



## Research Article

# Incidental Detection of Follicular Neoplasms in Cases Clinically Diagnosed as Goitre

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### ABSTRACT

**Objective:** Histopathological evaluation of incidental follicular neoplasms in cases clinically diagnosed as goitre. **Methodology:** A two-year retrospective study has been carried out in a tertiary care hospital of North East India by reviewing records of 56 thyroidectomy cases operated for goitre for presence of thyroid neoplasms in those. **Results:** Out of total 56 cases, 45 cases (80.36%) were confirmed as goitre and 11 cases (19.64%) were incidental follicular neoplasms- 9 cases (81.90%) were follicular adenomas and the remaining 2 cases (18.10%) were follicular carcinomas. **Conclusion:** Amidst the rising rates of incidental thyroid cancers in benign thyroid diseases, surveillance strategies and proper diagnostic work up in high-risk patients can facilitate effective management of thyroid nodules.

**Keywords:** Follicular neoplasm, Goitre, Thyroid, Adenoma.

### INTRODUCTION

Goitre has been deemed a serious public health issue that affects 15.8% of the world's population<sup>1</sup>. Iodine insufficiency is one of the most common micronutrient deficits in the world, leading to a variety of illnesses known as iodine deficiency disorders (IDD). Among these, goitre is the most frequent symptom in both children and adults, and its development mostly denotes chronic iodine insufficiency<sup>2,3</sup>. There are 54 million persons with goitre in India, according to estimates. Goitres may be nodular or diffuse, and they may be linked to hypothyroidism, euthyroidism, or hyperthyroidism, depending on the underlying reason. In the adult population of the United States, thyroid nodular disease can occur at a rate of between 2% and 4%, however goitrogenic regions have been reported to have a much greater frequency of the condition<sup>4</sup>.

Several recent investigations have demonstrated an increase in the incidence of neoplasms in surgically removed instances that were clinically identified as goitre, contradicting the notion that cases of goitre have a lower risk of neoplastic development. According to recent studies, rates of thyroid cancer in people with multinodular goitre range greatly, from 3% to 35% previously<sup>5</sup>. Based on histotype, the incidence of follicular thyroid carcinoma was noted to occur higher in goitrogenic regions, while papillary forms were found more commonly in iodine sufficient areas<sup>6</sup>. Histopathological evaluation of incidental follicular neoplasms in cases clinically diagnosed as goitre is the main aim of the current study.

### MATERIALS AND METHODOLOGY

A two-year retrospective study was conducted from January 2021 to December 2022 in the Department of Pathology, Gauhati Medical College and Hospital. A total of 56 cases clinically diagnosed as goitre, followed by surgical resection and then subjected to histopathological

examination considering both sexes and all age groups were included in the study.

### RESULTS

In our study of clinically diagnosed 56 cases of goitre, 45 cases (80.36%) were histopathologically confirmed as goitre while the remaining 11 cases (19.64%) showed incidental findings of follicular neoplasm (Table 1). Amongst 45 cases of goitre, majority belonged to the age group of (31-40) years while the incidental cases of follicular neoplasms were found to occur more in the elderly, majority being follicular adenomas in and two cases of follicular carcinoma were found in patients of age group (41-60) years (Table 2, Figure 1).

This study found 49 cases (87.5%) of the total affected were females and 7 cases (12.5%) were males; male to female ratio being 1:7. The two incidental cases of follicular carcinoma were detected in females (Table 3). Of the 11 cases of incidental follicular neoplasms, 9 cases (81.9%) were found to be follicular adenoma and 2 cases (18.1%) were follicular carcinoma (Table 4). Figure 2 and Figure 3 showed the images of follicular thyroid carcinoma.

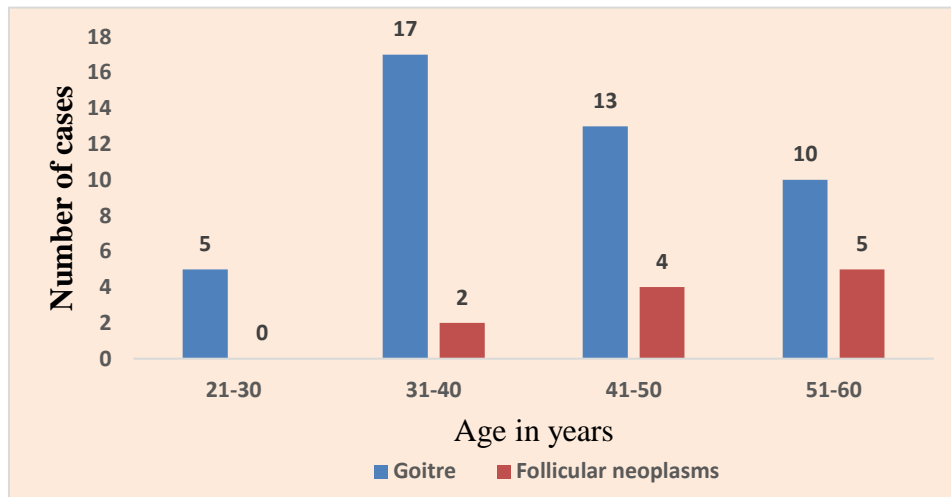
**Table 1:** Distribution of Histopathological diagnosis of goitre cases

Cases	No. of cases	Percentage (%)
Goitre	45	80.36
Follicular neoplasms	11	19.64
Total no. of cases	56	



**Table 2:** Age-wise distribution of cases

Age (years)	No. of cases of goitre	Percentage of cases of goitre (%)	No. of cases of follicular neoplasms		Percentage of cases of follicular neoplasms (%)
			Follicular adenoma	Follicular carcinoma	
21-30	5	11.11	0	0	0
31-40	17	37.78	2	0	18.18
41-50	13	28.89	3	1	36.36
51-60	10	22.22	4	1	45.46
Total no. of cases	45		11		



