

ORIGINAL ARTICLE

Thyroid Malignancy in Multi Nodular Goitre

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ABSTRACT

Introduction

Multi-nodular goitre (MNG) is one of the common presentations of various thyroid diseases. Careful examination discloses their presence in at least 4% of the general population. Nodules less than 1 cm in diameter not clinically detectable unless located on the surface of the gland, are much more frequent. Although MNG was traditionally thought to be at a low risk for malignancy as compared to its single-nodule counterpart, various studies have reported a significant risk. The objective of this study was to determine the incidence and the type of thyroid carcinoma (TC) in multi-nodular goitre by doing the histopathological examination of thyroidectomy specimens.

Materials and Methods

This prospective, observational study was carried out in the Department of Surgery at Govt. Sivagangai Medical College, Tamilnadu, India. All the patients with multi-nodular goitre with or without thyrotoxicosis were evaluated and they were offered surgery as the treatment for suspicious findings, cosmesis, compressive symptoms and thyrotoxicosis. The specimens were subjected to a histopathological evaluation to determine the incidence and the types of various malignancies in MNG.

Results

Among the 65 MNG cases which were studied, 8 (12%) cases contained malignant foci. Among them, papillary carcinoma (88%) was the most common type of malignancy which was observed.

Conclusion

The incidence of malignancy in MNG is quite significant and it is not very low as was thought before. Due to the risk of occult malignancy, all the patients with multi-nodular goitres who are treated conservatively need a close follow up for malignancy

INTRODUCTION

The normal thyroid gland is a fairly homogenous structure, but nodules often form within its substance. These nodules may be only the growth and fusion of localized colloid-filled follicles, or more or less discrete adenomas, or cysts. Nodules larger than 1 cm may be detected clinically by palpation. Careful examination discloses their presence in at least 4% of the general population. Nodules less than 1 cm in diameter not clinically detectable unless located on the surface of the gland, are much more frequent. The terms adenomatous goiter, nontoxic nodular goitre, and colloid nodular goitre are used interchangeably as descriptive terms when a multinodular goiter is found.^{1,2,3}

MNG had been traditionally thought to be at a low risk for malignancy as compared to a solitary nodule thyroid^{4,5,6}. However, various studies have reported a 7 to 17% incidence of malignancy in MNG.^{5,7,8}

Exposure to ionizing radiation, changing levels of iodine nutrition and increased pathologic diagnosis of clinically unimportant thyroid neoplasia have all been proposed as explanations for a world wide rise in the incidence of thyroid carcinoma over the past six decades.⁸⁻¹¹ The objective of this study was to determine the frequency of thyroid carcinoma in multinodular goitre in patients undergoing thyroidectomy.

METHOD

This prospective, observational study was carried out in the Department of Surgery at the Govt. Sivagangai Medical college, Tamilnadu.

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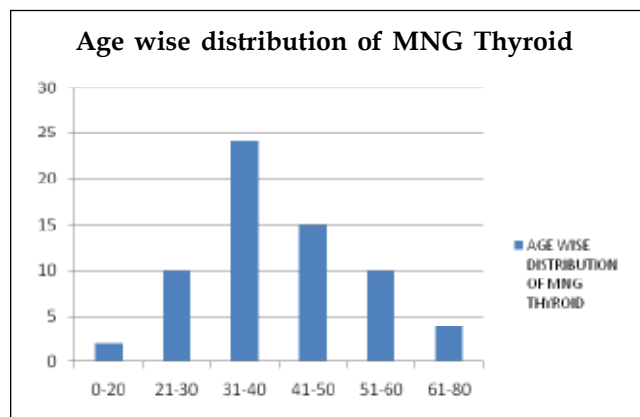
All patients with goitres examined clinically and sonologically. Patients with multi nodular goitre were selected for the study. Solitary nodule thyroid, graves disease and metastatic cervical lymphadenopathy were excluded from the study.

All patients underwent pre operative evaluation including thyroid profile, USG neck, ENT evaluation, FNAC from the nodule .

The patients were offered surgery as a treatment based on the suspicious findings during the diagnostic work-up, equivocal results from the various investigations, the compressive symptoms, thyrotoxicosis and cosmesis. In all the selected cases of MNG, total thyroidectomy was performed following the identification and the preservation of the recurrent laryngeal nerves and the parathyroid glands. After the surgery, all the thyroid specimens were sent for a histopathological evaluation. All pre-operative, operative and the post-operative findings were recorded in detail in a standard format and the results were evaluated

RESULTS

In this study, we had 65 cases of multi nodular goitre who underwent total thyroidectomy. Of which, 62 (95%) were female and 3(5%) were male, showing a female preponderance. Majority of patients were in 4th [37%] and 5th [23%] decade.



