Mediastinal mass: Normal tissue at abnormal site

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CLINICAL HISTORY

A 57-year-old woman

- Complains of fever (on and off) , cough with expectoration - 1 month
- Sputum was scanty , yellowish and mucoid
- K/C/O DM - 1 month
- History of hysterectomy - 5 years ago
- History of chronic cough (on and off) - 6/7 years
- No history of - HTN/Allergy/Asthma/Smoking/TB/Alcohol/Covid
- No history of breathlessness/chest pain/weight loss/Loss of appetite.
- Bowel and bladder habits - normal

LAB INVESTIGATIONS

CBC

- **Hb - 10 g/dl**
- TLC - 7,100/ul
- Platelet - 3,02,000/ul
- RBC - 3.73/ul
- PCV - 32.40%
- MCV - 86.90 fl
- MCH - 28.90 pgms
- MCHC - 33.30 g/dl
- RDW - 13.40%

PBS - WNL

HbA1c - 8.10

WBC differential count

- Neutrophils - 71%
- Eosinophils - 5%
- Basophils - 0%
- Lymphocytes - 14%
- Monocytes - 10%

TFT

- Serum - free T3 - 2.61 pg/ml *(1.71-3.71)*
- Serum - free T4 - 0.99 ng/dl *(0.71-1.85)*
- TSH - 1.25 uIU/ml *(0.35-4.94)*

INVESTIGATIONS contd..

LFT

- Tot Bilirubin - 0.46 *(0.22 - 1.20 mg/dl)*
- Conj Bilirubin - 0.15 *(upto 0.5 mg/dl)*
- Unconj Bilirubin - 0.31 *(0.1 to 1.0 mg/dl)*
- SGOT - 17 *(8-43 U/lt)*
- SGPT - 19 *(7-45 U/lt)*
- ALk Phosphatase - 82 *(35-104 U/lt)*

Urine RE - WNL

Infectious Diseases

- HIV - NR
- HCV -NR
- HBsAg -NR

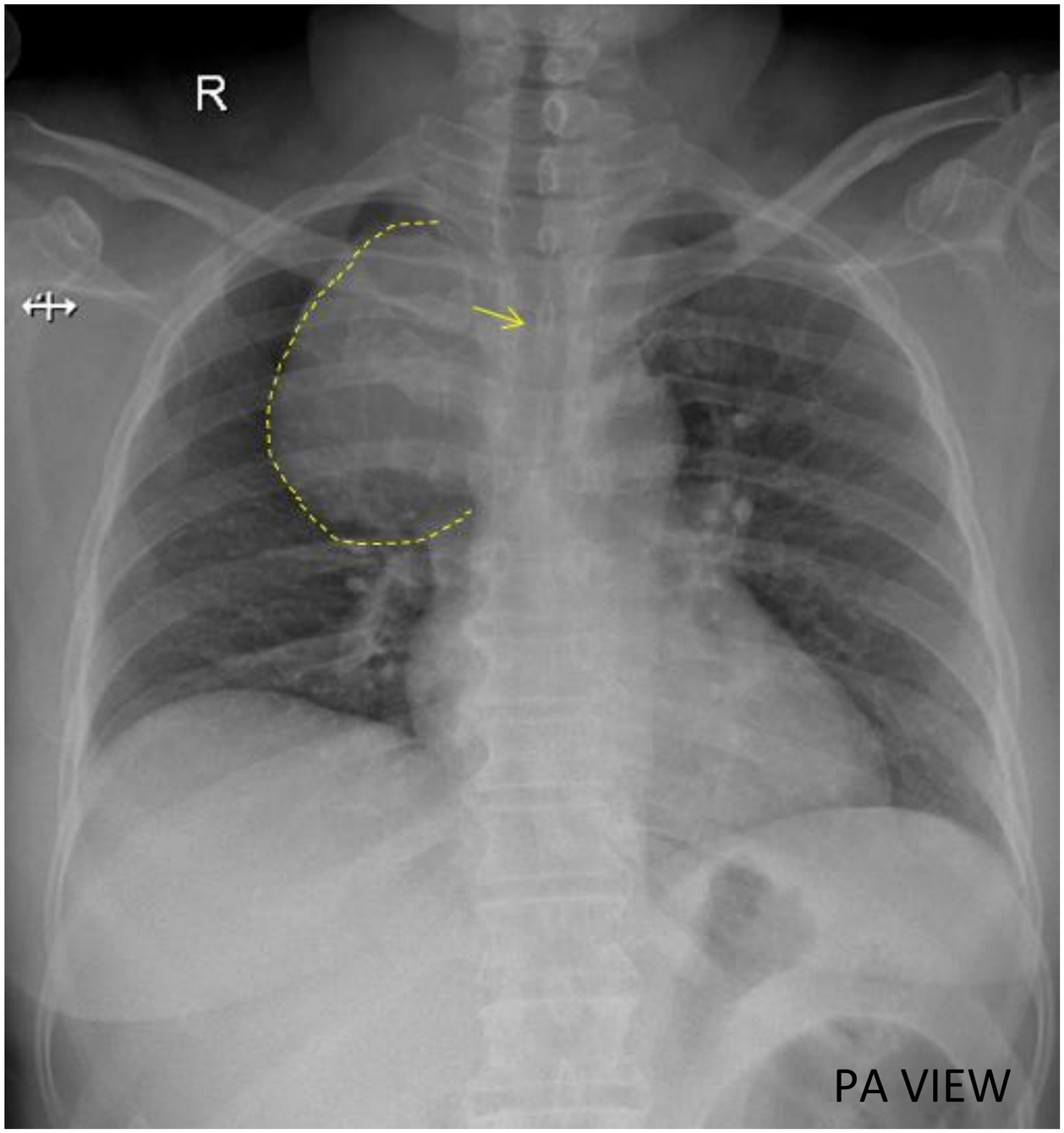
Clinical Chemistry

- Sodium - 138 *(136-145 mmol/lt)*
- Potassium - 4.20 *(3.50-5.10 mmol/lt)*
- Chloride - 101 *(98-107 mmol/lt)*
- Urea 22 *(17-49 mg/dl)*
- Creatinine - 0.64 *(0.6-1.2 mg/dl)*

