic, largely consisting of malignancy or follicular adenoma in clinically dominant swelling is approximately half that of truly isolated swelling, it is substantial and cannot be ignored.⁶

Because of possibility of malignancy, some clinicians especially those in surgical subspecialties recommend that all nodules have to be removed. On the other hand endocrinologist recommends FNAC performed as initial step of evaluation in order to avoid unnecessary surgery⁷.

Aims and Objectives

This present study aimed to evaluate the Socio-clinical Characteristics of Solitary Nodule of Thyroid at Krishna Rajendra Hospital, Mysore.

Materials and Methods

This prospective study included 55 patients, who were clinically diagnosed as solitary nodule of thyroid in the Department of Surgery at K R Hospital attached to MMC & RI, Mysore during the period of 18 months from January 2011 to July 2012.

These cases were studied in detail clinically and recorded as per the proforma. Routine investigations and specific investigations including FNAC of the nodule were done.

The patients were grouped according to different variables like age, sex, size of the nodule, site of the nodule, functional thyroid status and FNAC reports, then analyzed and compared with the previous similar studies conducted elsewhere. Finally conclusions were drawn accordingly.

Results

Total of 55 cases of solitary nodule of thyroid studied. The mean age of presentation was 37.24 years. The age of the patients ranges from 18 years to 66 years, with peaks being in 3rd

to 5th decades which constitute 43(78%) of the cases. Out of 55 cases studied 49 were females and 6 were males, and the ratio comes to M : F = 1 : 8.16 . Also the malignant nodules were common in females. Out of 6 cases of malignancy in the study,5 were females. (Figure-1)

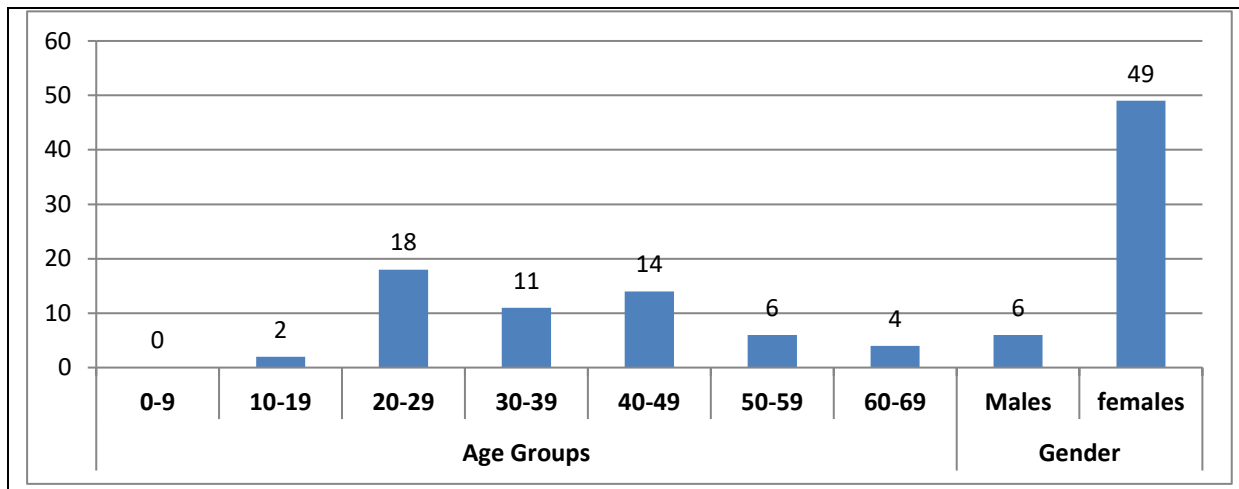


Figure-1: Age and Gender distribution of the study Participants

All the cases in the present study presented complaint of swelling in the region of the thyroid. Out of 55 cases, 3 cases had pain, 3 cases had discomfort and another 2 had dysphagia. All these mentioned additional symptoms were of mild degree. None of the patient had lymphadenopathy which was confirmed by ultrasonographic examination. Two patients had symptoms of thyrotoxicosis, and one had features of hypothyroidism. The latter patients' thyroid profile confirmed the functional status. In our study, duration of onset symptoms varied from 15 days to 8 years and maximum had duration of symptoms between 1-2 years. Also duration of malignant nodules extend from 1 month to 4 years.

