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# A RARE CASE OF MEDULLARY THYROID CARCINOMA

General Surgery

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## ABSTRACT

**INTRODUCTION:** Medullary carcinoma of thyroid accounts for approximately 5 to 6 % of all the thyroid cancers. (1). It arises from the parafollicular C-cells that normally secretes a number of hormones like calcitonin, serotonin, vasoactive intestinal peptide. MTC is widely accepted as a NEUROENDOCRINE TUMOUR. Both sporadic and familial forms of MTC are seen; with sporadic around 70% of all the cases and familial being 10 to 20% of all the cases.
Calcitonin is the most sensitive and specific tumor marker at the preoperative diagnosis[2] and the post surgery follow up.[3]. Total thyroidectomy is the only successful option for treatment because up to 30% of sporadic MTC and all of the inherited ones are multifocal and bilateral.
**AIM AND OBJECTIVES:** In this case, we report a 58 year old Male patient with swelling in the anterior aspect of neck for 2 years. With Provisional diagnosis of Multi-nodular Goitre, Total Thyroidectomy was done. And final HPE came out to be Medullary Carcinoma Thyroid and the isthmus shows Benign Adenomatoid Nodule.
Post operative Serum Calcitonin came out to be normal. Patient is on regular follow up.
**METHODS:** On the basis of clinical history, provisional diagnosis of MULTIPLE NODULAR GOITRE was made. All the investigations were done which were under normal limits. USG NECK- A heteroechoic nodule of size 6.6*3.4*3.1 cm noted replacing the right lobe of thyroid with rich internal vascularity- Solitary nodule in right lobe of thyroid. FNAC NECK- FOLLICULAR NEOPLASM. ( BETHESDA CLASS 4). Patient was planned for total thyroidectomy. And the specimen was sent for histopathological examination which showed Right lobe of thyroid: Medullary carcinoma and left lobe and isthmus shows benign adenomatoid nodule. Post operatively thyroglobulin and serum calcitonin was done.
Patient is on regular follow up.
**RESULT:** Right lobe of thyroid suggestive of Medullary Carcinoma;
**CONCLUSION:** MTC is an uncommon and rare thyroid malignancy and hence its management is different from that of differentiated thyroid malignancy. Early diagnosis offers a higher likelihood of cure and long term survival. Total thyroidectomy with central compartment neck dissection is the mainstay of treatment. All patients must be kept on regular follow up to avoid recurrence.

## KEYWORDS

Calcitonin, sporadic, medullary carcinoma thyroid, total thyroidectomy.

**CASE PRESENTATION:**
A 58 year old male, known Diabetic and hypertensive for 4 years, on medications, known alcoholic and tobacco smoker ( stopped 3 years back), came with complaints of swelling in the right side of neck for the last 3 years, insidious and progressive in nature, not associated with any other complaints. Patient had no history or symptoms of hypo- or hyperthyroidism.

No other significant history.
Local examination: ( Thyroid region)
A swelling of size 5*4 cms was palpable on the right lobe of the thyroid region, and swelling of size 2*1 cm was palpable in the left lobe of thyroid region;

Moves with deglutition, doesnot moves with protrusion of tongue;
Variable ( firm to hard ) in consistency; nodular surface; lower border of the swelling visible; Deviation of trachea to the left side.
Other systemic examination was normal.
All the investigations were found to be within normal limits.

**Fig.1. Pre operative image. ( taken after consent from the patient).**

USG NECK- A heteroechoic nodule of size 6.6*3.4*3.1 cm noted replacing the right lobe of thyroid with rich internal vascularity- Solitary nodule in right lobe of thyroid.

FNAC NECK- moderately cellular smear shows thyroid follicular cells in clusters. Few of the clusters are infiltrated by lymphocytes. Few follicular cells show mild atypia with mild anisocytosis, nucleomegaly and hyperchromasia. Few clusters showing nuclear moulding.

Impression: FOLLICULAR NEOPLASM. ( BETHESDA CLASS 4).
Under the diagnosis of multi nodular goitre, patient was planned for total thyroidectomy under General Anaesthesia. Specimen was sent for histopathological examination.

And post operatively, thyroglobulin and serum calcitonin levels were checked, which were 51.50 ng/ml and <0.5 pg/ml respectively [within normal limits].

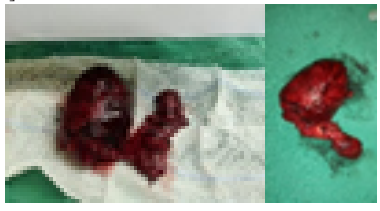


**Fig.2. Specimen image. [ thyroid gland] .**

**HPE REPORT:**
**MICROSCOPIC:**
Sections from right lobe of thyroid shows partially encapsulated tumour, which consists of cells arranged predominantly in insular and trabeculated pattern, few solid areas noted, cells show areas of paleomorphism. Foci of cystic changes and fibrosis also noted. Few intact follicle seen trapped in tumour clusters. There is no capsular invasion noted and the periphery shows compressed normal thyroid

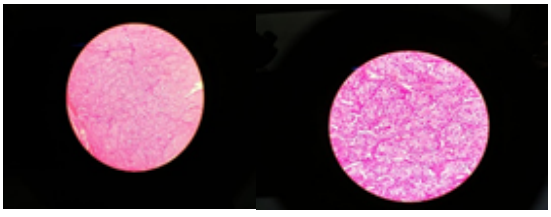
follicle. One foci in the capsule shows vessels with attached tumour to its lumen.

Left lobe of thyroid and isthmus: encapsulated nodule composed of varying sized thyroid follicles lined by benign follicular epithelial cells.

**SPECIAL STAIN:** CONGO RED was done which shows amorphous deposits; POSITIVE for Congo red stain.

**IMMUNOHISTOCHEMISTRY:**
Tumour cells shows strong cytoplasmic staining for synaptophysin, focal positivity for calcitonin and negative for thyroglobulin. Final impression was given to be: **Right lobe of thyroid suggestive of Medullary Carcinoma;**

Left lobe of thyroid and isthmus shows benign Adenomatoid nodule.



## DISCUSSION

Medullary thyroid carcinoma was identified to be a distinct clinical as well as pathological entity in the year 1959 [4]. Sporadic medullary thyroid carcinoma usually presents in the 5th to 6th decade and it has slight preponderance to females. Hereditary MTC younger age group are the most affected people. Medullary carcinoma of thyroid accounts for approximately 5 to 6 % of all the thyroid cancers. MTC is accepted as a NEURO ENDOCRINE TUMOUR. Sporadic around 70% of all the cases and familial being 10 to 20% of all the cases. The most common presentation is a painless solitary thyroid nodule. Calcitonin is the most sensitive and specific tumor marker for preoperative diagnosis and post surgery follow up. Total thyroidectomy is the only successful option for treatment because up to 30% of sporadic MTC. In our case, patient presented with a painless swelling in the front of the neck more on right side. Fnac neck was suggestive was follicular neoplasm. Total thyroidectomy was done and the final HPE result came out to be Medullary carcinoma thyroid ( right lobe). Patient was then referred to oncologist for further management and is under regular follow up. Post operatively, for medullary carcinoma thyroid, serum calcitonin levels can be considered as a specific tumour marker with a high sensitivity rate. It is even used to detect recurrence post surgery.

## CONCLUSION

Medullary carcinoma thyroid is an uncommon and a very rare thyroid malignancy; hence its diagnosis and management is different from the other differentiated thyroid cancers. Early diagnosis can offer a long term survival rate for the patients. All patients must be on regular follow up to look for recurrences.

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