Coagulation profile - WNL

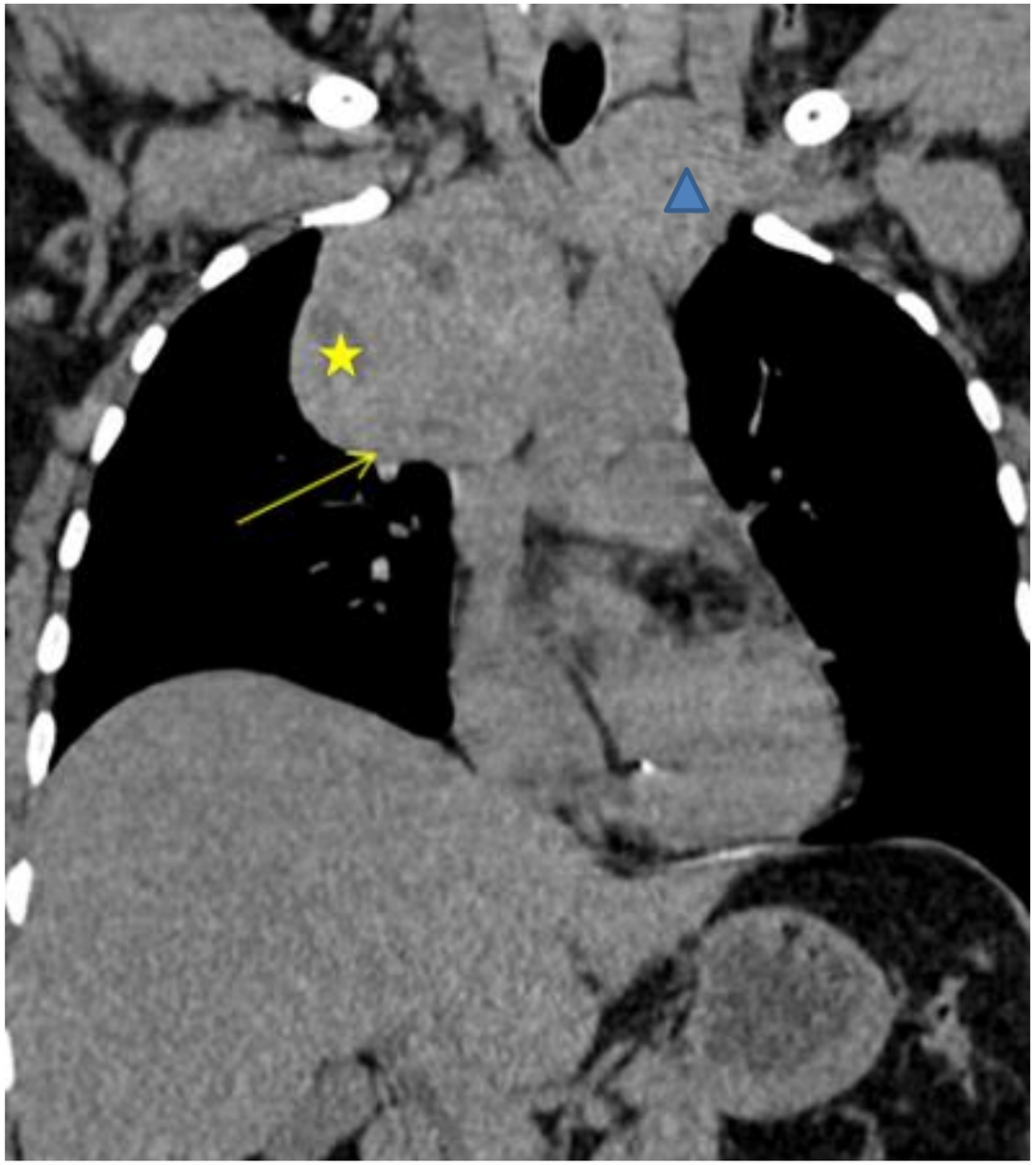
- **BAL** for malignant cell - Negative
- Sputum for **culture** - No growth
- Sputum **ZN stain** - Negative

