



OBSERVATIONAL STUDY ON INCIDENCE OF INCIDENTAL MALIGNANCY IN MULTINODULAR GOITRE PATIENTS WHO UNDERWENT TOTAL THYROIDECTOMY AT A TERTIARY CARE CENTRE IN NORTH KERALA

General Surgery

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ABSTRACT

Introduction: Incidental thyroid malignancy is the term applied to unsuspected cancer identified incidentally on pathologic examination of thyroid tissue removed for benign disease. Early detection and treatment of thyroid cancer helps in decreasing the morbidity and mortality of the patient. There have been very few studies related to incidental thyroid carcinoma in this part of the world. Therefore, this study can act as a baseline study for further research. **Materials And Methods:** From October 2020 to October 2022, 50 patients with multinodular goiter who fulfilled the inclusion criteria were selected. These patients were subjected to detailed history taking, clinical examination and preoperative workup. History, clinical examination findings, investigations, operative and the post-operative findings were recorded in detail in a proforma. Outcome measurement was done by comparing the final histopathological report with clinical diagnosis and FNAC report. **Results:** Among the 50 patients with a female: male ratio of 4:1, majority (44%) belonged to 40-50 years of age group. Out of the 50 patients with preoperatively benign multinodular goiter, Postoperative histopathological report came as malignant among 7 patients (14%), all of them were females. The commonest type of incidental thyroid malignancy among the studied population was micro papillary carcinoma, being present in 4 of the 7 cases (57.15%). Papillary carcinoma was found in 3 patients (42.85%). **Conclusion:** There is a trend towards rise in the incidence of incidental thyroid cancers. Total thyroidectomy as initial surgery for benign disorders reduces the morbidity of second surgery. Identifying incidental thyroid cancers early can help in planning definitive management early and thus achieving cure in the patients.

KEYWORDS

Incidental thyroid cancer; thyroidectomy; papillary carcinoma; micropapillary carcinoma.

INTRODUCTION

Multinodular goitre (MNG) is the most prevalent thyroid pathology. MNG occurs in upto 12% of adults depending upon the population studied. Although the majority are benign, the incidence of occult malignancy in MNG varies from 4 to 17%. Accurate preoperative diagnosis of malignancy is therefore very important for appropriate management of the patient with MNG [1].

The prevalence of incidental thyroid cancer (ITC) in multinodular goitre (MNG) has been previously estimated to be 5 - 10% [2]; however, recent studies have reported higher ITC prevalence rates, ranging from 8.6 to 22% [2]. Further, the detection rate of ITC on autopsy examination has been reported to be steadily rising, with an estimated increase from 6% in 2003 to 20% in 2012[3]. This perceived increase might have been a consequence of the high prevalence of thyroid nodules detected in the autopsy series of 50% [4]. Bae et al have found that the prevalence of malignancy in patients with incidentally identified thyroid lesions on fluoro-deoxyglucose positron emission tomography examination is higher than 23[5]%.

MATERIALS AND METHODS

This is an observational study conducted at the General Surgery department in KMCT medical college, Manassery, Kozhikode, from October 2020 to October 2022.

Sample Size

50 patients with multinodular goitre admitted to surgical ward of KMCT medical college were selected by non-probability sampling method.

Inclusion Criteria

1. Adults (age $\geq$ 25 years - 70 years).
2. Multinodular goiter without thyrotoxicosis and those who subsequently underwent total thyroidectomy.

Exclusion Criteria

1. Toxic diffuse goitre/ Graves disease
2. Recurrent goitre
3. Solitary nodule.
4. Proven thyroid malignancy.
5. Associated carcinoma of other organ.

6. Recurrent carcinoma of thyroid.
7. Metastatic cervical lymphadenopathy with occult primary
8. History of irradiation to neck
9. Family history of a thyroid malignancy.

Patients admitted with multinodular goitre fulfilling the inclusion criteria were subjected to detailed history taking and thorough clinical examination. Routine investigations along with TSH, FT3, FT4, indirect laryngoscopy, ultrasound of the neck, and fine needle aspiration cytology of thyroid nodule were done. Ultrasound and fine needle aspiration cytology were suggestive of benign features. All the 50 patients underwent total thyroidectomy with a preoperative diagnosis of multinodular goiter. Intraoperative and postoperative period were uneventful for all the patients. Specimen were sent for histopathological examination. History, clinical examination findings, investigations, operative and the post-operative findings will be recorded in detail in a proforma. Outcome measurement was done by comparing the final histopathological report with clinical diagnosis and FNAC report.

OBSERVATIONS AND RESULTS

Out of 50 patients with a female: male ratio of 4:1, majority (44%) belonged to 40-50 years of age group. The Chief complaint in our patients (100 %) was swelling in front of the neck. Duration of swelling ranged from 1 year to 10 years. In this study, the duration of swelling is inversely related to the incidence of malignancy. Maximum incidence of malignancy is seen in 1 to 4 years duration of the swelling. All the 50 patients underwent total thyroidectomy with a preoperative diagnosis of multinodular goiter.

Out of the 50 patients with preoperatively benign multinodular goiter, Postoperative histopathological report came as malignant among 7 patients (14%), all of them were females. Among incidental thyroid malignancies, the commonest type was micro papillary carcinoma, being present in 4 of the 7 cases (57.15%). Papillary carcinoma was found in 3 patients (42.85%).

