



STUDY OF INCIDENCE OF OCCULT THYROID CARCINOMA IN PATIENTS OPERATED FOR BENIGN THYROID DISEASE

General Surgery

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ABSTRACT

BACKGROUND:- The term 'occult' thyroid cancer is a term applied to a very small, unsuspected cancer identified incidentally on pathologic examination of thyroid tissue removed for benign disease. Aim of this study are to evaluate the incidence of occult thyroid carcinoma after thyroidectomy for benign thyroid lesions with its different pathological types.

MATERIAL AND METHODS:- This observational study included 42 patients who were admitted and treated in the Department of General Surgery, Rajendra Institute of Medical Sciences, Ranchi with features of benign enlargement of thyroid gland, between January 2017 to October 2018 and fulfilled the inclusion criteria.

RESULTS:- Most patients were females with mean age of 40.72 yrs. Mean age of occult carcinoma in patients was 44 yrs. The commonest presenting complaint was that of a swelling in front of neck with gradually increasing size. Majority of patients presented with a MNG. The incidence of occult thyroid carcinoma was 12% out of the total 42 patients. The incidence of occult malignancy was higher in multinodular goitre compared to others with no variation with factors like age or sex. Papillary carcinoma was the most common histopathological type.

CONCLUSIONS:- Total thyroidectomy instead of hemithyroidectomy will help avoid recurrence for lesions that are multifocal or bilateral thyroid swelling. It also prevents the difficulties of second thyroidectomy due to adhesions and difficult anatomical dissection.

KEYWORDS

Thyroid Swelling, Fine-Needle Aspiration Cytology, Thyroidectomy, Histopathology, Occult Thyroid Carcinoma

INTRODUCTION

The term occult thyroid carcinoma is defined as "not manifest or detectable by clinical methods alone" and also as "not present as macroscopic amounts".¹ The McGraw Hill Concise Dictionary of Modern Medicine 2002 defines "occult primary malignancy" as "unknown primary malignancy that is symptomless, which first manifests itself as metastases or secondary paraneoplastic phenomena."² In 1997 Moosa and Mazzaferri defined "occult thyroid carcinoma" as "an impalpable thyroid carcinoma that is generally smaller than 1 cm."³ A more precise definition of size is used by Stedman's Medical dictionary (2006), where, "occult papillary carcinoma of thyroid" is defined as microcarcinoma of the thyroid or microscopic papillary carcinoma of the thyroid, usually well encapsulated and measuring less than 5 mm in diameter."⁴

Thyroid cancer is the most common endocrine malignancy, with incidence of 8.7 per 100000 people per year in US, though this seems to be increasing over the years, and diagnosis of occult thyroid carcinoma in patients subjected to thyroidectomy for benign disease is quite frequent.⁵

The use of total thyroidectomy remains controversial for treating small differentiated thyroid carcinomas and even more for treating benign diseases, due to possible severe complications such as permanent recurrent laryngeal nerve palsy and hypoparathyroidism.

Although the extent of resection for benign diseases remains under debate, currently an increasing number of total thyroidectomies have been performed in specialist endocrine surgery units, and indications for total thyroidectomy include Grave's disease and multinodular goitre. Furthermore, the complication of recurrent laryngeal nerve palsy (0-1.3%) and permanent hypoparathyroidism (1%) following subtotal thyroidectomy were found to be similar to those after total thyroidectomy.

The present study will evaluate various factors that correlate with presence of occult thyroid carcinoma.

MATERIALS AND METHODS:-

This observational study included 50 patients who were admitted and treated in the Department of General Surgery, Rajendra Institute of Medical Sciences, Ranchi with features of benign enlargement of thyroid gland, between January 2017 to October 2018.

Inclusion criteria:

1. All patients with thyroid swelling.

2. Patients who underwent thyroidectomy for benign thyroid disease.

Exclusion Criteria:

1. Clinically diagnosed case of thyroid carcinoma.
2. Investigations suggestive of thyroid cancer.
3. History of head and neck radiation

Methodology:-

This was a prospective observational study, where a detailed history and clinical examination was done followed by routine preoperative investigations. All patients underwent thyroid function tests, FNAC and ultrasonography of the neck. Preoperative indirect laryngoscopy was done in all. Type of surgery depended on the clinical diagnosis and FNAC report. The patients were evaluated for presence of thyroid cancer by post operative histopathological results.

OBSERVATION AND RESULTS

TABLE-1. Gender Distribution (n=42)

Gender	No. of patients	%
Male	5	12%
Female	37	88%
Total	42	100%

Forty two patients who underwent thyroidectomy for benign thyroid disease; 37(88%) were female and 5(12%) were male with a mean age of 40.72 years (range 18-74 years).

