

# Testosterone Threat - Thyroid Swellings in Men

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**Abstract:** *The thyroid gland disorders are a common endocrinological abnormality with varied presentations based on age, gender, epidemiology, diet and family history. The disorders range from benign entities like nodular diseases, goitre, thyroiditis to malignant carcinoma. The thyroid abnormalities in men are more aggressive and have a high degree to be of malignant etiology. This case series include four male patients with two diagnosed as papillary carcinoma, one diagnosed as anaplastic carcinoma and the other found to have follicular adenoma. All patients were managed accordingly and followed up postoperatively. Hence, we conclude that malignant thyroid swellings even though are more common in females than males, the probability of a male thyroid swelling to be malignant is far more likely than being a benign swelling.*

**Keywords:** Thyroid carcinoma, goitre, male thyroid swelling, papillary carcinoma, anaplastic carcinoma, thyroiditis

## 1. Aim

To study the various clinical presentations and management of thyroid swellings in men.

## 2. Methods



### Case Scenario 1

A 33-year-old male came with swelling in the right side of neck for 1 month with no symptoms of compression, hypo or hyperthyroidism. No history of radiation exposure. No significant family history. Takes iodised salt. On examination, v swelling 3x3 cm ovoid shape in level 4, not moving with deglutition, firm, mobile Swelling 2x1cm in right lobe of thyroid, smooth surface, well defined margin, moves with deglutition, firm, lower border palpable

### Investigations

TFT – normal

THYROID ANTIBODIES - absent

THYROGLOBULIN – 250

USG NECK- solid, irregular hypoechoic lesion with micro and macrocalcifications and internal vascularity size 1.8 x 1 cm- TIRADS 4

Level 3,4 malignant nodes max size 1.7 cm

Imp: Papillary ca thyroid with nodal metastasis

CECT NECK – enhancing enlarged lymph nodes in rt level 3,4 largest measuring 2x2 cm in level 4

Multiple hypodense lesion with internal calcification, heterogenous enhancement in rt lobe of thyroid largest 1 x 1 cm

Rt lobe measures 2 x 2 x 3 cm, left lobe measures 1.5 x 1.7 x 3.5 cm, isthmus 4 mm

Imp: Papillary ca thyroid with rt cervical nodal metastasis

FNAC from Rt cervical lymph node: metastatic carcinomatous deposits from papillary carcinoma of thyroid

**Diagnosis-** rt Papillary carcinoma thyroid with cervical lymph nodal metastasis

**Treatment-** Total thyroidectomy with central and right functional lymph node dissection

### Post OP HPE –

- Papillary carcinoma thyroid conventional type m p T1bN1bMx
- Margins free
- 9 out of 29 nodes show metastatic deposits

### Follow Up-

- Nuclear scan taken after 1 month without thyroxine
- No residual disease
- Suppressive dose of thyroxine given

**Case Scenario 2**

A 33-year-old male came with swelling in front of neck for 2 months with no symptoms of compression, hypo or hyperthyroidism. No history of radiation exposure. No significant family history. Takes iodised salt

On examination, Swelling 6x4cm in right lobe of thyroid, smooth surface, well defined margin, moves with deglutition, firm, lower border palpable. Trachea deviated to left side

**Investigations:**

TFT – normal

THYROID ANTIBODIES - absent

THYROGLOBULIN – 100

USG NECK- well defined hypoechoic nodule with internal cystic areas and internal vascularity size 5 x 3.8 x 6.5 cm in rt lobe - TIRADS 4

Left lobe 1.5 x 1.5 cm

Bilateral subcentimetric lymph nodes in level 1b,2

Imp:solitary nodular thyroid

CECT NECK- enlarged lymph nodes in rt level 2 largest measuring 1x1 cm

Enhancing nodules with central necrosis in rt lobe of thyroid measuring 6 x 4 x 4 cm

Trachea deviated to left

Imp: solitary nodular thyroid with cervical lymphadenopathy

FNAC: nodular colloid goitre

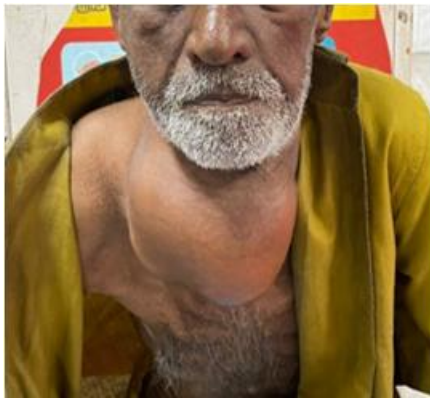
**Diagnosis-** solitary nodular thyroid

**Treatment** – Hemithyroidectomy with frozen section showed colloid goitre with adenomatous hyperplasia follicular neoplasm could not be excluded

Total thyroidectomy was done

POST OP HPE – rt follicular adenoma of thyroid

FOLLOW UP- replacement dose of thyroxine given

**Case Scenario 3**

A 70-year-old male came with swelling in the front of neck for 5 years with difficulty in swallowing and no symptoms of hypo or hyperthyroidism. Loss of appetite and loss of weight present. No history of radiation exposure. No significant family history. Takes iodised salt