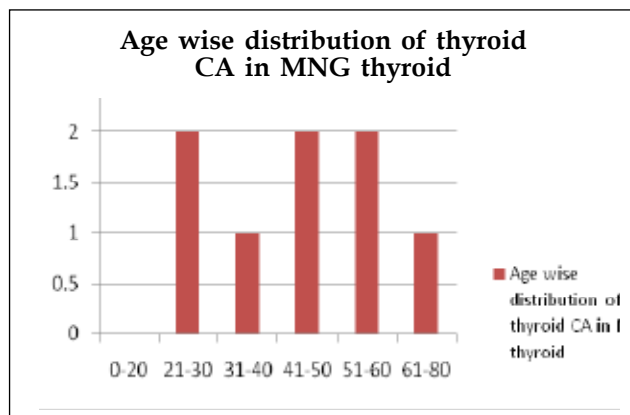
FNAC reports showed 56 cases as benign, 3 cases malignant and 6 inconclusive.

TABLE 1

Depicting the postoperative biochemical parameters after the first operation

Postoperative Day	S. Calcium (mg/dl)	S. Phosphorous (mg/dl)	PTH (pg/ml)
1	11.0	2.8	268.9
2	10.5	-	275
5	11.0	-	-

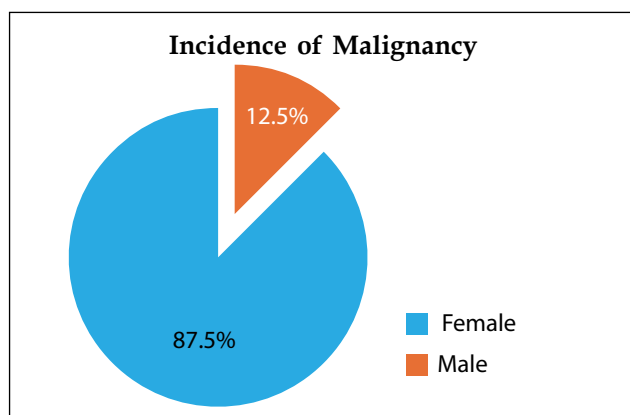
The patients were offered surgery as the treatment based on the suspicious findings during the diagnostic work-up, the equivocal results from the various investigations, the compressive symptoms, thyrotoxicosis and cosmesis. In all the cases, total thyroidectomy was carried out and the specimens were subjected to a histopathological evaluation. The histopathology of the specimens revealed that 8 patients had a malignant focus and so the incidence of Ca in MNG was 12.5% in our study. (Table/Fig. 2)



TABLE/FIGURE 2

NO. OF CASES	BENIGN	APILLARY CA	NA PLASTIC CA	TOTAL
	57	7	1	65

Among the malignancies, papillary carcinoma (87.5%) was the commonest type which was observed in MNG in our study (Table 3). The common age group for the presentation of carcinoma of the thyroid was 3rd, 5th and 6th decade in our study (Table/Fig-4). Of the 8 patients with MNG and carcinoma of the thyroid, 7 were females and 1 was male. (Table/Fig. 4)



CONCLUSION

The risk of malignancy in multinodular goitre should not be underestimated. Dominant nodule in multinodular goitre should be considered as

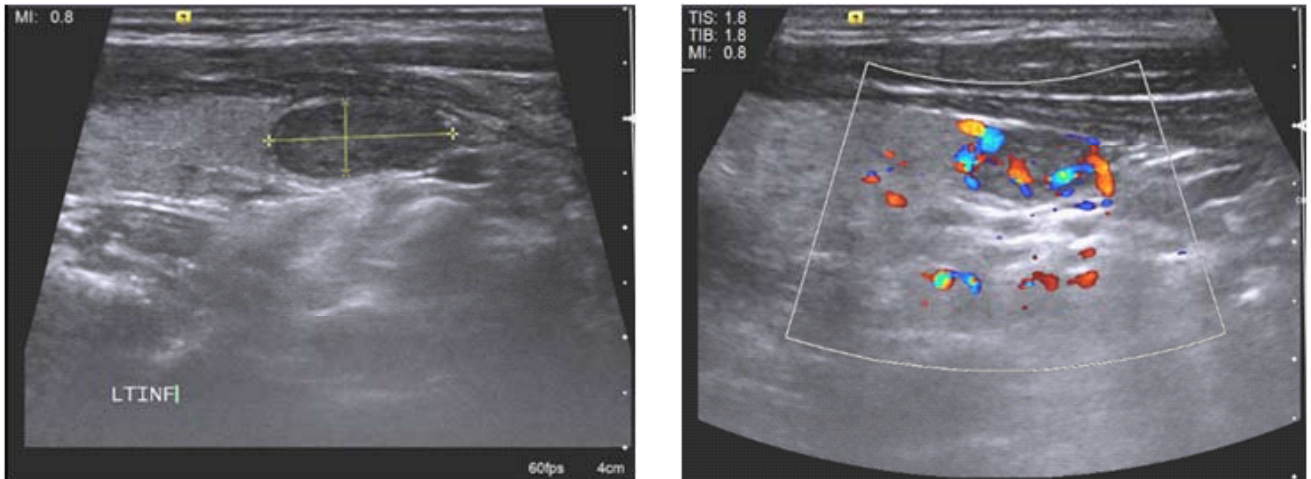


Fig. 1 : Depicting a hypochoic lesion with internal vascularity in the region pole the lower pole of the thyroid