Out of 55 cases studied, 28 (50.9%) cases presented with nodule in right lobe of the thyroid gland and the remainder 27(49.1%) cases in the left lobe of thyroid. One patient among left sided solitary nodule had undergone right lobectomy 30 years back and presented with recurrent nodule in the rest of the lobe. (Figure-2)

In the present study, on clinical examination size of the nodule, in its largest dimension, varies from 2cm to 12cm. Most of the patients 31(56.4%), were presented with the size of about 3 to 5 cm. In the study, as such there was no correlation between the size of the nodule and the occurrence malignant nodule. (Figure-2)

Out of 55 cases, two presented with features of thyrotoxicosis, one with hypothyroidism and rest all were in euthyroid state. Patients with thyrotoxicosis were made euthyroid using antithyroid drugs and operated and both cases turned out to be follicular adenoma. Patient with hypothyroidism was treated with thyroxine, USG neck revealed multiple nodules and managed by subtotal thyroidectomy, histopathological examination confirmed the diagnosis of multi-nodular goiter. (Figure-2)

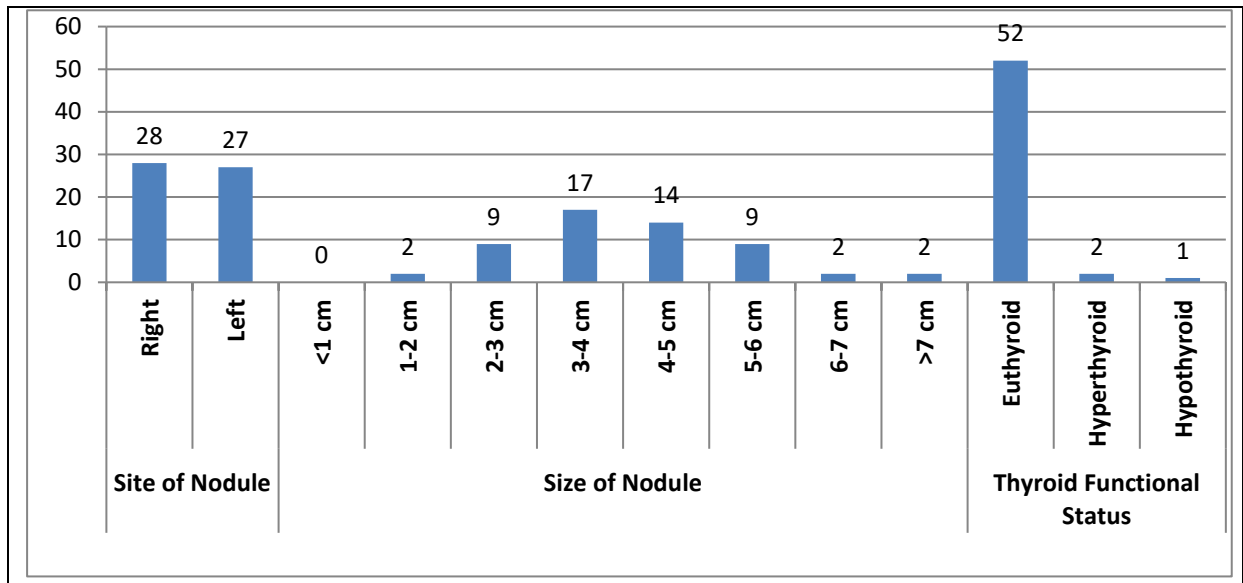


Figure-2: Site & Size of the nodule and its thyroid functional status

Fine Needle Aspiration Cytology is the important investigation in the evaluation of solitary nodule of thyroid. All 55 cases were subjected to FNAC during the course of evaluation. FNAC reports are mainly categorized into 6 entities- Benign, follicular neoplasm, suspicious(of malignancy), malignant, lymphocytic thyroiditis, cysts. In our study, out of 16 follicular neoplasms, two turned out to be follicular carcinoma. One suspicious (of papillary carcinoma) case, three cases of papillary carcinoma and two cases diagnosed as cysts pre-operatively by FNAC alone. (Figure-3)