CHEST XRAY

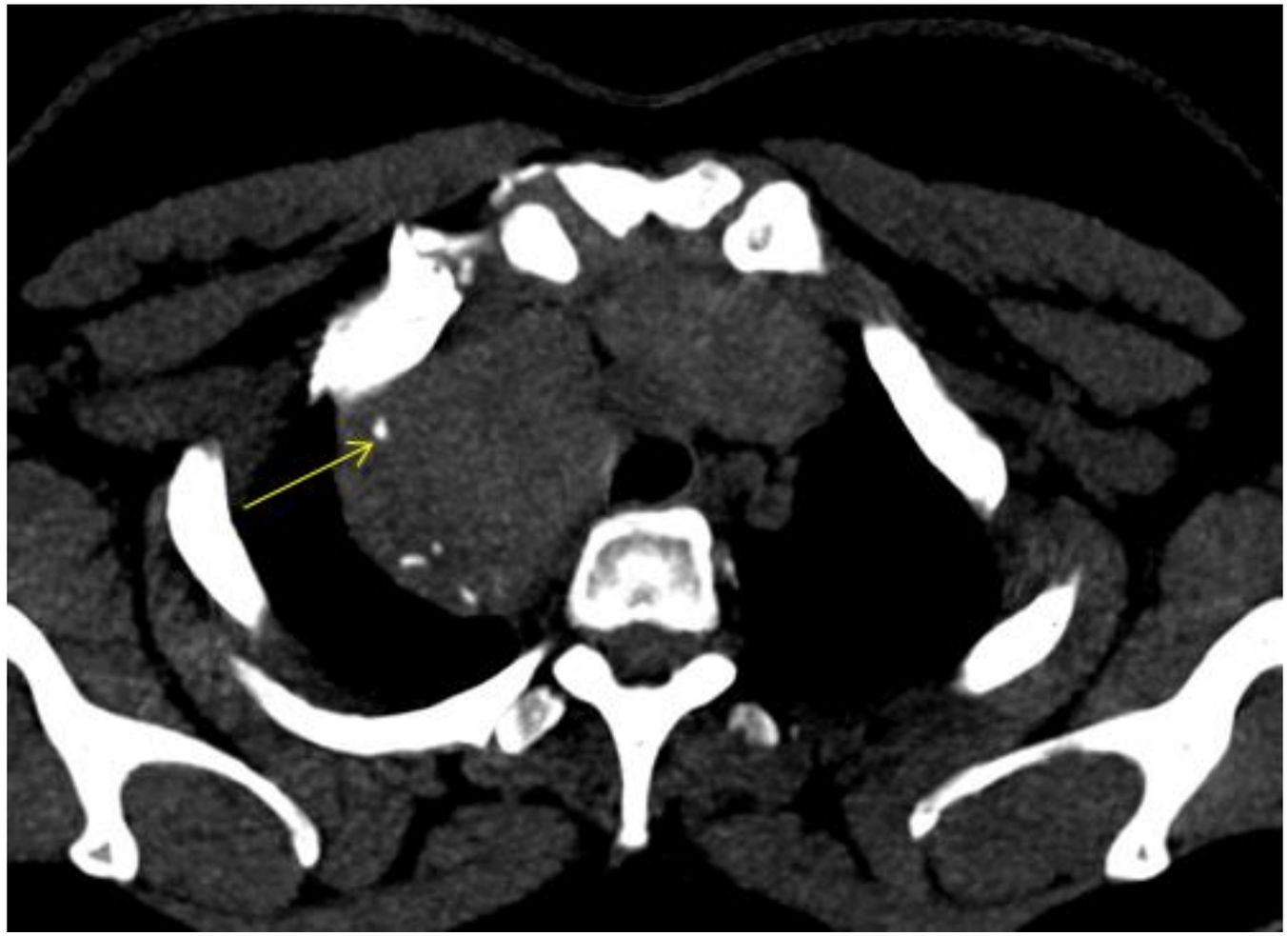


A large well defined radio opacity is noted in the right upper lobe and middle lobe extending from T1 to inferior surface of T5 vertebra causing widening of the anterior mediastinum, causing deviation of trachea towards left side at the level of T2 vertebra.

