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An enigmatic mediastinal mass

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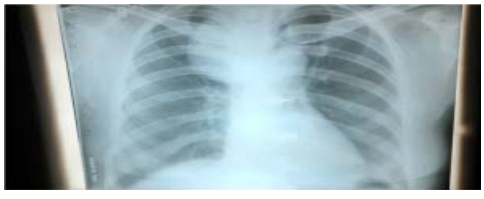
Abstract : The incidence of mediastinal thyroid mass is about 8.7. Among them the incidence of a true isolated intrathoracic thyroid mass is 1. Most such masses and benign in nature. There are no proper published reports stating the incidence of malignancy in an isolated mediastinal thyroid mass.50 year old female presented with the complaints of dyspnoea for 3 months. She was evaluated with electrocardiogram, chest x-ray and CECT chest and was diagnosed as a paraoesophageal duplication cyst. Thoracotomy and excision of the cyst was done and the specimen sent for histopathology. It revealed a surprise as papillary carcinoma thyroid. The patient was then evaluated for any pathology in the thyroid gland. As FNAC of the thyroid gland revealed a papillary carcinoma , total thyroidectomy was done after and the histopathology of specimen also revealed a papillary carcinoma of thyroid gland. Suppressive dose of thyroxine was started and the patient is on follow up for a period of one year.

Keyword :intrathoracic thyroid carcinoma, papillary carcinoma thyroid

The presence of thyroid tissue in the thorax has been given a variety of names but the most common terminology used is ‘intrathoracic’ and ‘mediastinal’. The presence of thyroid tissue in such non anatomic sites has been explained by extension from neck being attenuated with time or presence of orthotopic tissue in the mediastinum itself. Most common association is the presence of ectopic parathyroid glands (1). The rate of intrathoracic thyroid is 8.7% (2). The available classification systems for intrathoracic thyroid are Higgins classification and the Randolph classification(3). The latter is more accepted and accordingly a truly intrathoracic thyroid has been classified as Randolph type3. To classify a thyroid as truly intrathoracic it has to fulfil the Shield criteria (2,4) which are

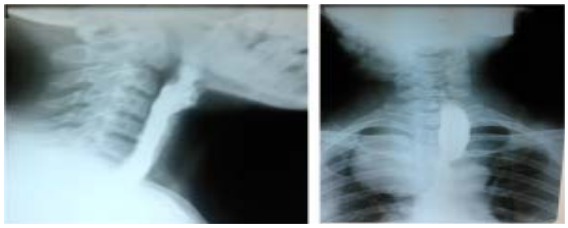
• Tissue completely separated from the gland in the neck
• Blood supply from the vessels from thorax (not from inferior thyroid vessels)
• Cervical thyroid normal or completely absent
• No prior thyroid surgeries in the past
• No previous thyroid malignancy
• No similar pathologic process in the cervical and so called ectopic thyroid tissue

Though the criteria exist it is not fully accepted due the variations in presentations of such thyroid masses. Most of the intrathoracic thyroid swellings are benign-either multinodular goitre or toxic hyperplasia(5). The occurrence of malignancy in such a setting is a rarity in itself and no case series exists. Only a handful of case reports are available. We report such a case managed jointly by the Department of General Surgery and the Department of Cardiothoracic Surgery in a tertiary care hospital. 50 yr old female was referred to the department of Cardiology with the complaints of dyspnoea for a period of three months. She did not give any other complaints suggestive of a cardiac aetiology. There were no other complaints suggestive of any specific systemic pathology. On general survey her nutritional status and performance status were good. Her vitals were stable. On examination of the cardiovascular system, respiratory system, central nervous system and abdomen, no significant clinical findings were elicited. She was evaluated with an ECG which was found to be normal. Her Cardiac ECHO was also found to be normal. Her blood reports including haemoglobin, complete haemogram, bleeding time, clotting time, renal parameters, electrolytes and ESR were normal. A chest X-ray PA view was taken and it revealed a radio-opaque shadow in the superior mediastinum a little to the right side.