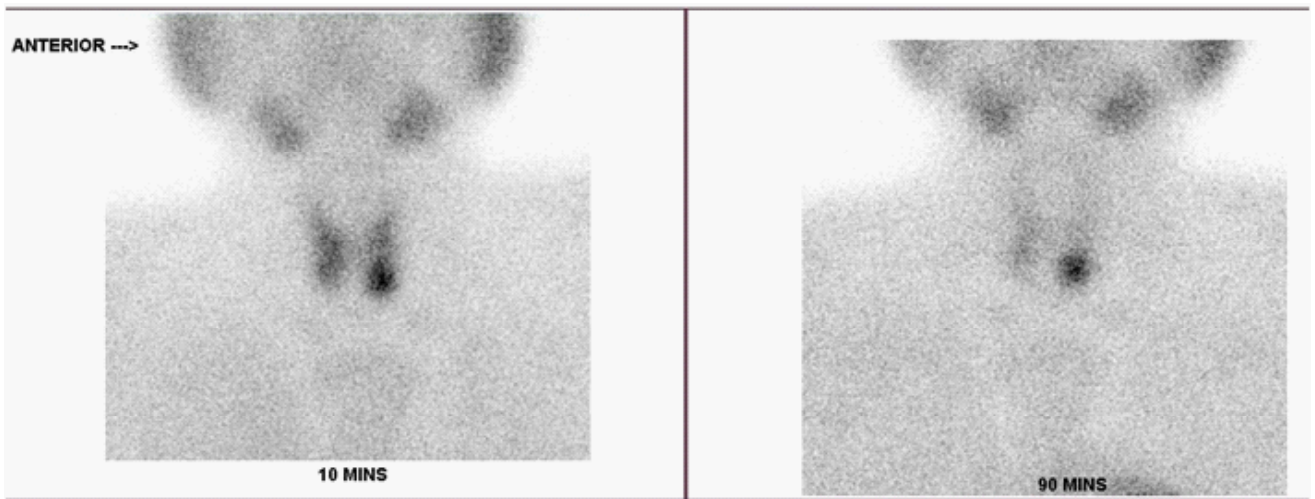


Fig. 2 : 99mTc Sestamibi scan depicting persistence of tracer accumulation in the region of left inferior parathyroid gland at 90 minutes

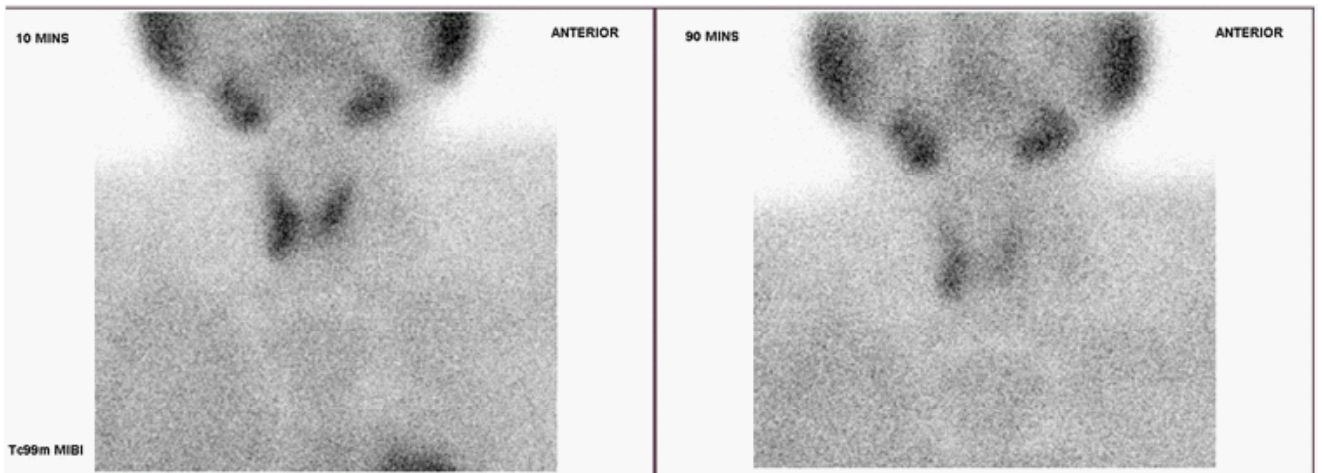


Fig. 3 : 99mTc Sestamibi showing persistence of tracer accumulation in region of right inferior parathyroid gland at 90 minutes

significant as solitary nodule in an otherwise normal gland. Risk of malignancy in multi-nodular goitre is not as low as it was thought before and that it is quite significant. Due to the risk of occult malignancy, all the patients with multi-nodular goitre who have been treated conservatively need a close follow up for malignancy

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