PLAIN CT SCAN THORAX



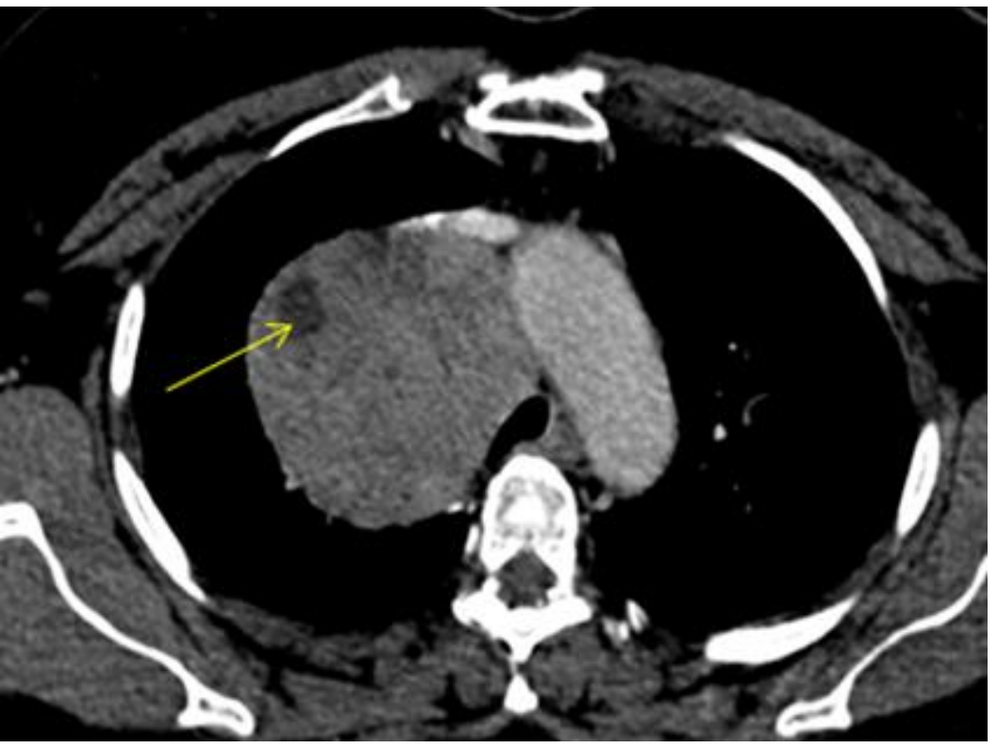
CORONAL VIEW



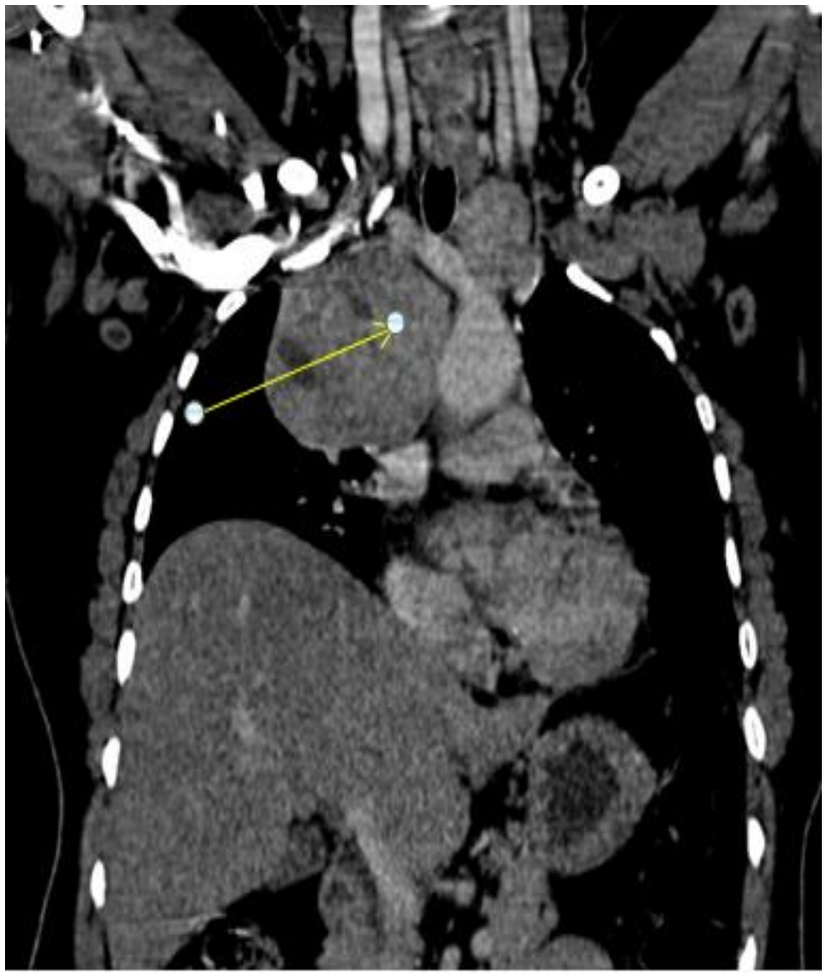
AXIAL VIEW

Well defined soft tissue density (slightly hyperdense than skeletal muscles) lesion of approximate size 70 x 70 x 69 mm (TR x AP x CC) is seen in superior mediastinum in right paratracheal location. The lesion shows fluid density cystic areas and peripheral small calcifications.
Another similar morphology lesion of approximate size 49 x 29 x 50 mm (TR x AP x CC) is seen in superior mediastinum left anterolateral to trachea, extending in lower portion of neck. Superiorly it is abutting left lobe of thyroid .

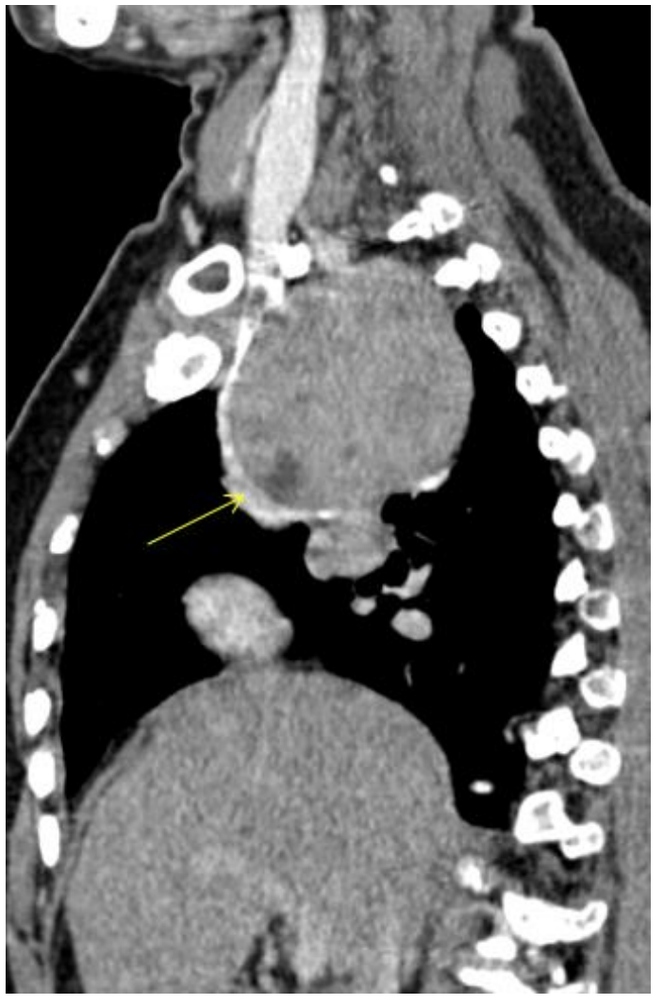
CECT THORAX



AXIAL



CORONAL



SAGGITAL

On post contrast study, solid component of the lesion shows mild enhancement while cystic areas don't show enhancement.