TABLE-2. Age Distribution (n=42)

Age group (years)	No. of patients	%
<20	1	2.4%
21-30	8	19.2%
31-40	12	28.5%
41-50	17	40.4%
51-60	3	7.1%
> 60	1	2.4%
Total	42	100%

TABLE-3. Duration Of The Disease

Duration (years)	No. of patients	%
<1	2	5%
1-2	15	35%
2-5	12	29%
>5	13	31%
Total	42	100%

TABLE-4.Symptoms

Symptoms	No. of patients	%
Swelling	40	95%
Pain	2	5%
Dyspnoea	--	--
Dysphagia	--	--
Dysphonia	--	--
Total	42	100%

TABLE-5.Incidence Of Occult Thyroid Carcinoma

Pre Op Diagnosis	No. of patients n=42	Post Op occult thyroid carcinoma n=5	Occult thyroid carcinoma of whole series n=42
Multinodular goiter (MNG)	22 (52.38%)	3 (60%)	7.14%
Solitary thyroid nodule (STN)	17 (40.47%)	2 (40%)	4%
Diffuse goiter	3 (7.14%)	0	0

TABLE-6.Histopathological Findings Of Occult Carcinoma Patients (N=5)

Post Op Occult thyroid carcinoma	No. of patients	%
Papillary	4	80%
Follicular	1	20%
Undifferentiated	0	0

The post operative pathological examination of the surgical specimens showed the presence of incidental thyroid carcinoma in 5 cases (11%) of total number of patients, 4 of them were female (80%) and 1 was male (20%) with a mean age of 45.2 years (range from 40-52 years). 80% patients showed papillary type in histopathology.

TABLE-7.Correlation Between Thyroid Function And Occult Thyroid Carcinoma

	Occult thyroid carcinoma(n=5)	Benign (n=37)	Total (n=42)
Toxic	1 (20%)	5 (13.5%)	6 (14.2%)
Euthyroid	4 (80%)	32 (86.4%)	36 (86%)

Out of the total 5 patients who were detected with occult carcinoma in post operative histopathological evaluation, 4 were euthyroid and only 1 had toxic features.

TABLE-8.Surgeries Performed For Thyroid Swelling

Surgery	No. of patients	%
Hemithyroidectomy	7	16.66%
Subtotal thyroidectomy	4	9.52%
Near total thyroidectomy	7	16.66%
Total thyroidectomy	24	57.14%
Total	42	

Total thyroidectomy was the most commonly performed surgical procedure.

TABLE-9.Postoperative Complications

Surgery	No. of patients	Complications			
		Permanent unilateral nerve palsy	Transient hypocalcemia	Permanent hypocalcemia	Temporary change in voice
Hemithyroidectomy	7	0	0	0	0
Sub-total thyroidectomy	4	0	0	0	0
Near total thyroidectomy	7	0	2 (4.6%)	0	1 (2.3%)
Total thyroidectomy	24	0	2 (4.6%)	0	1 (2.3%)
Total	42	0	4 (9.2%)	0	2 (4.6%)

Both near total and total thyroidectomies were complicated with 3 patients each, consisting of transient hypocalcemia and temporary change in voice in 9.2% and 4.6% patients respectively.

DISCUSSION:

This was an observational study involving 50 patients who were admitted with thyroid swellings. The objective of the study was to estimate the incidence of occult thyroid carcinoma in patients operated for benign thyroid disease and to study the variation with respect to different parameters like age sex etc. The observations of this study can be summarized as follows:

- Most patients were females with mean age of 40.72 years. Mean age of occult carcinoma in patients was 44 years.
- The commonest presenting complaint was that of a swelling in front of neck with gradually increasing size.
- Majority of patients presented with a MNG.
- The incidence of occult thyroid carcinoma was 11% out of the total 42 patients. The incidence of occult malignancy was higher in MNG compared to others with no variation with factors like age or sex.
- Papillary carcinoma was the most common histopathological type.
- The mean pre operative TSH value was 3.06 mU/L.
- The most common surgery performed for all benign swellings was total thyroidectomy with transient hypocalcemia as the most common post operative complication.

CONCLUSION:

The incidence of occult thyroid carcinoma in patients operated for benign disease is quite significant. There are high chances of false negative results with FNAC, and thus total thyroidectomy should be the procedure of choice in such cases. Total thyroidectomy instead of hemithyroidectomy will help avoid recurrence for lesions that are multifocal or bilateral. It also prevents the difficulties of second thyroidectomy due to adhesions and difficult anatomical dissection.

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