

Assessment of Incidence of Malignancy in Clinically Benign Thyroid Swelling: A Retrospective Study

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ABSTRACT

Background: Thyroid nodules are discrete lesions within the thyroid gland, radiologically distinct from surrounding thyroid parenchyma. Thyroid cancers occur in approximately 5% of all thyroid nodules independent of their size. Hence; the present study was conducted with aim of assessing the incidence of malignancy in clinically benign thyroid swelling. **Methods:** A total of 150 patients with clinical evident benign thyroid swellings were enrolled. Complete demographic and clinical details of all the patients were obtained. Among these 150 patients, 96 patients were clinically diagnosed to be multi nodular goitre, while the remaining 54 patients were of clinically diagnosed to be solitary nodule of thyroid. Appropriate surgery was done. Thyroid specimens subjected to histopathological examination. Confirmatory diagnoses were obtained based on histopathologic examination. **Results:** A total of 150 patients with presence of clinical benign thyroid swellings were included. 96 patients were clinically diagnosed to be multi nodular goitre, while the remaining 54 patients were of clinically diagnosed to be solitary nodule of thyroid. Out of 96 patients with presence of multi-nodular goitre, malignancy was detected in 5.2 percent of the cases. Out of 54 patients with presence of solitary nodule of thyroid, malignancy was detected in 5.55 percent of the cases. Overall, malignancy was detected in 5.33 percent of the cases. **Conclusion:** There are significant chances of occurrence of malignancies in clinically benign thyroid swellings. Investigations should be carried out in such lesions for better prognosis.

Keywords: Malignancy, Swellings, Thyroid.

INTRODUCTION

Thyroid nodules are discrete lesions within the thyroid gland, radiologically distinct from surrounding thyroid parenchyma. They might be discovered by palpation during a general physical examination or with radiographic studies performed for medical evaluations. Conversely, clinicians may identify palpable thyroid lesions that do not correspond to distinct radiological entities, and therefore would not be defined as thyroid nodules.^[1-3]

Clinically palpable nodules are encountered in about 8% of the adult population. With the use of imaging techniques, particularly ultrasound, the chance of detection of thyroid nodules has increased many folds. The prevalence of palpable thyroid nodule in South India is about 12.2%. However, the reported incidence of thyroid cancer in general population is low, being only about 1%. Thyroid cancers occur in approximately 5% of all thyroid nodules independent of their size. The recent data suggest that the incidence of thyroid malignancy is increasing over the years. The occurrence of malignancy is more in solitary thyroid nodules (STN) compared to multinodular goiter.^{4- 6}Hence;

the present study was conducted with aim of assessing the incidence of malignancy in clinically benign thyroid swelling.

MATERIALS AND METHODS

The present study was conducted in JLNMC Bhagalpur from March 2018 to Feb 2020. with the aim of assessing the incidence of malignancy in clinically benign thyroid swelling. Ethical approval was obtained from institutional ethical committee and written consent was obtained from all the patients after explaining in detail the entire research protocol. A total of 150 patients with clinical evident benign thyroid swellings were enrolled. Inclusion criteria for the present study included:

- Patients within the age group of 20 to 60 years,
- Patients with negative history of diabetes or hypertension,
- Patients with presence of clinical benign thyroid swelling

Complete demographic and clinical details of all the patients were obtained. Among these 150 patients, 96 patients were clinically diagnosed to be multi nodular goitre, while the remaining 54 patients were of clinically diagnosed to be solitary nodule of thyroid. Patients underwent fine-needle aspiration cytology (FNAC) for preoperative pathological diagnosis. Appropriate surgery was done. Thyroid specimens subjected to histopathological examination. Confirmatory diagnoses were obtained based on histopathologic examination. All the results

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were recorded in Microsoft excel sheet and were analysed by SPSS software.

RESULTS

In the present study, a total of 150 patients with presence of clinical benign thyroid swellings were included. 96 patients were clinically diagnosed to be multi nodular goitre, while the remaining 54 patients were of clinically diagnosed to be solitary nodule of thyroid. Out of 96 patients with presence of multi-nodular goitre, malignancy was detected in 5.2 percent of the cases. Out of 54 patients with presence of solitary nodule of thyroid, malignancy was detected in 5.55 percent of the cases. Overall, malignancy was detected in 5.33 percent of the cases. In the present study, among the 8 patients with presence of malignant pathology, papillary carcinoma was found to be present in 5 patients

while follicular carcinoma was found to be present in 3 patients. There were 4 females and 4 males.

