



## CLINICAL PROFILE AND OUTCOME OF CARCINOMA THYROID

**Dr. Ch. Satyanarayana**

M.S., Asst Professor of Surgency and Ha Medical College Visakhapatnam

**Dr. B. Tejeswara Rao\***

M.S., Associate Professor of Surgery, Sarojini Courts, Maharanipeta, Visakhapatnam - 530002. AP, INDIA \*Corresponding Author

**Dr. Rohit Babu**

M.S

**ABSTRACT** Within broad category of thyroid cancers, there are many types, each with a distinctive epidemiology, natural history, treatment and prognosis. The general categories of thyroid cancer are well differentiated malignancies, anaplastic cancer, medullary thyroid cancer, and other unusual cancers such as lymphoma, sarcoma, and other rare malignancies. Prognostically, papillary carcinoma is having a very long natural history, giving ample scope for the surgeon to effect complete cure, if diagnosed early. While, the most malignant variety is the anaplastic carcinoma, where the surgeon has very little to do. Diagnosed early, treated properly, most forms of differentiated carcinomas of thyroid are curable. Being the most common endocrine carcinoma, it generates considerable clinical interest amongst endocrinologists, surgeons and oncologists.

**KEYWORDS :** Papillary carcinoma, Follicular carcinoma, Anaplastic carcinoma, Medullary Carcinoma.

### INTRODUCTION:

Globally as of 2015 3.2million people have thyroid cancer and resulted in 31,900 deaths. It most commonly occurs between ages of 35-65yrs. Women are affected more often than men. Rates have increased in last few decades which is believed to be due to better detection.

### MATERIALS AND METHODS

This study of carcinoma of the thyroid was carried out with a view to study the clinical pattern and behaviour of carcinomas of the thyroid treated in KING GEORGE HOSPITAL VISAKHAPATNAM during the period of two years from 2014to 2016. This study mainly emphasizes on the incidence, clinical aspects, management and follow up of the carcinoma of thyroid.

This study consists of cases of carcinoma of the thyroid suspected clinically and proved by FNAC and or post-operatively by biopsy. Most of the cases were submitted for Total Thyroidectomy with or without modified cervical block dissection. This protocol is proved to have satisfactory results, even though the follow up is for a short period in all these patients. All patients were put on Thyroxin post operatively.

### RESULTS

The incidence of thyroid disorder is found to be high in these parts of north coastal Andhra Pradesh .This may be partly due to high incidence of endemic goitre in the agency areas nearby (Araku, Paderu, Chinthapalli).

During this period a total no of 12372 patients were admitted in surgical wards .Out of these patients with thyroid disorders were 287(2.31%).50 cases of carcinoma thyroid were detected among them(17.45).These cases were further analysed for various Aetiological, Pathological factors and treatment modalities.

**Table 1: Disease wise incidence**

S.No	Thyroid disorder	Total Cases	Percentage of Cases
1	Adenoma thyroid	123	42.8%
2	Carcinoma thyroid	50	17.45
3	Multinodular goitre	60	20.9%
4	Hashmotos thyroiditis	36	12.54%
5	Thyrotoxicosis	10	4.83%
6	Other thyroid diseases	08	2.78%
<b>Total</b>	287	100%	

As is shown there were 50 cases of carcinoma thyroid among the total patients of 287 and they constituted third common cause of goitre .The incidence of 17.45% is high as our hospital is a tertiary care centre.

**Table 2: Age incidence of carcinoma of the thyroid**

S.No	Age in year	No of cases		Total no cases	Percentage of cases
		Female	Male		
1	10-20	02	01	03	6%
2	21-30	09	--	09	18%
3	31-40	15	02	17	34%
4	41-50	13	--	13	26%
5	51-60	--	07	07	14%
6	61-70	--	01	01	02%
<b>Total</b>		39	11	50	100%

About 82% of the patients were between 20 to 50 years with peak incidence in 4th decade. The age of youngest patient was 14 years and the age of oldest patient was 70 years.

**Table 3: sex incidence of carcinoma of the thyroid**

S.No	Sex	No of Cases	Percentage of Cases
1	females	39	78%
2	Males	11	22%
<b>Total</b>		50	100%

The ratio of female to male, about 2.9 in this study, is comparable with international series. The high incidence in females can be explained with the fact that in general thyroid disorders are common in females.