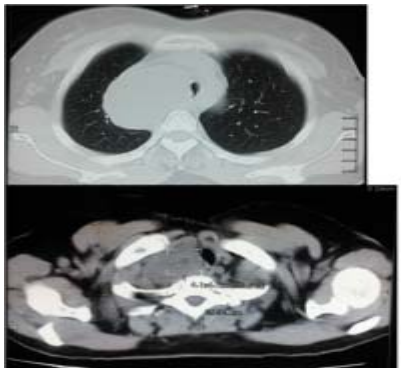


Chest X-Ray PA view

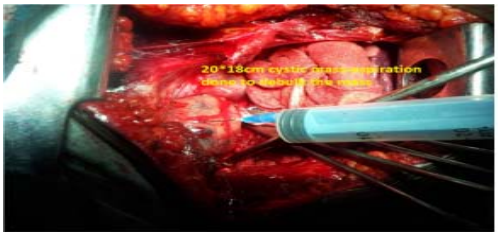
Barium swallow study was done and it revealed the same radio-opaque shadow along with another extrinsic compression of the thoracic oesophagus from the left side.

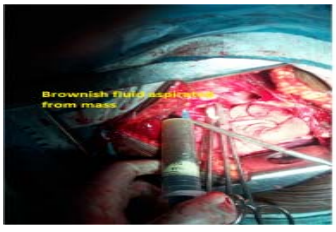


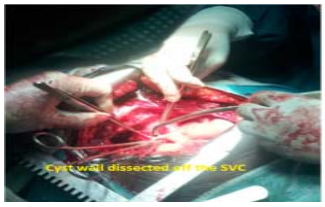
Barium Swallow
Contrast enhanced CT of the Thorax was done. It revealed an 8*6*6.5 cm well defined cystic lesion with irregular calcification noted in the right tracheoesophageal groove. No contrast enhancement seen. The Rt subclavian artery was arising from left side passing posterior to the cyst suggestive of Aberrant Rt subclavian artery (seen as the extrinsic compression in barium swallow films). The final report was suggestive of an esophageal duplication cyst.



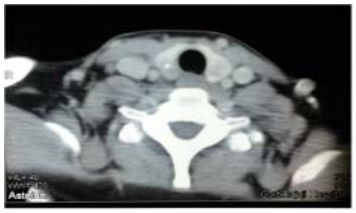
Contrast enhanced CT Thorax
Anterolateral thoracotomy was done and it revealed a 20*18 cm cystic mass in the superior mediastinum close to the superior vena cava. In order to avoid injury to the superior vena cava, aspiration of the cystic mass was done and it revealed brownish aspirate. Once the cyst collapsed following aspiration the wall of the cyst could easily be dissected off the superior vena cava and other surrounding structures. Also the blood supply to the cystic mass was seen to arise purely from the intrathoracic vessels and the wall o the cyst contained multiple follicles like structures. Intercostal tube drain was kept after checking the lung for full expansion and the patient was extubated. The post operative period was uneventful.



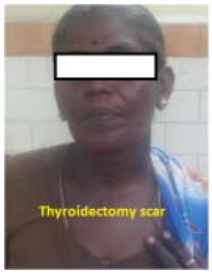




Histopathological evaluation of the cystic mass revealed a diagnostic surprise as papillary carcinoma of the thyroid. Thyroid gland evaluation was done following the report. Thyroid function test (TSH, FT3, FT4) was found to be normal and hence the patient in euthyroid state. Contrast enhanced CT of the neck was done and the report was 0.5*0.4cm hypo dense nodule with calcification in the inferior pole of Rt lobe of thyroid and 0.9*0.8cm nodule in the Lt lobe of thyroid. No evidence of enlarged lymph nodes.



Contrast enanced CT Neck
Ultrasound guided FNAC of the nodule was done and the report was papillary carcinoma of thyroid gland. Indirect laryngoscopy was done and it revealed normal structure and function of the vocal cords. Total thyroidectomy was done then and the post operative period was uneventful.



The histopathology report of the thyroid specimen also revealed papillary carcinoma of the thyroid. The patient was put on suppressive dose of thyroxine and regular once in 3 month follow up was done. During follow up the patient was evaluated clinically and thyroglobulin levels and TSH levels were also monitored. The patient has now been followed up for a period of one year now with no evidence of metastasis. Hence the final diagnosis of this patient is Papillary carcinoma of the thyroid gland with truly isolated intrathoracic thyroid carcinoma (Randolph type3).

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