Table 1: Incidence of malignancy among clinically multi nodular goiter

Incidence of malignancy	Number of patients	Percentage of patients
Clinically multi nodular goitre	5	5.20

Table 2: Incidence of malignancy among clinically solitary nodule of goiter

Incidence of malignancy	Number of patients	Percentage of patients
Clinically solitary nodule of thyroid	3	5.55

Table 3: Overall Incidence of malignancy

Incidence of malignancy	Number of patients	Percentage of patients
Overall	8	5.33

Table 4: Profile of patients with histopathologic confirmed diagnosis of malignancy

S No	Age (years)	Gender	Clinical lesion	Histopathologic diagnosis
Patient 1	34	Males	Solitary nodule of thyroid	Papillary carcinoma
Patient 2	46	Females	Solitary nodule of thyroid	Follicular carcinoma
Patient 3	58	Females	Solitary nodule of thyroid	Papillary carcinoma
Patient 4	41	Males	Multi nodular goitre	Papillary carcinoma
Patient 5	22	Females	Multi nodular goitre	Follicular carcinoma
Patient 6	39	Males	Multi nodular goitre	Papillary carcinoma
Patient 7	54	Males	Multi nodular goitre	Follicular carcinoma
Patient 8	48	Females	Multi nodular goitre	Papillary carcinoma

DISCUSSION

An increased incidence of thyroid carcinoma has been noted in endemic goitre regions as well as in non -endemic goitre regions. Follicular thyroid carcinoma (FCA) and anaplastic thyroid carcinoma (ANA) occurred more frequently in endemic goitre regions than in goitre -free areas. This implies that highly aggressive thyroid cancer prevails in countries with endemic goitre. The spectrum of disorders associated with thyroid nodules ranges from benign etiologies to malignant conditions that may either have an indolent course or a very aggressive behavior. Therefore, clinical evaluation is best tailored to identification of clues suggestive of malignant disease. A careful history and physical examination should include information regarding previous radiation treatment of the head and neck area; growth of a neck mass; location, size, and consistency of the thyroid nodule; cervical lymphadenopathy; associated local symptoms such as pain, hoarseness, dysphagia, dysphonia, and dyspnea; and symptoms of hypothyroidism or hyperthyroidism.^[7-9] Hence; the present study was conducted with aim of assessing the incidence of malignancy in clinically benign thyroid swelling.

In the present study, a total of 150 patients with presence of clinical benign thyroid swellings were included. 96 patients were clinically diagnosed to be multi nodular goitre, while the remaining 54 patients

were of clinically diagnosed to be solitary nodule of thyroid. Out of 96 patients with presence of multi-nodular goitre, malignancy was detected in 5.2 percent of the cases. Out of 54 patients with presence of solitary nodule of thyroid, malignancy was detected in 5.55 percent of the cases. Jena A et al analyzed their departmental data over a period of 5 years. All the patients who presented to the outpatient department with a clinically detected STN were included. Preoperative ultrasonography (USG) and fine-needle aspiration cytology were planned in all these patients. There were 162 cases of clinically detected STN. USG findings were available in 146 cases. Postoperative histopathology was reported as malignant in 58 cases. Malignant STN was more likely in males. Ultrasonographically detected solid STN were more prone for malignancy as compared to multinodular goiter. Presence of micro calcification and cervical lymphadenopathy were more commonly noted in malignant thyroid swellings. Solitary thyroid nodules do have a high likelihood of harboring a malignancy.^[10] Nodular thyroid disease and goiter are frequent conditions in the general population, with an age-related increasing incidence reaching 30–50% in people over 50 years in ultrasound studies. Most of these nodules are benign, but the overall reported malignancies rate is about 5–10%. The age-standardized incidence of thyroid cancer is estimated to be 0.9% (females) and 0.2% (males) in developed

countries and related to iodine deficiency status. The prevalence of benign nodular thyroid disease and malignancy in patients with acromegaly has been a matter of debate. In previous studies performed many years ago, goiter and thyroid nodules appeared to be more frequent among patients with acromegaly, but the prevalence of thyroid carcinoma was thought to be low, and its true incidence was unknown.^[8-12]

In the present study, overall, malignancy was detected in 5.33 percent of the cases. In the present study, among the 8 patients with presence of malignant pathology, papillary carcinoma was found to be present in 5 patients while follicular carcinoma was found to be present in 3 patients. There were 4 females and 4 males. Khan SA et al analysed pattern of malignancies in clinically solitary thyroid nodule. Among 108 cases of solitary thyroid nodule only 19 cases were malignant. Patients with malignant lesion presented with shorter duration of symptoms. Out of 19 malignant cases 6(31.58%) cases presented with features of metastasis. Out of 19 malignant cases, 12(63.16%) were papillary carcinoma, 5(26.31%) were follicular carcinoma and 2(10.53%) cases were medullary carcinoma. Study showed significant difference ($p < 0.01$) between papillary & follicular carcinoma and significant difference ($p < 0.001$) between papillary & medullary carcinoma.^[13]

CONCLUSION

From the above results, the authors conclude that there are significant chances of occurrence of malignancies in clinically benign thyroid swellings. Investigations should be carried out in such lesions for better prognosis.

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