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## Study of incidence of malignancy in clinically benign thyroid swelling

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Dear Editor,

Thyroid being an endocrine gland, its involvement is a diverse issue from a meager cosmetic problem to a more concerned malignancy. Appropriate diagnosis and proper treatment is the need of the hour. A benign looking thyroid swelling in a regular surgical outpatient department has to be evaluated and managed accordingly. Solitary nodule of thyroid (SNT) is of greater concern than of multinodular goiter (MNG), but a dominant nodule or a nodule that grows rapidly in a MNG seeks greater attention.<sup>[1,2]</sup> Follicular thyroid carcinoma is the

common malignancy among benign thyroid swelling.<sup>[3]</sup> Careful evaluation of the benign looking thyroid swelling is a necessity. Both papillary and follicular malignancy are 2.5 times more common among women.<sup>[1]</sup>

The objective of this study was to know the frequency of malignancies in clinically benign thyroid swellings. In this descriptive study, patients were chosen from among the ward patients of our teaching hospital; from January 2011 to July 2012. Patients with benign looking thyroid swellings, who would undergo surgery, were picked up. One hundred and fifty-five such patients were studied. Of which, 100 were clinically diagnosed to be MNG and 55 were clinically SNT. Patients underwent fine-needle aspiration cytology (FNAC)

for preoperative pathological diagnosis. Appropriate surgery was done. Thyroid specimens subjected to histopathological examination.

Profile of the patients with SNT is tabulated in Table 1; the youngest patient diagnosed with malignancy was 21 years and the oldest patient was 65 years. Surprisingly, all the patients were female. The size of the thyroid swelling ranged from 3 to 5 cm and duration ranged from 1 month to 4 years. Of the six patients, who were confirmed to have malignancy on histopathological evaluation, three were confirmed and the other three were found suspicious on FNAC. The proportion of malignant cases among SNT is depicted in Figure 1.

As shown in Table 2, among MNG patients, the youngest patient with malignancy was 23 years and oldest 50 years. As seen with

**Table 1: Profile of the patients with SNT, diagnosed with malignancy**

Patient	Age (years)	Sex	Duration	Size (cm)	FNAC	HPE
1	34	Female	6 months	3×4	PC	Follicular variant PC
2	65	Female	4 years	5×5	PC	PC
3	21	Female	1 month	2×3	Suspicious	PC
4	40	Female	2 months	3×3	FN	FC
5	23	Female	2 months	2×3	PC with cystic change	PC
6	55	Female	2 years	4×3	FN	FC

SNT=Solitary nodule of thyroid, FNAC=Fine needle aspiration cytology, HPE=Histopathological examination, PC=Papillary carcinoma, FN=Follicular neoplasia, FC=Follicular carcinoma

**Table 2: Profile of the patients with MNG, diagnosed with malignancy**

Patient	Age (years)	Sex	Duration	Size (cm)	FNAC	HPE
1	34	Female	1 year	2×3	FN	FC
2	50	Female	1 year	5×6	Colloid goiter with cystic change	PC
3	23	Female	3 years	6×4	Colloid goiter with cystic change	PC

MNG=Multinodular goiter, FNAC=Fine needle aspiration cytology, HPE=Histopathological examination, FN=Follicular neoplasia, FC=Follicular carcinoma, PC=Papillary carcinoma

**Table 3: Comparison between the two groups SNT and MNG**

	SNT	MNG	Total
Malignancy			
PC	4	2	6
FC	1	1	3
Benign	49	97	146
Total	55	100	155

SNT=Solitary nodule of thyroid, MNG=Multinodular goiter, PC=Papillary carcinoma, FC=Follicular carcinoma

**Table 4: Analysis of the two groups SNT and MNG**

Groups	Malignant	Benign	P value
SNT	6	49	0.068*
MNG	3	97	
Total	9	146	

\*Fisher's exact test - no statistically significant difference in distribution among groups is seen ( $P < 0.05$  is considered as significant). SNT=Solitary nodule of thyroid, MNG=Multinodular goiter

SNT, all patients were female. The size of the swellings ranged from 3 to 6 cm and patient complaint duration varied from 1 to 3 years. Of the three patients diagnosed with malignancy one was found suspicious on malignancy (follicular neoplasia) and the other two were found to be benign. The proportion of malignancy among MNG was shown in Figure 2.

