



General Surgery

CLINICO-PATHOLOGICAL PROFILE AND PREVALENCE OF MALIGNANCY IN NODULAR GOITER - A RETROSPECTIVE STUDY

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ABSTRACT

Aims and objectives The present study is undertaken to evaluate patients with thyroid nodules in terms of age, sex distribution, clinical presentation, duration of symptoms and to evaluate the prevalence of malignancy in nodular goiter. **Materials and methods:** In our study we have taken records of 50 patients presented with goiter to the Department of General Surgery in the past one year (JAN 2021-JAN 2022). **Inclusion criteria:** Those records with clinical and other details of the patients presented with goiter will be included. **Exclusion criteria:** Those records with incomplete data will be excluded. **Results:** A total of 50 patients of nodular goiters were studied from January 2021 to January 2022. Majority of the patients presented with multi nodular goiter, belonging to the age group between 30-45 years and are females. The most common presenting complaint was a swelling in the neck. The most common FNAC and HPE finding in both the groups was nodular goiter. Malignancy common in both the groups was papillary carcinoma. In this study the prevalence of malignancy is 16%. Malignancy noted in MNG group was 17.5% and in SNG group was 10%. **Conclusion:** We conclude that the risk of malignancy in multi-nodular goiter is not as low as it was thought before and that it is quite significant. As notable malignancy was observed in nodular goiters, so early detection helps in better prognosis.

KEYWORDS : multinodular goiter(MNG), solitary nodular goiter (SNG),malignancy.**INTRODUCTION:**

- Thyromegaly can be the clinical manifestation of a wide spectrum of thyroid pathology, ranging from functional enlargements to immunologically mediated disorders to neoplastic lesions.^[1]
- Thyroid neoplasms usually present as a solitary palpable nodule or multiple discrete nodules. Rarely, a patient may present with obvious metastatic disease without a clinically detectable primary lesion. The incidence of thyroid malignancy varies from 0.9% to 13% worldwide^[2]. It is traditionally believed that solitary thyroid nodules are more likely to be neoplastic than multiple nodules.^[3]
- However, in recent past, various studies have reported a rising incidence of malignancy even in multinodular goiter^[4].
- Although fine-needle aspiration (FNA) is the most accurate and cost-effective method of thyroid nodule evaluation, benign cytological diagnosis is associated with false-negative rates of up to 3 per cent^[5].
- Further complicating this topic, FNA cytology may be non-diagnostic in up to 25 per cent of patients with nodular thyroid disease, and its performance in the setting of MNG presents other difficulties, including deeply located thyroid nodules that may be more challenging to aspirate as well as reliably evaluating all suspicious nodules.^[6]
- It is still a controversy as the management of solitary thyroid nodule, the two major issues being the diagnostic workup and extent of thyroidectomy. The goal of diagnostic work up is to select those patients who have a high likelihood of harboring malignancy in the nodule.
- Based on this background this study is undertaken to study the clinicopathological profile of the patients presenting with thyroid nodules and to evaluate the prevalence of malignancy in multinodular and solitary nodular goiters.

AIMS AND OBJECTIVES:

- The present study is undertaken to evaluate patients with thyroid nodules in terms of age, sex distribution, clinical presentation, duration of symptoms and to evaluate the prevalence of malignancy in nodular goiter.

MATERIALS AND METHODS:

- This is an observational study conducted in the Department of General Surgery, PES Hospital, Kuppam.
- In our study we have taken records of 50 patients presented with goiter to the Department of General Surgery in the past one year (JAN 2021-JAN 2022)

Inclusion criteria:

- Those records with clinical and other details of the patients presented with goiter will be included.

Exclusion criteria:

- Those records with incomplete data will be excluded.

OBSERVATIONS:**Table 1: Age and Gender distribution**

Age (in years)	MNG		SNG	
	Male	Female	Male	Female
< 30	00	04	00	04
30 - 45	04	15	00	05
46 - 60	01	11	00	01
> 60	00	05	00	00
Total	05	35	00	10

Interpretation: A total of 50 patients of nodular goiters were studied from January 2021 to January 2022. 40 patients (80%) presented with multi nodular goiter and 10 (20%) patients presented with solitary nodular goiter. Majority of the patients belongs to the age group between 30-45 years. 70% of the patients were females and 30% were males.