On examination, swelling 15x 10 cm irregular shape, bosselated surface, ill-defined margin, not moves with deglutition, firm, lower border not palpable. Trachea deviated to right side. Berry sign positive in left side

**Investigations:**

TFT – normal

THYROID ANTIBODIES – not done

THYROGLOBULIN – not done

USG NECK- ill-defined hypoechoic lesion size 12 x 13 cm with internal vascularity and calcification in subcutaneous and muscular plane- TIRADS 5

Left carotid vessels encased by tumour. Rt lobe of thyroid normal Trachea deviated to right

Imp:soft tissue tumour

CECT NECK: not done

FNAC: anaplastic carcinoma

**Diagnosis:** anaplastic carcinoma

**Treatment:** palliative chemo and radiotherapy

**Case Scenario 4**

A 63-year-old male came with swelling in the left side of neck for 3 months with no symptoms of compression, hypo or

hyperthyroidism. No history of radiation exposure. No significant family history. Takes non iodised salt.

On examination, Swelling 8x5cm in left lobe of thyroid, smooth surface, well defined margin, moves with deglutition, firm, lower border palpable

Swelling 2x1 cm in right lobe of thyroid, smooth surface, well defined margin, moves with deglutition, firm, lower border palpable. Trachea deviated to right

### Investigations

TFT – normal

THYROID ANTIBODIES - absent

THYROGLOBULIN – 250

USG NECK- irregular hypoechoic lesion with micro and macrocalcifications and internal vascularity size 8 x 5x 3cm in rt lobe of thyroid- TIRADS 4 Hypodense nodules in left lobe – TIRADS 2

Bilateral subcentimetric lymph nodes in level 1,2

Imp: Papillary ca thyroid with cervical lymphadenopathy

### CECT Neck

Hypodense lesion with internal calcification, heterogeneous enhancement in lt lobe of thyroid 4x 4 x 8 cm shifting trachea to right. Rt lobe measures 2 x 2 x 5 cm, left lobe measures 1.5 x 1.7 x 3.5 cm, isthmus 4 mm. Bilateral subcentimetric lymph nodes in level 1,2

Imp: Papillary ca thyroid

FNAC: papillary carcinoma of thyroid

**Diagnosis:** Papillary carcinoma thyroid

**Treatment:** Total thyroidectomy with central lymph node dissection

POST OP HPE – Papillary carcinoma thyroid conventional type m p T1bN1aMx

Margins free, 2 out of 8 nodes show metastatic deposits

### FOLLOW UP-

Nuclear scan taken after 1 month without thyroxine

No residual disease

Suppressive dose of thyroxine given

### 3. Discussion

Thyroid gland is a major gland secreting thyroxine, a major catabolic hormone essential for basal metabolism and development. The abnormalities of thyroid gland vary in age, gender, epidemiology and family history. Age is important for malignancy as differentiated thyroid cancer occurs early, familial cancers occur earlier than anaplastic cancer. Incidence of thyroid gland dysfunction is found to be more in females than male. Epidemiological causes include hilly areas, iodine deficient diet prone areas leading to colloid goitre.

The symptoms range from cosmetic blemish to hypothyroid, hyperthyroid, pressure effects and metastases to various parts of the body. Thyroiditis is associated with fever. Malignancies such as papillary carcinoma are common with previous history of radiation to neck 10-20 years back, thyroglossal cyst whereas follicular carcinoma are prevalent in patients with iodine deficiency goitre, Hashimoto thyroiditis. Anaplastic carcinoma has an aggressive course with poor prognosis. Medullary carcinoma of thyroid is associated with pheochromocytoma in MEN2 syndrome.

The workup includes quadruple assessment [2] consisting of clinical examination, radiological evaluation with ultrasound imaging, CECT Neck, thyroid scintigraphy scan; biochemical evaluation with thyroid function test and histopathological evaluation with ultrasound guided FNAC fine needle aspiration cytology of target lesion.

The treatment varies according to benign or malignant etiology; age; general condition. The treatment options include anti thyroid drugs for toxic goitre, radioactive iodine ablation and surgery. Antithyroid drugs such as carbimazole, methimazole, propylthiouracil are indicated for thyrotoxicosis, preparation before surgery and during initial 6-12 weeks post radioiodine ablation. Radioiodine ablation using iodine I131 has a dose 5 millicurie with indication for surgically unfit individuals, failed medical therapy and contraindicated in pregnancy and children. Surgery involves total thyroidectomy for all thyroid abnormalities except for solitary nodular thyroid confirmed to be of benign etiology. Central compartment neck dissection is done for involved cases and prophylactically for medullary carcinoma whereas functional neck dissection is performed for lateral neck node involvement. Post operatively differentiated cancers are starved of thyroxine to undertake whole body radioiodine scan to detect residual or metastatic disease followed by suppression dose of thyroxine on confirming its complete removal.

Nodular disease, thyroiditis and malignancy are common in females in general [4] whereas thyroid swelling in males are found to be malignant etiology more commonly papillary carcinoma than benign [3][5].

### 4. Conclusion

Thyroid swellings in males have a higher predilection to be malignant swellings than in females with ratio of 4:1

Isolated more than dominant, solid more than cystic and in men more than women thyroid swellings are most likely to be malignant.

**Conflicts Of Interest:** None

**Funding:** None

**Ethical Approval:** Not needed

## References

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