### Histopathological incidence of different types of thyroid carcinoma.

For all the admitted patients with goitre a pre operative FNAC was done .Of the total 50 cases of carcinoma thyroid (proved by biopsy) 47 cases were diagnosed preoperatively. a sensitivity of 94%, which is well within comparison to other series (71-96%)

All the cases of follicular carcinoma were initially diagnosed as follicular adenoma were proved to be malignant after hemi thyroidectomy and a completion thyroidectomy was done. The distribution of various carcinomas is as follows

**Table 4: Type of Carcinoma**

S.No	Type of Carcinoma	No of Cases	Percent of Cases
1	Papillary Carcinoma	41	82%
2	Follicular Carcinoma	06	12%
3	Medullary Carcinoma	02	04%
4	Anaplastic Carcinoma	01	02%
<b>Total</b>		50	100%

Contrary to other series a high incidence of papillary carcinoma was detected in our series .The exact reason for this has to be investigated .Two patients with medullary carcinoma were also detected.

All these patients had a positive report for carcinoma pre operatively. In 10 patients who presented with lymphnodes along with a goitre MRND was also done.

**Table5: Types of Surgeries**

S.No	Treatment	No.of Cases	Percentage of Cases
1	Total thyroidectomy with central compartment dissection	37	74%
2	Total thyroidectomy with MRND	10	18%
3	Completion thyroidectomy	03	6%

## DISCUSSION

In the past 3 decades, there has been a dramatic increase in the number of people diagnosed with thyroid cancer[1]. Most recently, the number of new cases of thyroid cancer is estimated to be 12.9 per 100,000 men and women annually, and the number of associated deaths is estimated to be 0.5 per 100,000 men and women annually.[2] Still, the lifetime risk for thyroid cancer is approximately 1.1%, and the 5-year survival rate has risen to 97.8%, because almost 70% of cases are now diagnosed at an early stage, when the cancer is localized at the gland.[2]

Thyroid cancer is categorized into 4 main types. Representing approximately 70% to 80% of thyroid cancers, papillary thyroid carcinoma is the most common thyroid malignancy.[3,4] Papillary thyroid carcinoma is the least aggressive type of cancer, because it tends to grow and metastasize slowly.[3,4] It is composed of multifocal papillary and follicular elements forming sites of adenocarcinomas.[4] Follicular thyroid carcinoma accounts for approximately 14% of thyroid cancers, is more aggressive than papillary thyroid carcinoma, and may be associated with iodine deficiency.[3] Hurthle-cell carcinoma is a variant of follicular carcinoma that is treated the same way as follicular carcinoma.

Medullary thyroid carcinoma, a cancer of nonthyroid cells that are normally present in the thyroid gland, represents approximately 3% of thyroid cancers and is often associated with multiple endocrine neoplasia [2]. Medullary carcinoma produces excess calcitonin, which makes it a useful tumor marker.[3,4]

Anaplastic thyroid carcinoma represents approximately 2% of thyroid cancers and is the most dangerous form of thyroid cancer, because it metastasizes early to the surrounding lymph nodes and distant sites.[5] Other thyroid malignancies, such as lymphoma and variants of the 4 types mentioned above, make up the remaining thyroid cancers. Clinically, thyroid cancer has been divided into 2 categories: (1) well-differentiated, including papillary and follicular cancers, and (2) poorly differentiated, including medullary and anaplastic cancers.

After a diagnosis of thyroid cancer, it is important to perform preoperative staging and imaging, because it can alter the patient's prognosis and treatment course. Up to 50% of patients with differentiated thyroid cancer will have cervical lymph node involvement, despite the primary tumor size.[3] Thus, a preoperative neck ultrasound for contralateral lobe and cervical lymph nodes is recommended for all patients undergoing thyroidectomy for malignancy, to help identify possible metastasis.

Treatment options for thyroid cancer include surgery, radioactive iodine (I131) therapy, and external beam radiotherapy. The standard treatment options vary depending on the type and stage of the cancer.

Surgical options for primary tumors include hemithyroidectomy, with or without isthmusectomy; near-total thyroidectomy (leaving <1 g of thyroid tissue adjacent to the recurrent laryngeal nerve); and total thyroidectomy (removing all visible thyroid tissue).[3] Overall, near-total or total thyroidectomy is recommended for the management of thyroid cancer in which the primary tumor measures  $\geq 1.0$  cm to 2.0 cm.[6] Subtotal lobectomy and unilateral lobectomy used to be performed in the past, but they are now deemed inappropriate for the treatment of patients with thyroid cancer; Because of the high percentage (42.7%) of the multifocal distribution of thyroid cancer, removing the thyroid gland in its entirety reduces the chance for malignancy in the residual parenchyma.[7] It also allows for the correct risk assessment of the tumor, which is based on size and extracapsular infiltration.[7]