Table 2: Presenting complaints

Presenting complaints	MNG	SNG
Pain	08	03
Dysphagia	04	00
Dyspnea	00	00
Voice change	00	00
Toxic features	00	00
Duration of swelling (in months)	38.9	28.2

Interpretation: The most common presenting complaint was a swelling in the neck and the mean duration of swelling is 38.9 months in MNG patients and 28.2 months in SNG patients followed by pain.

Table 3: Type of Surgery performed

Type of Surgery done	MNG	SNG
Hemi Thyroidectomy	00	08

Total Thyroidectomy	40	02
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Interpretation: All the patients who presented with MNG underwent total thyroidectomy (100% of MNG cases).80% of SNG patients underwent hemi thyroidectomy and 20% of SNG patients underwent total thyroidectomy.

Table 4: FNAC findings

FNAC finding	MNG	SNG
Colloid Nodule	03	03
Nodular Goiter	25	03
Follicular Neoplasm	02	01
Hashimoto's Thyroiditis	02	01
Nodular Hyperplasia	04	01
Papillary Carcinoma	04	01

Interpretation: The most common FNAC finding was nodular goiter in MNG group and in SNG group was also nodular goiter.

Table 5: HPE findings

HPE finding	MNG	SNG
Follicular carcinoma	02	00
Hashimoto's Thyroiditis	00	01
MNG	33	08
Papillary Carcinoma	05	01

Interpretation: The most common finding on HPE in MNG and SNG group was nodular goiter. Malignancy common in both the groups was papillary carcinoma.

DISCUSSION:

- MNG is one of the common presentations of various thyroid diseases. A long standing and hitherto unresolved issue is whether MNG is significantly associated with malignancy. Thyroid nodules have been reported in 4% to 7% of the population on neck palpation (the incidence increases with age) and in 30% to 50% of the population by ultrasonography [7].
- FNAC is very useful in the diagnosis and management of MNG. Malignancy can still come as a surprise on postoperative histopathological examination, even when there is no suspicion of malignancy clinically and with FNAC [8].
- In this study 40 patients (80%) presented with multi nodular goiter and 10 (20%) patients presented with solitary nodular goiter. In a study conducted by Seetu Palo and et al. [9] 57.3% presented with MNG while SNG cases were 42.7%. Majority of the patients belonged to the age group between 30-45 years, this is comparable to the Dr. Rakesh Raj E [10] and et al in which the age range within 31-40 years. In this study females were 70% this is comparable to Borsaikia and Patar et al study [11] in which 83% were females. The most common presenting complaint was a swelling in the neck in this study which is comparable with Hanumanthappa.M.B and et al study[12] in which 92% of the patients presented with swelling in the neck. All the patients who presented with MNG underwent total thyroidectomy (100% of MNG cases).80% of SNG patients underwent hemi thyroidectomy and 20% of SNG patients underwent total thyroidectomy.
- In this study the prevalence of malignancy is 16% and the most common malignancy found in both the groups was papillary carcinoma. 4 cases were diagnosed as papillary carcinoma and 2 cases are diagnosed as follicular carcinoma in MNG group and 1 case was diagnosed as papillary carcinoma in SNG group by FNAC
- 5 cases in MNG group and 1 case in SNG group, were confirmed as malignancy by HPE, the most common being papillary carcinoma in both the groups. Hence, malignancy noted in MNG group was 17.5% and in SNG group was 10%. This is comparable with Anwar K and et al[13] study which showed that the incidence of malignancy in the MNG group was 14.4%.In a study conducted by Golder et al [14], showed that the incidence of malignancy in SNG was 8%.

CONCLUSION:

- The present study highlighted higher female preponderance in our study population. Majority of the patients belongs to the age group

between 30-45 years. Majority of the diagnosis identified in this study through FNAC belonged to the nodular goiter. Majority of the cases identified through histopathology were benign, the most common malignancy found in both the groups was papillary carcinoma. We conclude that the risk of malignancy in multi-nodular goiter is not as low as it was thought before and that it is quite significant. Total thyroidectomy was the most common surgery performed for thyroid lesions. As notable malignancy was observed in nodular goiters, so early detection helps in better prognosis. It would be practically wise to keep this in mind while evaluating patients and ample effort should be made to pre-operatively identify any malignant focus, so that appropriate therapeutic protocol can be planned.

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