- **Superiorly –abutting right subclavian artery and lower strap muscles of neck**
- **Inferiorly - azygous vein.**
- **Anteriorly- displacing superior venacava.**
- **Anteromedially -abutting arch of aorta.**
- **Posteromedially- compressing trachea, abutting right main bronchus and brachiocephalic artery**
- **Superolaterally- abutting right 1st rib, however no obvious bony involvement noted.**
- **.Laterally -abutting left internal jugular. Inferiorly it is abutting left innominate vein.**

INVESTIGATIONS contd..

CT guided biopsy

Gross Received multiple grey white linear tissue cores , ranging from 0.2 to 0.4 cm in length

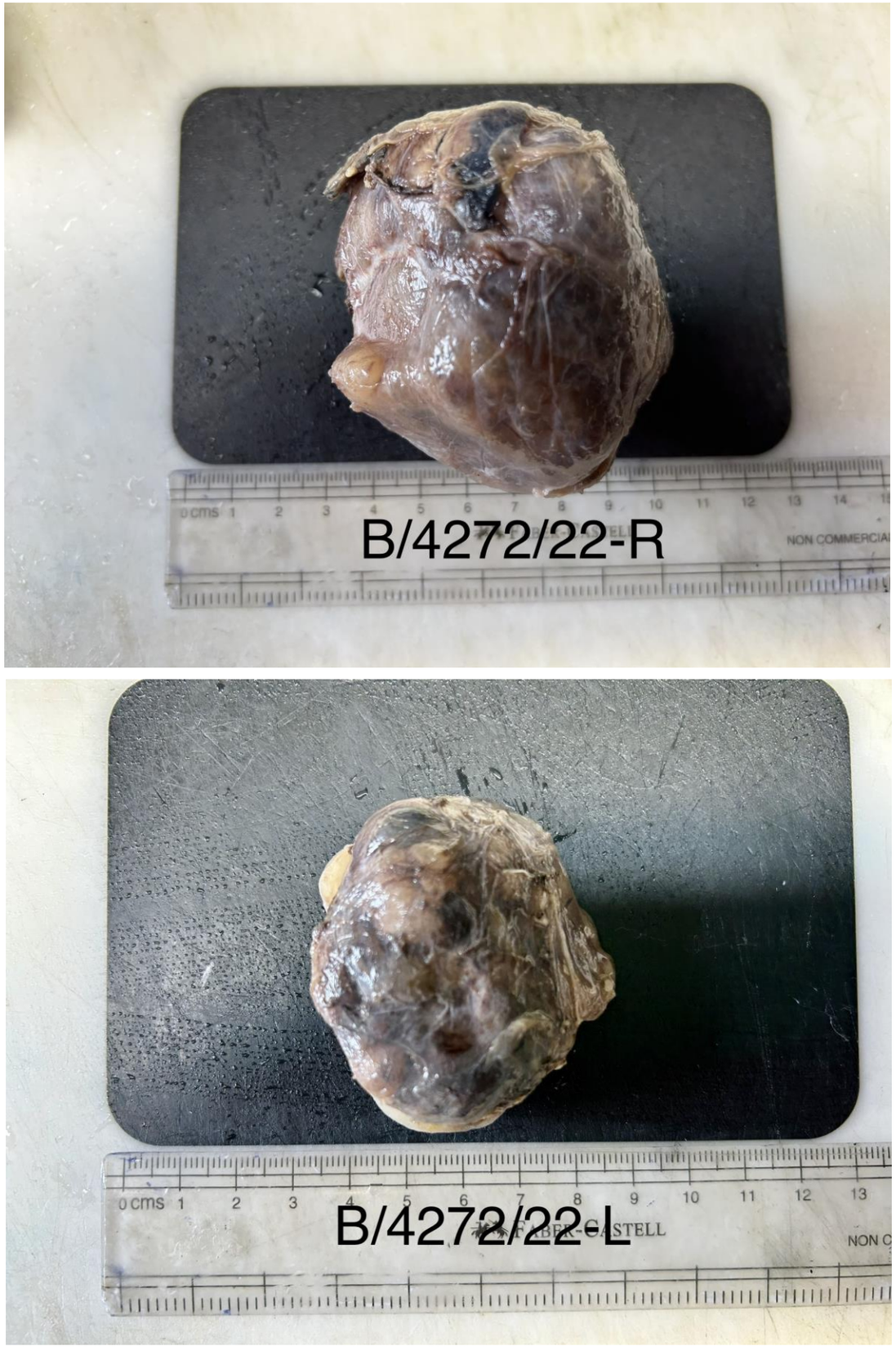
Microscopy Sections show thyroid tissue comprised of thyroid follicles of varying sizes filled with colloid and lined by cuboidal epithelium. No evidence of atypia / malignancy