Table 1: Fnac-frequency Distribution Of Patients Studied

FNAC	%
CG/CNG	100

MALIGNANT	0
Total	100

Table 2: Histopathological Report

HISTOPATHOLOGICAL REPORT	%
BENIGN	86
MALIGNANT	14
Total	100

Out of the 50 patients with preoperatively benign multinodular goiter, Post-operative histopathological report came as malignant among 7 patients (14%)

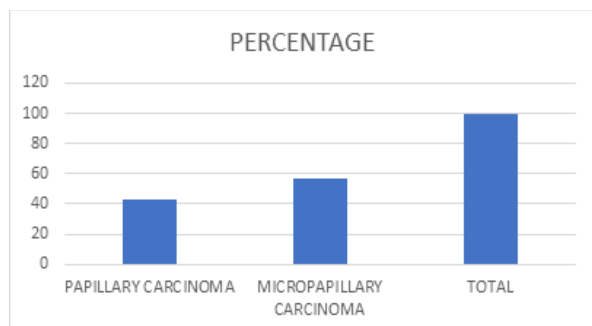
Table 3: Comparison Of Baseline Clinical Variables According To Hpr

Variables	HISTOPATHOLOGICAL REPORT		Total	P Value
	BENIGN	MALIGNANT		
AGE IN YEARS				
·25-30	2.3	0	2	0.383
·30-40	16.3	28.6	18	
·40-50	46.5	28.6	44	
·50-60	18.6	42.9	22	
·>60	16.3	0	14	
GENDER				
·Female	76.7	100	80	0.319
·Male	23.3	0	20	
SWELLING DURATION (YRS)				
·1-2	16.3	42.9	20	0.473
·3-4	37.2	42.9	38	
·5-6	32.6	14.3	30	
·7-8	11.6	0	10	
·9-10	2.3	0	2	
Total	100	100	100	

As the age increases the incidence of malignancy increases, in this study the incidence is more among age group 50-60 years. The incidence of malignancy is more among females. In this study, the duration of swelling is inversely related to the incidence of malignancy.

Table 4 : Types Of Incidental Thyroid Malignancy Of Patients Studied

TYPE OF INCIDENTAL CANCER	NO. OF PATIENTS	PERCENTAGE
PAPILLARY CARCINOMA	3	42.85
MICROPAPILLARY CARCINOMA	4	57.15
TOTAL	7	100

**Figure 1: Types Of Incidental Thyroid Malignancy Of Patients Studied**

Among incidental thyroid malignancies, the commonest type was micro papillary carcinoma, being present in 4 of the 7 cases (57.15%). Papillary carcinoma was found in 3 patients (42.85%).

DISCUSSION

In this study maximum age of presentation was 70 years and minimum age was 26 years. Out of 50 patients, majority (44%) belonged to 40-50 years of age group, 22% belonged to 50-60 years of age group, 18% belonged to 30-40 years of age group, 14% belonged to above 60 years of age, 2% belonged to 25-30 years of age group. This is comparable to the study conducted by Nikhil Nanjappa et al in 2013[6]. Out of the

fifty cases studied, 10 were males (20 %) and 40 were females (80%) with a female to male ratio of 4:1. This result was comparable to a similar study conducted by D. Askitis et. Al (2013) (182 female and 46 male patients) the female: male ratio was found to be 4:1[7].

The Chief complaint in our patients (100 %) was swelling in front of the neck. Duration of swelling ranged from 1 year to 10 years. Majority of patients (38%) belonged to 3-4years duration, 30 % of patients belonged to 5-6 years of swelling duration, 20 % of patients belonged to 1-2 years of duration, 10% of patients belonged to 7-8 years of swelling duration, only 2 % of patients belonged to 9-10 years of swelling duration. In this study, the duration of swelling is inversely related to the incidence of malignancy. Maximum incidence of malignancy is seen in 1 to 4 years duration of the swelling.

Out of the 50 patients with preoperatively benign multinodular goiter, Postoperative histopathological report came as malignant among 7 patients (14 %). In the study conducted by Nikhil Nanjappa et al, the incidence of incidental cancer was found to be 20.3 % (38 out of 187 patients)[6]. In another study conducted by D. Askitis et.al, the incidence was found to be 14.5 % (33 out of 228)[7]. Another retrospective study done by Gandolfi et al, demonstrate that in 58 operated cases of MNG, 8 [13.7%] of the patients had the presence of a carcinoma by definitive histopathologic examination. 5 of the malignant lesions were papillary carcinoma [62.5%], 2 were hurthle cell carcinoma and 1 was follicular carcinoma. In various other studies around the world, the incidence varies between 3 % and 22%.

Among incidental thyroid malignancies, the commonest type was micro papillary carcinoma, being present in 4 of the 7 cases (57.15%). Papillary carcinoma was found in 3 patients (42.85%).

In the study conducted by Nikhil Nanjappa et al and D. Askitis et al, commonest malignancy was found to be papillary carcinoma (47%) and (55%) respectively.

CONCLUSION

Incidental thyroid cancers are increasing in incidence; probably because pathologists have become more confident in recognizing and reporting focal points of malignancy that used to be missed previously, due to availability of better microtomes and thinner sections of specimen.

The usefulness of identifying incidental thyroid cancer early is that it can be managed at an incipient stage and cure can be achieved. Total thyroidectomy as initial surgery for benign disorders reduces the morbidity of second surgery.

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