Original Research Article

Incidence Of Malignancy In Solitary Thyroid Nodule In A Tertiary Care Hospital: A Cross Sectional Study

Dr Vidyut kumar Sinha[1], Dr. Nitin M Baste[2*],

[1]Assistant Professor, Department of Surgery, SMBT Institute of Medical Sciences and Research Centre, Dhamangoan Nashik

[2]*Associate Professor, Department of General Surgery, SMBT Institute of Medical Sciences and Research Centre, Dhamangoan Nashik, Email: nitinbaste@gmail.com

***Corresponding Author:** Dr. Nitin M Baste

*Associate Professor, Department of General Surgery, SMBT Institute of Medical Sciences and Research Centre Dhamangaon Nashik, Email: nitinbaste@gmail.com

Abstract

Background: A discrete swelling in an otherwise impalpable thyroid gland is termed as solitary nodule of thyroid. Thyroid nodules are common. They can be either benign or malignant. Solitary thyroid nodules have a high likelihood of being malignant. Because of increased preponderance of malignancy, they should be evaluated with necessary investigations and treated appropriately.

Aim and objective: The aim of the study to determine the incidence of solitary nodule thyroid**.**

Methodology: A prospective study had been carried out, in the Department of General surgery, SMBT IMSRC Nashik India. 40 patients, were examined clinically and confirmed after taking a detailed history who presented with solitary thyroid swelling and underwent thyroid surgery were included in this study. The histopathological reports were evaluated by standard statistical methods.

Results: There were 40 cases of clinically detected solitary thyroid nodule with female preponderance more than males. The mean age of the incidence of solitary thyroid nodule is 39 years. The incidence of malignancy in solitary thyroid nodule is 25%.

Keywords: Incidence, Malignancy, Solitary thyroid nodule

INTRODUCTION:

The solitary thyroid nodule, defined as a palpably discrete swelling within an otherwise apparently normal gland, is usually a benign lesion. Thyroid nodules are common in both hyperthyroid and euthyroid patients; they are present in half of all thyroid glands that are subject to careful pathologic examination[1]. Clinically palpable nodules are encountered in about 8% of the adult population[2]. With the use of imaging techniques, particularly ultrasound, the chance of detection of thyroid nodules has increased significantly.[3-5]

Incidence of thyroid nodules is more common in females as compared to males. Thyroid cancers occur in approximately 5% of all thyroid nodules independent of their size.[6-7] Overall incidence of malignancy in Solitary nodules of thyroid ranges from 10% to 30%. Thyroid nodule is a palpably or radiologically distinct lesion from the surrounding thyroid parenchyma.[8] Every non-functioning solitary nodule diagnosed as follicular or oxyphilic neoplasia is an indication for surgery since

FNAC is unable to distinguish between benign and malignant follicular lesions.[9]Due to the low risk of malignancy in nonpalpable nodules that are incidentally detected by thyroid imaging, most patients can be managed by simple follow-up neck palpation[10]. When a thyroid nodule enlarged despite thyroid stimulating hormone (TSH) suppressive therapy with thyroxine, this is an indication for surgery. Study aimed to find the incidence of malignancy in solitary nodule thyroid.

METHODS

A prospective study had been carried out, in the Department of General surgery, SMBT IMSRC Nashik India. 40 patients, who presented with solitary thyroid nodule and underwent surgery were selected and included in this study. Inclusion criteria: Patients with solitary thyroid swelling, and between 15 to 65 years of age, both male and female patients. A nodule was considered solitary if no other nodules in the gland were identified by ultrasonography. The presence of other nodules, irrespective of size, excluded patients from the study. Patients included in the study were asked about history related to the thyroid swelling and relevant questions to the etiological cause. Present, past and family history of thyroid, and other relevant histories were asked. Detailed General physical, clinical examination and thyroid swelling examination was done. The patients were investigated. Apart from routine investigations, all patients had a thyroid profile, fine needle aspiration cytology (FNAC), X-ray of the neck-antero-posterior and lateral views, ultrasound neck, chest X-ray and indirect laryngoscopy were done. Patients underwent surgery and the histopathological reports were evaluated and correlated with clinical diagnosis by standard statistical methods.

RESULTS

In this study 40 patients were included. 15% of patients were male and 85% were female. The mean age of the studypatients was 39 years. Minimum age was 15years and maximum age was 65years. Female preponderance was more than male(Fig1). All the cases in the present study presented complaint of swelling in the region of the thyroid. Only a few patients presented with pain, discomfort, and dysphagia. All the mentioned additional symptoms were of mild degree.
After the final histopathology, the Adenomatous colloid goiters were observed in 16 patients (40%), followed by Nodular goiter in 8 patients (20%). There were 6 patients (15%) who had Follicular adenoma. Of the 54 specimens examined, 9 (22.5%) were papillarycarcinomas, 1 (2.5%) were follicular carcinomas.(Table1). The incidence of malignancy in the present series is 25%. In the present series, papillary carcinoma is the commonest malignancy of Solitary Thyroid nodule 9 (90%) of the total of 10 malignancies. The mean age of the incidence of solitary thyroid nodule is 37 years. Routine thyroid function test (TFT) was done in all patients and all were found to be in euthyroid state.

Fig1: Distribution of age and sex in the incidence of solitary thyroid nodule.