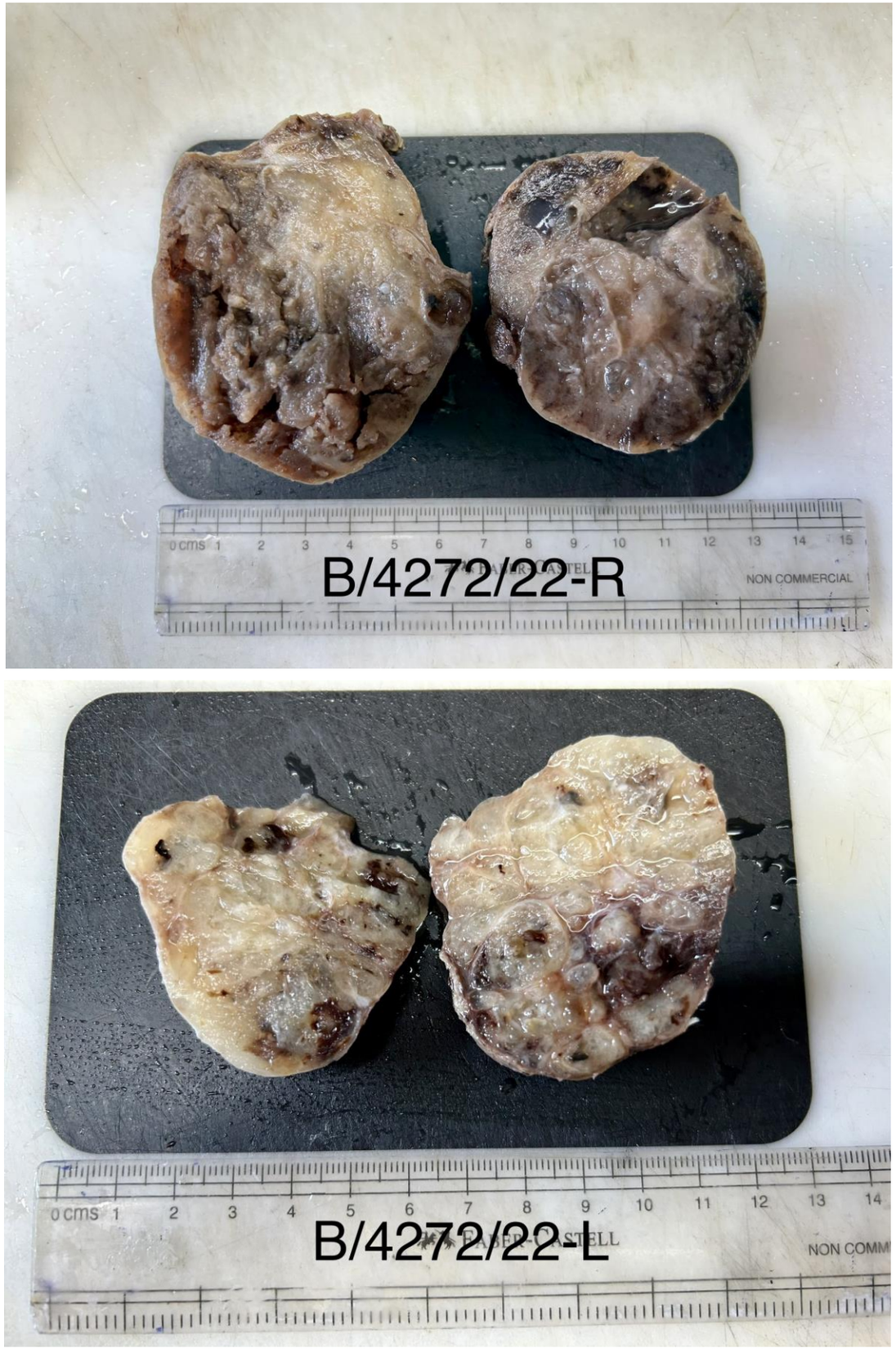
Impression Suggestive of Ectopic thyroid tissue - Colloid Goitre

USG neck - Colloid nodules in otherwise normal thyroid.

Based on the reports of investigations, surgical resection of the mediastinal mass was performed .

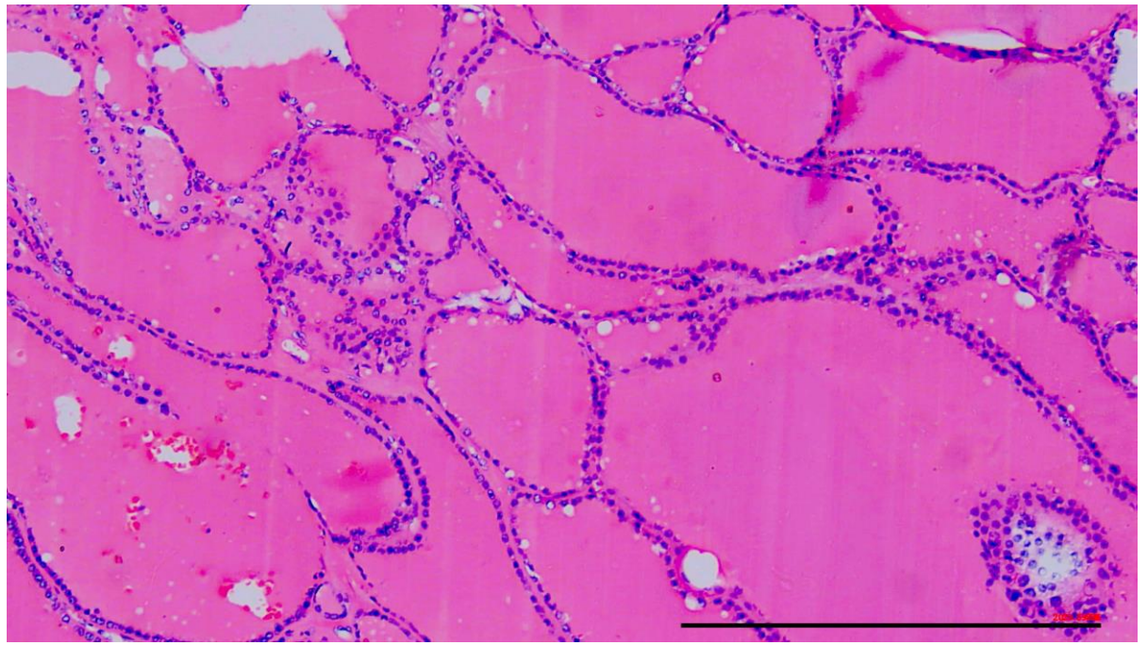
Histopathological Examination (Gross)



