



SURGICAL OUTCOMES OF THYROID MALIGNANCY PATIENTS IN TERTIARY CARE CENTRE, VISAKHAPATNAM.

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ABSTRACT **BACKGROUND:** Thyroid cancer is one of the most treatable forms of cancer if presented early. Surgery is the mainstay in the management of thyroid cancer. Surgical outcomes need to be tempered against the excellent prognosis of the disease. **MATERIALS AND METHODS:** A retrospective study was conducted on 58 cases of carcinoma thyroid in the Department of General Surgery, King George Hospital, Visakhapatnam, from June 2018 to June 2020. Patients presenting with symptom of thyroid swelling were admitted, investigated using routine investigations, and USG/CT scan, FNAC and diagnosed as thyroid malignancy. Factors studied were incidence among age, demography, time of presentation, presenting complaints, stage of presentation, and treatment options available in our setup. **RESULTS:** The median age was 40 years with predominantly papillary thyroid carcinoma (55%). Localized disease in 48.2% of cases, locoregional disease in 43.1% and distant metastasis in 8.6% of cases at presentation was noted. Revision surgeries were done in 24% patients. Extended thyroidectomy constituted 11% of the surgeries. Temporary hypocalcemia was seen in 31.03% of patients, 5.1% requiring intravenous calcium supplementation. Vocal cord palsy as per nerve at risk was seen in 3.44%. Advanced age, distant metastasis at presentation and aggressive histology has poor outcomes. **CONCLUSION:** Aggressive histology, the extent of thyroid surgery, distant metastasis and age are important factors, which should be factored in the algorithm of thyroid cancer management.

KEYWORDS : carcinoma thyroid, thyroidectomy, hypocalcemia, revision surgery.

INTRODUCTION

The spectrum of thyroid cancer ranges from one of the most indolent cancers to one of the most virulent cancers. However, Thyroid cancer is one of the most treatable forms of cancer if presented early. Surgery is the mainstay in the management of thyroid cancer. Surgical outcomes need to be tempered against the excellent prognosis of the disease. In India, we see a combination of both early and advanced presentation of thyroid cancers. The incidence rate of thyroid cancer in India in women increased from 2.4 to 3.9 per 1 lakh population over a decade. In men from 0.9 to 1.3 per 1 lakh population, a relative increase of 62% and 48% respectively.

AIM:

1. Demographic pattern,
2. Clinical presentation,
3. Treatment details of thyroid malignancy patients and
4. 30-day morbidity after thyroidectomy in thyroid malignancy patients.

MATERIALS AND METHODS:

- STUDY DESIGN: Retrospective study
- SAMPLE SIZE: 58
- STUDY GROUP: Patients of carcinoma thyroid who underwent thyroidectomy.
- STUDY PLACE: Department of General Surgery, King George Hospital, Visakhapatnam.
- STUDY TIME: from June 2018 to June 2020.
- Data was collected from Inpatient department.

Patients who were admitted in view of thyroid swelling were evaluated using routine blood investigations, serum T3, T4, TSH levels, USG of neck, FNAC (Fine needle aspiration cytology) of thyroid nodule and CT; and were diagnosed as thyroid malignancy (ATA 2009 guidelines and the 8th edition of AJCC TNM staging system were followed). All patients underwent vocal cord examination before surgery. The FNAC and final histopathologic diagnosis were used to decide the extent of the surgery.

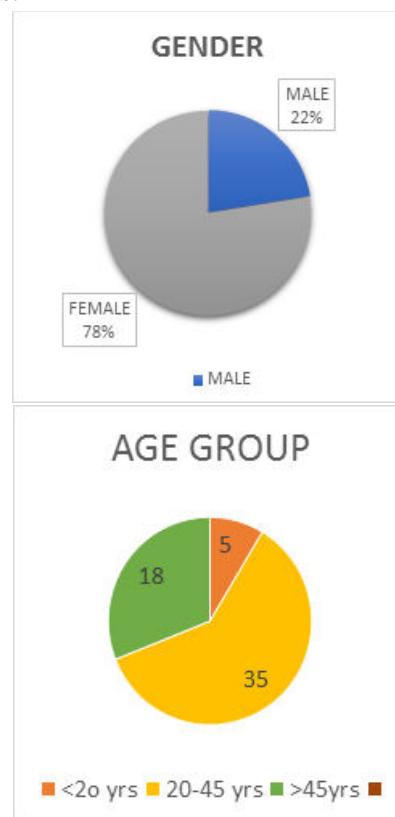
Morbidity can be defined as occurrence of any major or minor complication. Major complications were defined as any patient developing vocal cord palsy, who required intravenous calcium supplementation, or surgical re exploration under general anaesthesia. Minor complication was defined as any patient who required only oral