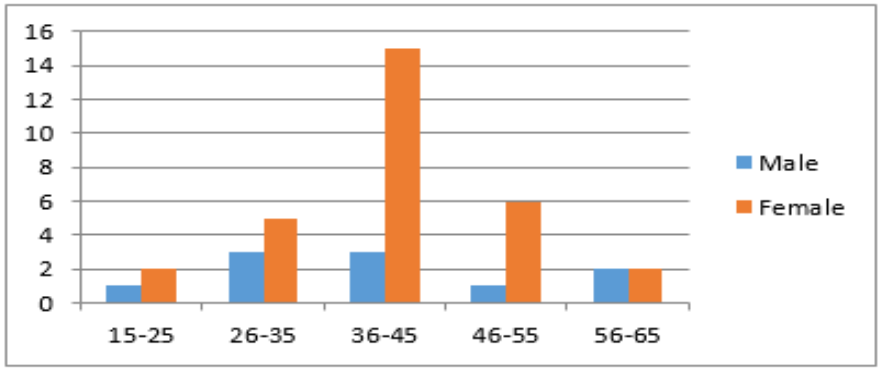

Table 1: Results of histopathology of the biopsies in solitary thyroid nodule (n=40).

Histopathological Findings	Patients
Benign Lesions	
Adenomatous colloid	16(40%)
Nodular goiter	8(20%)
Follicular adenoma	6(15%)
Malignant Lesions	
Papillary CA	9(22.5%)
Follicular CA	1(2.5%)

DISCUSSION:

Thyroid nodule refers to a distinct lesion within the thyroid gland that is palpably or radiologically distinct from the surrounding thyroid parenchyma. Benign causes of thyroid nodule include the colloid nodule and the classical multinodular goiter. Occasionally, nodularity is noticed inpatients with Hashimoto's thyroiditis and Graves' disease. Malignant causes of nodules include thyroid cancer, lymphoma as well as metastasis to the thyroid gland. In our sudy, after final histopathology, papillary carcinomas were frequent 9 of 10, and the remaining 1 were follicular carcinoma. The highest numbers of thyroid nodules were seen in the age group of 35-45years, the mean age of patients was 39 years. Stoffer et al, reported that 13.8% of glands resected in thyroid operation for any reason contained carcinoma. In this study, the accuracy of FNAC is 98.1%. In 1964 Veith FJ, Brooks JR, Grigsby WP, et al: reported a series of 299 patients who were found to have single thyroid nodules at the time of surgery, The great majority of which were papillary adenocarcinoma. A study by Dr Aimal Munir Tarrar et al, 60 patients with clinical solitary thyroid nodule were included. Maximum malignant cases were (50%). Papillary CA was the common malignancy (50%).Khairy GA, studied on the surgical and histological data of 172 patients with solitary thyroid nodules who underwent surgery were reviewed. Thirteen-point nine percent (13.9%) of patients were found to have malignancy; most of them were papillary type. In 1975 Gogas JG, Skalheas GD, in their study on 1300 thyroidectomies of which 70 had carcinoma. The incidence of malignancy in solitary nodule was 9.7% compared to our study shown 25% incidence. Hossain MA et al[11], observed that male to female ratio was 1:7 and the highest number of patients with thyroid nodule were found in age group 31- 40years. Malignancy in solitary thyroid nodule shows 19 (15.3%). Babu R et al[12], in 2015 studied on malignant incidence in solitary nodule thyroid.

Conclusion: In the present study Incidence of malignancy of solitary nodule is about 25%. Which was more than in other published series. but our cases are truly solitary nodules based upon ultrasonography and histopathological examination. The mean age of solitary nodule thyroid is 39 years with female preponderance

REFERENCES:

1. Tai JD, Yang JL, Wu SC, Wang BW, Chang CJ. Risk factors for malignancy in patients with solitary thyroid nodules and their impact on the management. J Cancer Res Therpeut. 2012;8(3):379-83.

2. Sarda AK, Gupta A, Jain PK, Prasad S. Management options for solitary thyroid nodules in an endemic goitrous area. Postgrad Med J 1997;73:560-4.

3. Hegedüs L. The thyroid nodule. New Eng J Med. 2004 Oct 21;351(17):1764-71.

4. Yeung MJ, Serpell JW. Management of the solitary thyroid nodule. Oncologist. 2008 Feb 1;13(2):105- 12.
5. Usha VM, Sundaram KR, Unnikrishnan AG, Jayakumar RV, Nair V, Kumar H. High prevalence of undetected thyroid disorders in an iodine sufficient adult south Indian population. Journal of the Indian Med Assoc. 2009 Feb;107(2):72-7.

6. Gupta M, Gupta S, Gupta VB. Correlation of fine needle aspiration cytology with histopathology in the diagnosis of solitary thyroid nodule. J Thyroid Res. 2010;2010:379051.

7. Iqbal M, Mehmood Z, Rasul S, Inamullah H, Shah SS, Bokhari I. Carcinoma thyroid in multi and in inodular goiter. J Coll Physicians Surg Pak. 2010;20:310-2.

8. Harrison BJ, Maddox PR, Smith DM. Disorders of thyroid gland. In: Cuschieri A, Steele RJ, Moossa AR, editors. Essential Surgical Practice. 4th ed. London: Arnold; 2002. p. 95-110.

9. Baloch ZW, Sack MJ, Yu GH, LiVolsi VA & Gupta PK. Fine-needle aspiration of thyroid: an institutional experience. Thyroid 1998; 8: 565-569.

10. Tan GH & Gharib H. Thyroid incidentalomas: management approaches to nonpalpable nodules discovered incidentally on thyroid imaging. Annals ofInternal Medicine 1997; 126: 226-231.

11. Hossain MA, Sarkar MZ, Dutta UK, Karim MA, Alam MZ. Frequency of Malignancy in solitary Thyroid nodule and Multi-nodular Goitre. Bangladesh J Otorhinolaryngol. 2015 Feb 9;20(2):55-9.

12. Babu R, Shyamala M, Reddy SK. Malignant incidence in solitary nodule thyroid - a clinical study. IJAR. 2015;5(2).