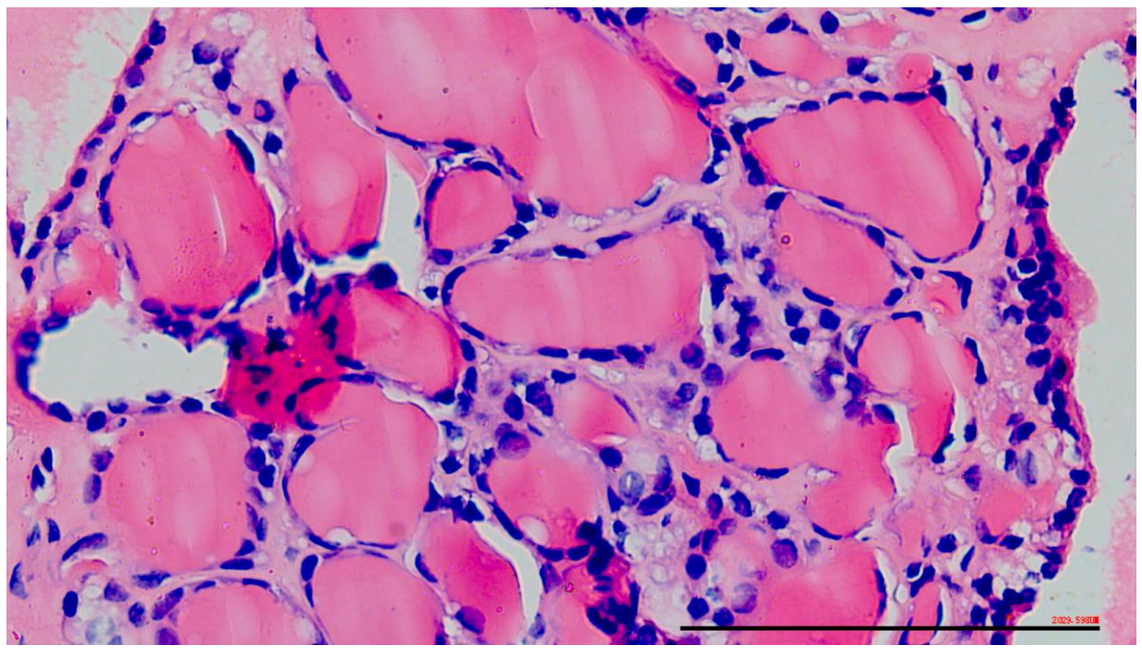


INVESTIGATIONS contd..

Histopathological Examination (Microscopy)



B/4272/22 ; H&E stain ; 4x



B/4272 ; H&E stain ; 10x

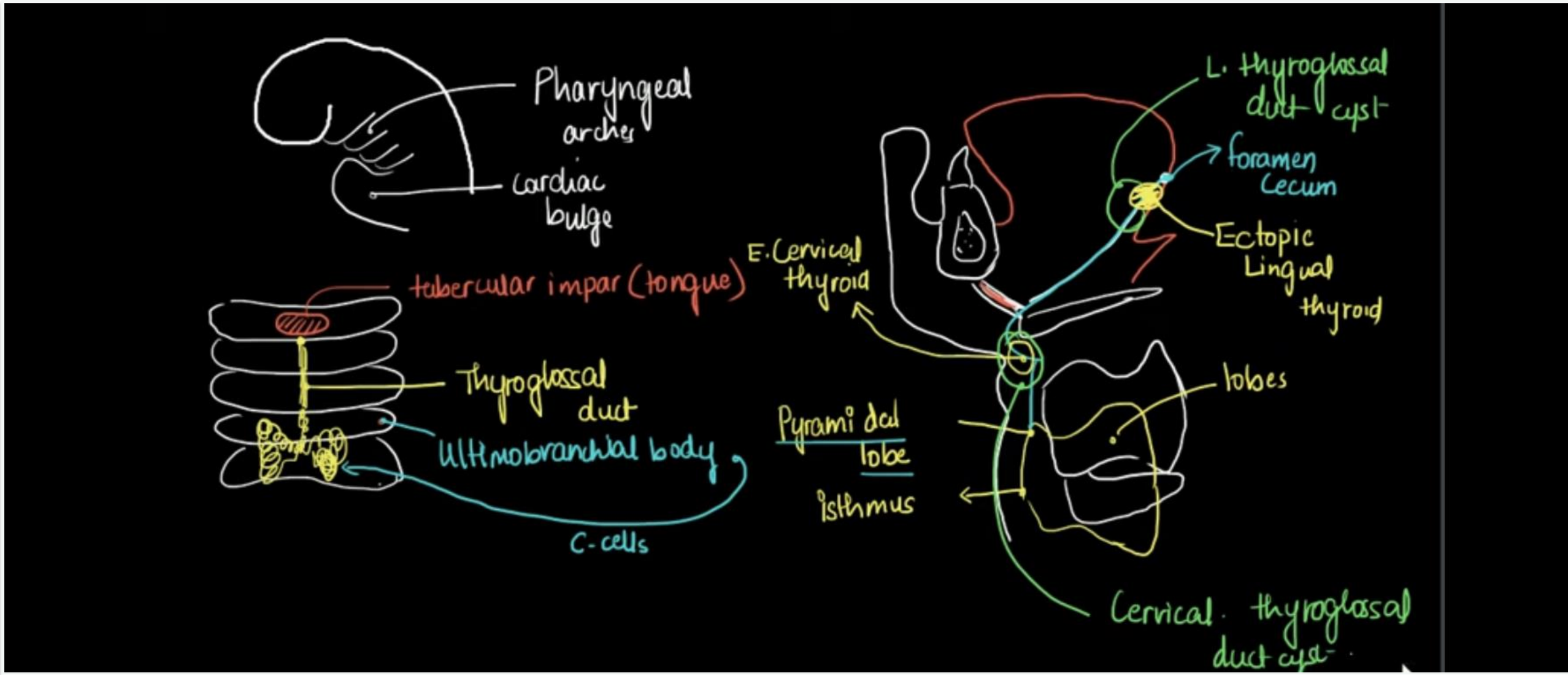
Thyroid follicles of varying size and shape, lined by cuboidal epithelium and is filled with colloid. No atypia / malignancy