As could be inferred from Table 3, six patients were found to have papillary carcinoma (PC). Three patients were diagnosed to have follicular carcinoma (FC). Malignancy in SNT was as high as 10.9%, as against 3% in MNG. Overall, the benign thyroid swellings were associated with 5.8% of carcinomas. Figure 3 shows the overall malignancy among clinically benign thyroid swelling. PC was the most common malignancy detected followed by FC in both groups. Interestingly, all the patients with malignancy in this study were females. Huge variations in the age group, size, and duration of presentation were not analyzed statistically because of the smaller number of malignant cases.

As analyzed from Table 4, proportion of malignancies is higher among the SNTs compared with MNGs. When analyzed by Fisher's exact test, the difference is not statistically significant ( $P$  value 0.068) and this may be due to smaller number of patients in this study. From this study, both groups are in good risk for malignancy.

Ur Rehman *et al.*<sup>[4]</sup> reported 3.87% incidence of malignancy among MNG patients and 11.5% among SNT. Nanjappa *et al.*<sup>[5]</sup> reported 12% malignancy among SNT and 8% among MNG. Both the above groups reported PC among the common presentation followed by FC as in the present study. Altae *et al.*<sup>[6]</sup> reported thyroid malignancy incidence to be of 5.5% among MNG. Hanumanthappa *et al.*<sup>[7]</sup> quoting malignant incidence of 10%, Anwar *et al.*<sup>[8]</sup> quoting incidence of malignancy among MNG to be 14.37%, Imad *et al.*<sup>[9]</sup> reporting a 11.2% malignancy among MNG, most common

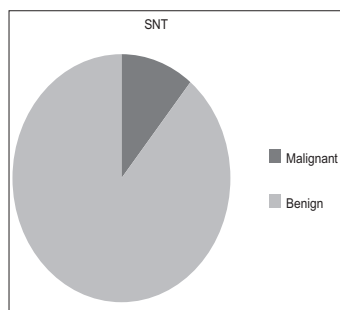


Figure 1: Proportion of malignancy among the patients with solitary nodule of thyroid

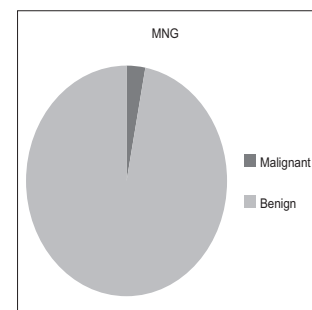


Figure 2: Proportion of malignancy among the patients with multinodular goiter

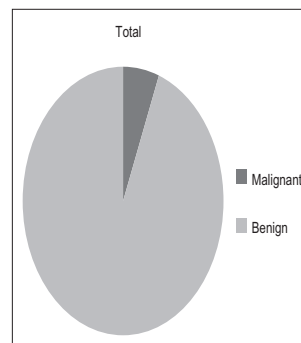


Figure 3: Total proportion of malignancy among both the groups

being PC followed by FC which is comparable to the present study. When Matesa *et al.*<sup>[10]</sup> compared thyroid malignancy in SNT and MNG, they noticed 5% malignancy among both SNT and MNG and all the patients detected to have malignancy were females. Malignancy of thyroid is more common among female.<sup>[1]</sup> Interestingly, in this study also all the patients found to have malignancy were females probably due to the small sample size and smaller incidence of malignancy.

To conclude, it is not unusual to have a diagnosis of thyroid malignancy in a clinically benign thyroid swelling. Incidence of such malignancies is significant. Hence, the patients being treated conservatively for benign thyroid diseases should be followed-up regularly. Patients who opt out of surgery should be put on diligent screening of the swelling and any suspicious change in the swelling has to be tackled aggressively.

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#### Conflicts of interest

There are no conflicts of interest.

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