**Figure 1:** Age-wise distribution of cases

**Table 3:** Distribution of cases based on gender

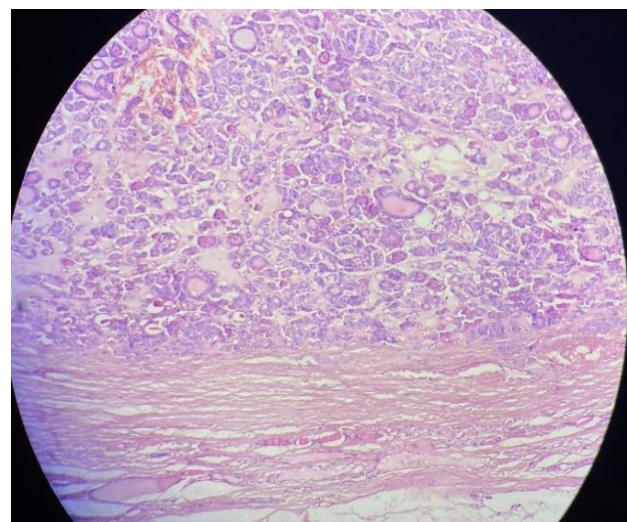
Gender	No. of cases			Percentage (%) of total cases
	Goitre	Follicular adenoma	Follicular carcinoma	
Males	5	2	0	12.5
Females	40	7	2	87.5
Total no. of cases	56			

**Table 4:** Histopathological distribution of follicular neoplasms

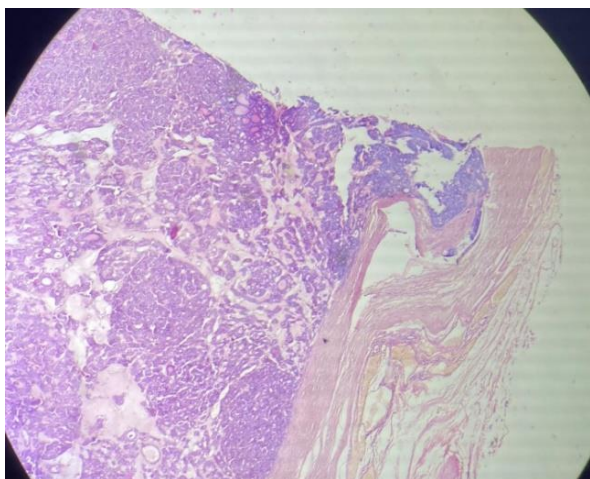
Histopathological variants	No. of cases	Percentage (%)
Follicular adenoma	9	81.9
Follicular carcinoma	2	18.1
Total no. of cases	11	

**Table 5:** Follicular carcinoma variants

Types of follicular carcinoma	No. of cases	Percentage (%)
Minimally invasive	2	100
Encapsulated angioinvasive	0	0
Widely invasive	0	0
Total no. of cases	2	



**Figure 2:** HPE of thyroid follicular adenoma (H&E, 10X)



**Figure 4:** HPE of follicular thyroid carcinoma (H&E, 10X)

## DISCUSSION

The present study showed 19.64% of the clinically diagnosed goitre cases harboured presence of incidental follicular neoplasms. Studies conducted by Ghadhban et al.<sup>7</sup> and Al-Salamah et al.<sup>8</sup> showed 21.7% and 21.3% incidence of differentiated thyroid carcinoma among cases of multinodular goitre respectively. In the study conducted by Othman et al.<sup>9</sup>, the postoperative histopathological analysis of total thyroidectomies for benign thyroid diseases showed incidental thyroid carcinomas in 12% of the total 100 cases. Our study found male to female ratio of 1:7 in occurrence of goitre indicating female preponderance similar to the studies reported by Maturo et al.<sup>10</sup>, Bove et al.<sup>11</sup>, Ghadhban et al.<sup>7</sup>, and Bombil et al.<sup>12</sup> This study concluded with 19.64% histologically confirmed follicular neoplasms of which 18.10% were follicular carcinomas. However, Rumstadt et al.<sup>13</sup> reported that all incidental cancers (100% cases) in their patients operated for multinodular goitre were true follicular carcinomas. Histopathological study of thyroidectomies done for benign diseases by Pezolla et al.<sup>6</sup> detected 25% cases of papillary carcinoma, 2.5% follicular carcinoma and 72.5% cases of follicular variant of papillary carcinoma. Peluso et al.<sup>14</sup> in their study of 1777 surgically treated patients for benign thyroid diseases found 89 cases of incidental thyroid cancers, all being papillary microcarcinomas. Few limitations in this study needs consideration. The study has taken into account goitre cases managed surgically by thyroidectomy which may fail to reflect the actual prevalence of thyroid neoplasms in our region, the reason being conservative management of the nonpalpable or smaller thyroid lesions. Although these smaller lesions attribute to lower risk of malignancy than the larger ones<sup>15</sup>, but they still possess their malignant potential.

## CONCLUSION

Incidental thyroid neoplasms are still a common occurrence despite availability of technically improved preoperative diagnostic tools and no clinical or instrumental assessment has yet offered adequate accuracy to identify malignancy in the context of a benign thyroopathy. At present, ultrasound scan and fine needle aspiration cytology can be considered

promising for the preliminary assessment of thyroid nodules and aiding in deciding further the plan of management. However, a multidisciplinary approach focusing on better preoperative diagnosis can hugely impact the postoperative outcome for the patients.

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