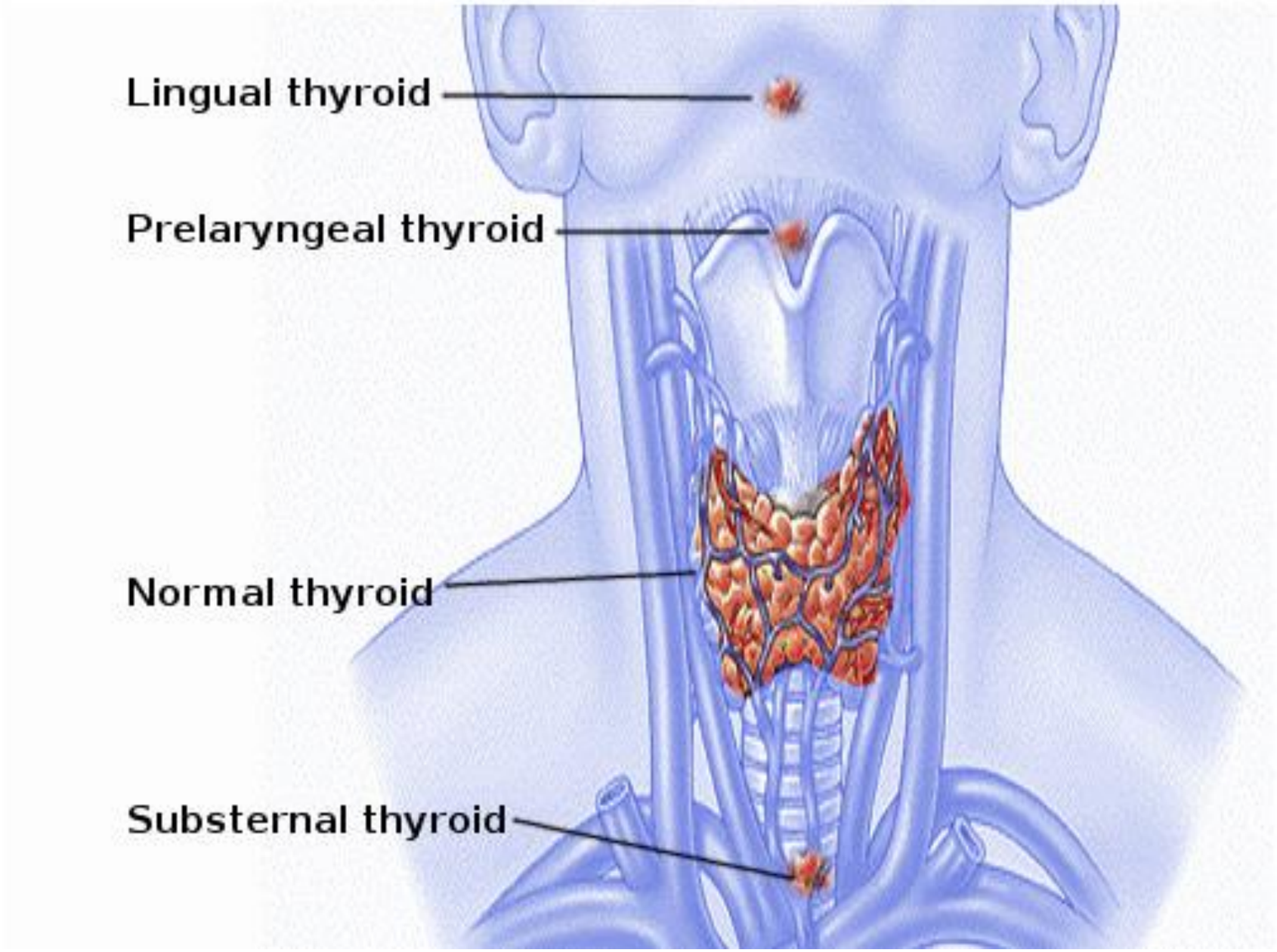
<u>Impression</u> - Consistent with Ectopic Thyroid tissue - Multinodular Goitre

Discussion

- **Ectopic thyroids occur one in 1,00,000 people**
- **Most of them (90%) - Lingual Thyroid**
- **Mediastinal Ectopic Thyroid - <1% of mediastinal tumors**
- **1% of ectopic thyroids show malignant transformation**
- **Result from abnormal embryonic development**
- **Most mediastinal ectopic thyroids are euthyroid & usually asymptomatic**
- **Symptoms if present are usually cough**

Thyroid Embryonic Development





Locations of ectopic thyroid

Conclusion

Ectopic thyroid in mediastinum is a very rare occurrence

When encountered as a solid mass , differential diagnosis is important

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Thank you

CXR (Post OP)