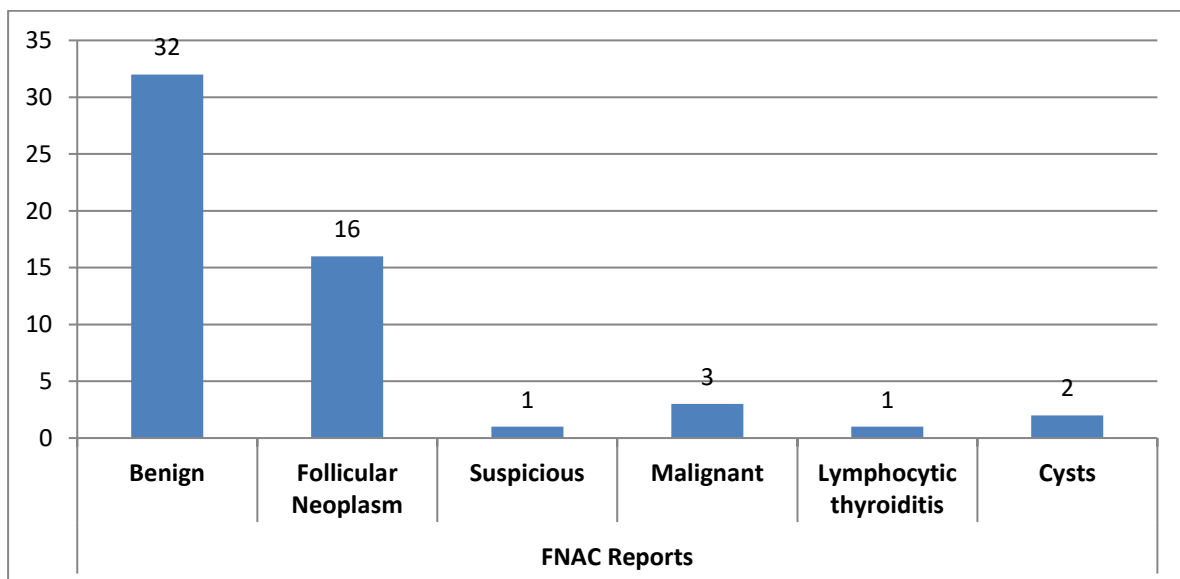


Figure-3: FNAC reports of the study participants

Discussion

In the present study, the mean age at presentation found to be 37.27 years with peak incidence was found to be 3rd to 5th decades, which constitutes about 43(78%) of the cases studied. Most of the earlier series reported peak incidence of solitary nodule thyroid in the 3rd and 4th decades. This result is comparable to the results obtained by Venkatachalapathy TS et al⁸ and Rajendran S et al.⁹

In the present study, ratio of sex incidence was found to be 1:8.16, which correlates with previous studies. In the study done by Dorairajan et al¹ and Das et al¹⁰ reported ratio of sex incidence as 1:9 and 1:5.39 respectively. Because of periods of fluctuations in the demands of the hormonal requirement in female in their life cycle (puberty, menstrual cycles, pregnancy, menopause), the chances of thyroid nodule formation are very high as compared with male counterparts.

In the present study, among 4 cases of papillary CA, 3 were diagnosed with certainty by FNAC and the rest one was suspicious of malignancy. But both the follicular CA were initially reported as follicular neoplasm. From the study, distribution of malignancy was about 7.27, which is comparable with the earlier studies.¹¹⁻¹⁵

From the present study, commonest cause of solitary nodule is MNG and other common causes were follicular adenoma and adenomatous goiter which is comparable with the studies done earlier.¹⁴⁻¹⁶

Conclusions

Solitary nodule of thyroid were more common in females, in the age group of 20-50 years, present with swelling in front of neck, had duration of symptoms between 1-2 years, presented with nodule in right lobe of the thyroid gland, size of about 3 to 5 cm, mostly in euthyroid state and the commonest cause was multi-nodular goitre.

FNAC was the investigation of choice in the evaluation of solitary nodule of thyroid and USG can be used to detect multi-nodular goitre in patients presenting with solitary nodule thyroid.

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