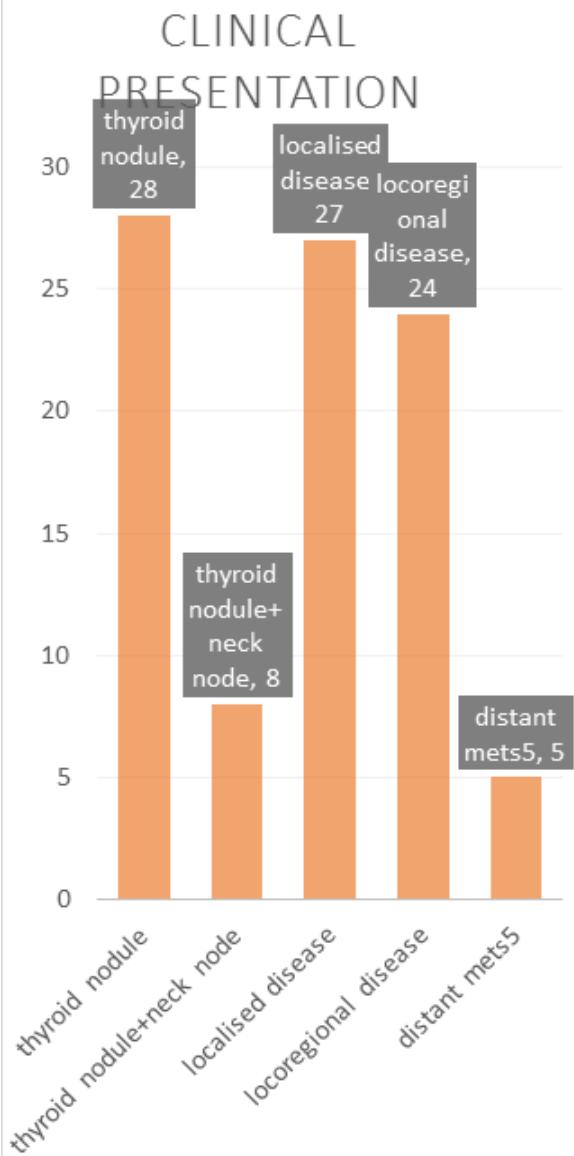
calcium supplementation or conservative management for any complication without a prolonged hospital stay.

LIMITATIONS:

Complications like permanent hypocalcemia were not addressed. No parathyroid assay was employed for assessment of hypoparathyroidism.

RESULTS:





1. THYROID SURGERY	
a. Hemithyroidectomy	6
b. Total thyroidectomy	52
c. Completion total thyroidectomy	4
d. Central compartment surgery	13
e. Lateral neck surgery	3

2. VOCAL CORD STATUS BEFORE SURGERY	
a. Palsy due to prior surgery	2
b. Palsy due to disease	1
c. Vocal cord mobile	55
3. RLN sacrificed due to disease involvement	1
4. Inadvertent parathyroidectomy+autotransplantation	2

S.N	SURGICAL COMPLICATIONS	TYPE	NO OF CASES
1.	30-day mortality		0
2.	No complication		35(60.3%)
3.	Over all complication		23(39.7%)
4.	Major complication		8(13.76%)
5.	Minor complication		15(25.86%)
6.	Temporary Hypocalcemia (17)	Major: I.V calcium	5(8.6%)
		Minor: oral calcium	12(20.6%)
7.	RLN at risk	Major	2(3.44%)
8.	Bleeding	Major	1(1.7%)
9.	Infection	Minor	1(1.7%)

DISCUSSION:

- **DEMOGRAPHICS:** Age is an important prognostic factor in thyroid cancer. It is included in staging system. Age >45 years is known for recurrences and mortality.^[1] About 31% of our patients were over 45 years of age. Presence of nodal metastasis in patients more than 45 years of age had a significantly worse recurrence-free survival.^{[2],[3]}
- **PRESENTATION:** In our study, most common presentation was thyroid swelling alone (48%). 19% of patients had nodal positive disease. Most common site for metastasis is Flat bones (skull bones) followed by lungs (3 cases with skull mets, 1 case with lung Mets and 1 case with both lung and skull Mets).
- **HISTOPATHOLOGY:** Most common histological variant in our study was papillary thyroid carcinoma (55%). Well differentiated tumors accounts for 93% in this study. Aggressive histology was present in 7% cases (4;1 MCT, 2 Poorly differentiated thyroid carcinomas and 1 anaplastic thyroid cancer).
- **RLN INVOLVEMENT AND PALSY:** Thyroid cancers have the potential to invade the strap muscles, RLN, trachea, esophagus, great vessels, larynx and prevertebral space in that order of frequency. In spite of local invasion, surgery remains the mainstay of treatment to achieve an R0 resection status even if this means sacrificing surrounding structures. Mayo clinic data reported about 6.1% RLN infiltration.^[4] The present study had less infiltration rates (4.4%). Bilateral thyroidectomy, malignancy, extended total thyroidectomy, revision surgery, exploration for hemorrhage; significant central compartment lymph nodal resection and lack of RLN identification were some of the risk factors mentioned in literature.^[6] In our study, out of 58 patients who underwent thyroidectomy, 2 patients had vocal cord palsy (due to infiltration of RLN). Rate of RLN at risk was 3.44%, for all thyroid surgery performed, which is comparable to that reported in various studies.^[5]
- **HYPOCALCEMIA:** Transient hypocalcemia rates have been reported up to 46% in the literature.^[9] Our study had a hypocalcemia rate of 29.2%. The factors identified for hypocalcemia in various studies are malignancy, unintentional parathyroidectomy^{[10],[11]} and devascularization of parathyroid glands.^[12] Thomusch *et al.*^[13] reported that the presence of two functioning parathyroid glands is essential to avoid hypocalcemia. Implanted glands have more predictable survival than leaving devascularized gland in the paratracheal area. Risk of hypocalcemia increases with the extent of thyroidectomy^[11] and re operative procedures.^{[7],[8]} In addition, central compartment neck dissection increases the risk of hypocalcemia,^{[14],[15]} which concurs with the findings of the present study.