Because lymph node metastasis can be present in 20% to 90% of patients with papillary cancer, a therapeutic central compartment neck dissection should be performed along with the total thyroidectomy when lymph nodes are clinically involved.[3] Prophylactic central compartment neck dissection is also recommended for T3 or T4 tumors, despite no clinically involved lymph nodes.[3] No prophylactic dissection is recommended for smaller T1 or T2 noninvasive tumors.[3]

I131 is used in coordination with thyroidectomy to completely ablate the thyroid gland and to postoperatively eradicate possible residual cancer. [8-10] In general, guidelines from the American Thyroid Association recommend I131 ablation for known metastases, extrathyroidal extension, and tumor size  $>4$  cm; or smaller tumors with high-risk features, such as vascular invasion and aggressive histologies.[12] On the other hand, the guidelines do not recommend ablation for unifocal or multifocal tumors  $<1$  cm without high-risk features.[11,12]

External beam radiation therapy is only used for palliative treatment of patients with advanced or inoperable thyroid cancer.[3] It is usually considered in patients aged  $>45$  years who have grossly visible extrathyroidal extension and a high likelihood of residual disease during surgery.[3] It is also reserved for tumors that are unresponsive to therapy with I131.[3]

TSH suppression therapy is recommended after surgery and after I131 therapy, because differentiated thyroid cancers express TSH receptors that respond to TSH stimulation.[3] If the patient had high-risk disease, TSH should be suppressed to 0.1 to 0.5 mU/L for 5 to 10 years, and patients who had low-risk disease or who have become disease free should maintain a TSH of 0.3 to 2.0 mU/L.[3]

## CONCLUSION

Incidence of thyroid disorders is quite common in these parts. Carcinoma thyroid is 3rd common among them. No aetiological factors can be detected in these patients.

Carcinoma thyroid is commonly seen between 20-50 years(which is much earlier compared to other series).Out of all the cases operated, except for minor complications, no mortality was noted. Those minor complications were temporary hoarseness of voice, hypoparathyroidism, hypothyroidism for which patients were treated. The postoperative period with a followup of 2 months to 2 years had not shown any evidence of local recurrence or distant metastasis. so it can be said early detection and surgery i.e., total thyroidectomy with or without MRND, followed by lifelong thyroxine is the treatment of choice.

## REFERENCES

1. National Cancer Institute. A snapshot of thyroid cancer. November 5,2014. [www.cancer.gov/researchandfunding/snapshots/thyroid](http://www.cancer.gov/researchandfunding/snapshots/thyroid).
2. National Cancer Institute. SEER stat fact sheets: thyroid cancer. <http://seer.cancer.gov/statfacts/html/thyro.html>.
3. Cooper DS, Doherty GM, Haugen BR, et al; for the American Thyroid Association (ATA) Guidelines Taskforce on Thyroid Nodules and Differentiated Thyroid Cancer. Thyroid. 2009; 19:1167-1214. Errata in: Thyroid. 2010;20:674-675; Thyroid. 2010; 20:942
4. National Cancer Institute. Thyroid cancer treatment (PDQ). Updated July 11,2014.
5. Fitzgerald PA. Thyroid cancer. In: Papadakis MA, McPhee SJ, eds. Current Medical Diagnosis & Treatment 2013. 52nd ed. US: McGraw-Hill Companies; 2013:1126-1134.
6. Tuttle RM. Differentiated thyroid cancer: overview of management. Up To Date. January 29, 2015.
7. Lucchini R, Monacelli M, Santoprete S, et al. Differentiated thyroid tumors: surgical indications. G Chir. 2013;34:153-157.
8. Wartofsky L, Van Nostrand D. Radioiodine treatment of well-differentiated thyroid cancer. Endocrine. 2012;42:506-513.
9. Valachis A, Nearchou A. High versus low radioiodine activity in patients with differentiated thyroid cancer: a meta-analysis. Acta Oncol. 2013;52:1055-1061.
10. Schlumberger M, Catargi B, Borgeat I, et al; for the Tumeurs de la Thyroïde Refractaires Network for the Essai Stimulation Ablation Equivalence Trial. Strategies of Radioiodine ablation in patients with low-risk thyroid cancer. N Engl J Med. 2012;366:1663-1673.
11. Luster M, Clarke SE, Dietlein M, et al; for the European Association of Nuclear Medicine (EANM). Guidelines for radioiodine therapy of differentiated thyroid cancer. Eur J Nucl Med Mol Imaging. 2008;35:1941-1959.
12. Tuttle RM. Differentiated thyroid cancer: radioiodine treatment. UpTo-Date. Updated July 15, 2014.