



ORIGINAL RESEARCH PAPER

General Surgery

DETERMINING THE INCIDENCE OF MALIGNANCY IN SOLITARY THYROID NODULE IN THE PATIENTS ATTENDING OPD OF A TERTIARY CARE CENTRE, ODISHA

KEY WORDS: Solitary thyroid nodule, malignancy, incidence

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ABSTRACT
BACKGROUND: Solitary thyroid nodule is a common presentation showing a rising trend for malignant transformation. Surgical removal of such nodules is imperative.
AIM: To determine the incidence of malignancy in solitary nodule thyroid and its distribution in both sexes.
Materials and Methods: A cross sectional study was conducted among the patients attending outpatient department of MKCG Medical College, Berhampur between October 2017-2018. Total 96 patients were included in the study. Data collection by meticulous history taking and clinical examination was followed by USG and FNAC of the thyroid swelling.
RESULTS: Most of them were between 30 – 50 years age group with females preponderance. The incidence of malignancy was 21.9% with a statistical significance between both sexes. Conclusion: Solitary nodule of thyroid is more common in 3rd to 5th decades. They were more common in females. A remarkable proportion of solitary thyroid nodule was malignant.

BACKGROUND:

Thyroid is the largest endocrine organ of human body. Its enlargement can be attributed to various factors and pathologies. The enlargement can be either generalized in form of a goiter, or nodular. Among the nodular ones, the multinodular goiter variety predominates over the solitary forms.¹ Clinical isolation contributes to around 70% of these discrete thyroid swellings which is supported and revealed by several studies.² Thyroid nodules are commonly 3 to 4 times more frequent in women than men.³ But a discrete swelling in a male is much more likely to be malignant than in female.⁴

A solitary thyroid nodule is a discrete swelling in one lobe with no palpable abnormality elsewhere.⁵ However clinically, it is a single and palpable nodule in the thyroid gland that is otherwise normal. An asymptomatic mass that is discovered by either the patient or the clinician constitutes its usual presentation. Although assessment varies from one clinician to another, detection by palpatory method can be utilized for nodules of size varying from 0.5 cm to 1 cm. Sometimes short neck makes it difficult to palpate any nodule. Variations in opinions exist among clinicians with expertise regarding its future course of management, thus landing in numerous controversies. The above differences lie in the two options, either going for an intervention for surgical removal or managing it conservatively.

The fact that malignant conversion in such nodules is around 10 to 30%⁶ owing to geographical variations makes it more interesting to study the incidence in them. Males have a greater risk of malignancy which is evident from different studies. Modalities like histopathology and radiological investigations are used to diagnose the malignancy in thyroid nodules. These nodules continue to be a challenge diagnostically, particularly when the need of excluding thyroid malignancy arises. Hence the present study was carried out to determine the incidence of malignancy in solitary nodules and its distribution in both sexes.

MATERIALS AND METHODS:

The study was carried out among patients attending the outpatient department of MKCG Medical College, Berhampur between October 2017 and October 2018. A total of 96 patients were included in the study after taking appropriate consent for participation in the study. Ethical clearance was taken from IEC, MKCG Medical College.

First the diagnosis of the thyroid nodule was done by all the clinical procedures, followed by ultrasonographic examination. The confirmation of malignancy in the corresponding nodule was finally obtained after sending the sample for FNAC investigation. Data were entered and analyzed by using Microsoft excel and SPSS version 16.0. For quantitative analysis, mean and standard deviation were calculated. Percentages and chi square were derived for qualitative description. Statistical significance was considered when p value was less than 0.05.

RESULTS:

A total of 96 cases of solitary thyroid nodule were studied and the following conclusions were drawn.

TABLE 1: AGE DISTRIBUTION OF THE STUDY PARTICIPANTS (N=96)

Age (years)	No. of cases	Percentage
10 – 20	6	6.3
21 – 30	12	12.5
31 – 40	38	39.5
41 – 50	30	31.3
51 – 60	6	6.3
61 - 70	4	4.1
Total	96	100
Mean and SD = 44.58 + 5.28		

The age of the study participants varied from 10 years to 70 years with mean age of 44.58 + 5.28 years (Table 1).

TABLE 2: SEX DISTRIBUTION OF THE PATIENTS (N=96)

Gender	No. of cases	Percentage
Female	68	70.8
Male	28	29.2
Total	96	100

Gender wise distribution showed that 68 (70.8%) were female and 28 (29.2%) were male patients (Table 2).

TABLE 3: FREQUENCY OF MALIGNANCY FROM HISTOPATHOLOGY

Frequency	No. of cases	Percentage
Malignant	21	21.9
Benign	75	78.1
Total	96	100

The frequency of malignancy in solitary thyroid nodule on

histopathology showed 21.9% were malignant and rest i.e 78.1% were benign cases (Table 3).

TABLE 4: GENDER WISE DISTRIBUTION OF MALIGNANCY

Gender	Malignant	Benign
Female	9	59
Male	12	16
Chi square = 10.1831, p = 0.0001*		

* statistically significant

Distribution of malignancy among the patients demonstrated that out of 21 patients, 9 were female and 12 were male (Table 4). Statistical significance was found among the male and female study participants with regard to the incidence of malignancy in the solitary thyroid nodules.

DISCUSSION:

Through the years, thyroid swellings have been a common clinical problem worldwide. They are commonly found in 3rd to 4th decade of life and more frequent (3-4 times) in women than men.

Its evaluation in detail presents a consistent challenge for the surgeons. The evaluation procedure starts with a detailed history of the patient attending the OPD of any health care system, be it a government facility or a private set up. Palpatory method of diagnosing a thyroid nodule as a solitary one is itself insufficient to bring out a clear picture for reaching at a conclusive point of any malignancy. Hence such nodules when found suspicious are subjected to further investigations like ultrasonography and histopathology. Gold standard investigation for diagnosing thyroid malignancy is the histopathological study of the thyroid specimen.

The incidence of malignancy in these nodules ranges from 10 – 30 % and this fact is supported through numerous studies done on this part. Thus it is inevitable to confirm any neoplastic change in the nodule as early as possible.

The age distribution of the current study reveals that most of the patients were between 31-50 years of age. Akhtar N et al. in his study had age distribution of solitary thyroid nodule between 21 to 40 years.² The mean age of the study participants was 44.58 (5.28) years. This was higher than the mean age in the studies by Anwar et al. (37 years)⁷, Quari et al. (36.7 years)⁸ and Talepoor et al. (38.6 years).⁹

Majority of the patients were female (70.8%) which slightly below (76.6%) in the study by Akhtar N et al.² Similarly female predominance was found in the study by Fernando et al.¹⁰ and Das et al.¹¹, Browse et al.¹² But in the studies by Dorairajan and Jayashree¹³, and Gupta et al.¹⁴, males outnumbered the female patients.

In the present study, the incidence of malignancy was 21.9% among the study participants. However it was 12%, both in studies by Fernando et al.¹⁰ and Fenn et al.¹⁵ But Bhansali et al. reported 9%¹⁶ and Pardhasaradhi K et al.¹⁷ as 11.34% for the incidence of malignancy in solitary thyroid nodule. The incidence of malignancy was higher in males as compared to females and this distribution was found to be statistically significant.

CONCLUSION:

Solitary nodule of thyroid is more common in females with third and fourth decade being the common age group. FNAC gives us the confirmatory status about any change in the nodule. It was concluded from the study that 21.9% of the solitary thyroid nodule was malignant, for which stress should be given for early diagnosis and adequate treatment.

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