CONCLUSION:

Thyroid surgery is precise due to the presence of crucial anatomic structures, namely, the RLN and the parathyroid glands. The complications of thyroid surgery can be severe for this indolent disease which can be minimized with meticulous dissection and attention to various details. Thyroid cancer, even with advanced disease, is eminently treatable, with surgery being the mainstay of treatment. Aggressive histology, extent of thyroid surgery and age are important factors, which should be considered in management of thyroid carcinomas.

REFERENCES:

1. Mazzaferri EL, Jhang SM. Long-term impact of initial surgical and medical therapy on papillary and follicular thyroid cancer. Am J Med 1994;97:418-28.
2. Zaydfudim V, Feurer ID, Griffin MR, Phay JE. The impact of lymph node involvement on survival in patients with papillary and follicular thyroid carcinoma. Surgery 2008;144:1070-7.
3. Podnos YD, Smith D, Wagman LD, Ellenhorst JD. The implication of lymph node metastasis on survival in patients with well-differentiated thyroid cancer. Am Surg 2005;71:731-4.
4. McConahey WM, Hay ID, Woolner LB, van Heerden JA, Taylor WF. Papillary thyroid cancer treated at the mayo clinic, 1946-1970: Initial manifestation, pathologic findings, therapy and outcome. Mayo Clin Proc 1986;61:978.
5. Jeannon JP, Orabi AA, Bruch GA, Abdalsalam HA, Simo R. Diagnosis of recurrent laryngeal nerve palsy after thyroidectomy: A systematic review. Int J Clin Pract 2009;63:624-9.
6. Henry BM, Graves MJ, Vikse J, Sanna B, Pekala PA, Walocha JA, *et al.* The current state of intermittent intraoperative neural monitoring for prevention of recurrent laryngeal nerve injury during thyroidectomy: A PRISMA-compliant systematic review of overlapping meta-analyses. Langenbecks Arch Surg 2017;402:663-73.
7. Rob JL, Kim JM, Park CI. Central compartment reoperation for recurrent/persistent differentiated thyroid cancer: Patterns of recurrence, morbidity, and prediction of postoperative hypocalcemia. Ann Surg Oncol 2011;18:1312-8. Mehanna HM, Jain A, Randeva H, Watkinson J, Shah A. Postoperative hypocalcemia-the difference a definition makes. Head Neck 2010;32:279-83.
8. Sippel RS, Ozgul O, Hartig GK, Mack EA, Chen H. Risk and consequences of incidental parathyroidectomy during thyroid resection. Aust N Z J Surg 2007;77:33-6.
9. Sitges-Serra A, Gallego-Otaegui L, Suárez S, Lorente-Poch L, Munné A, Sancho JJ, *et al.*

- al. Inadvertent parathyroidectomy during total thyroidectomy and central neck dissection for papillary thyroid carcinoma. *Surgery* 2017;161:712-9.
10. Edafe O, Antakia R, Laskar N, Uttley L, Balasubramanian SP. Systematic review and meta-analysis of predictors of post-thyroidectomy hypocalcaemia. *Br J Surg* 2014;101:307-20.
11. Thomusch O, Machens A, Sekulla C, Ukkat J, Brauckhoff M, Dralle H, et al. The impact of surgical technique on postoperative hypoparathyroidism in bilateral thyroid surgery: A multivariate analysis of 5846 consecutive patients. *Surgery* 2003;133:180-5.
12. Chisholm EJ, Kulinskaya E, Tolley NS. Systematic review and meta-analysis of the adverse effects of thyroidectomy combined with central neck dissection as compared with thyroidectomy alone. *Laryngoscope* 2009;119:1135-9.
13. McHenry CR, Speroff T, Wentworth D, Murphy T. Risk factors for postthyroidectomy hypocalcemia. *Surgery* 1994;116:641-7.