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DELAYED DIAGNOSIS OF THE ACTUAL CAUSE FOR WHEEZE IN A LABELLED BRONCHIAL ASTHMATIC - ROLE OF ANAESTHESIOLOGIST AS A PERIOPERATIVE PHYSICIAN

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ABSTRACT

Aim: Approach to a patient like a primary physician with meticulousness in eliciting history and evaluation, makes an anaesthesiologist a perioperative physician.

Case Report: Our patient was diagnosed to have bronchial asthma for 3 years duration and admitted with a renal malignancy. During pre operative evaluation he was found to have mediastinal widening. On further evaluation with computerized tomography, diagnosed to have retrosternal goitre compressing the trachea. Combined procedure of right nephrectomy and right hemithyroidectomy was done necessitating sternotomy. On post-operative follow up patient had no wheeze after the thyroidectomy.

Discussion: The natural history of retrosternal goitre is of a slow increase in size, often presenting as an incidental finding on a chest x-ray. Patients with retrosternal/substernal goiter may not have an obvious swelling in the neck. They may present with wheeze and wrongly labelled as an asthmatic like in our patient. Late onset wheeze, persistent wheeze inspite of treatment, exertional dyspnoea, widening of superior mediastinum in chest x-ray made us to think about possible airway obstruction other than bronchial asthma for wheeze. Confirmed it to be a paratracheal, retrosternal colloid goitre.

Conclusion: The late onset wheezer to be evaluated for anatomical airway obstructions. Approach to a patient like a primary physician with meticulousness in eliciting history and evaluation, makes an anaesthesiologist a perioperative physician.

Keywords: Retro sternal goitre, Bronchial asthma, Wheeze, Mediastinal mass.

INTRODUCTION

The natural history of retrosternal goitre is of a slow relentless increase in size, often presenting as an incidental finding on a chest x-ray. Patients may have retrosternal/substernal goiter without obvious swelling in the neck. The majority of patients with retrosternal goiter presents with shortness of breath or asthma like symptoms.

CASE REPORT

A 64 year old male, known diabetic and bronchial asthmatic was diagnosed to have right renal cell carcinoma and posted for open right nephrectomy.

He is a diabetic on oral hypoglycemic agents for 6 years, on regular follow up and good glycemic control. Bronchial asthmatic for the past 3 years on fluticasone and salbutamol inhalers.

During pre-anaesthetic evaluation, physical examination was normal other than the bilateral occasional wheeze on auscultation. Airway examination revealed short neck and all other parameters were normal. Blood investigations and ECG were within normal limits. Computerized Tomography (CT) of abdomen revealed a large heterogeneously enhancing mass lesion arising from the lower half of right kidney suggestive of

malignancy with no evidence of secondaries. with tracheal deviation to the left (Figure 1).
Chest x ray showed superior mediastinal widening

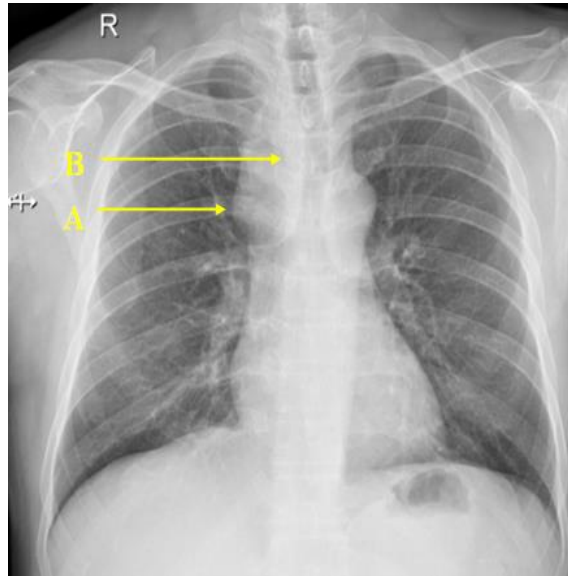


Figure 1: Chest X ray showing superior mediastinal widening (A) with tracheal deviation to the left (B).

Hence CT of thorax was done to rule out secondaries, which showed a large, lobulated heterogeneously enhancing soft tissue mass lesion arising from right lobe of thyroid and extending inferiorly into the mediastinum along right paratracheal region upto the level of carina. Mass effect over trachea was seen causing transverse lumen narrowing with minimal transverse diameter measuring 8.0 mm (Figure 2). There was no significant mediastinal lymphadenopathy.

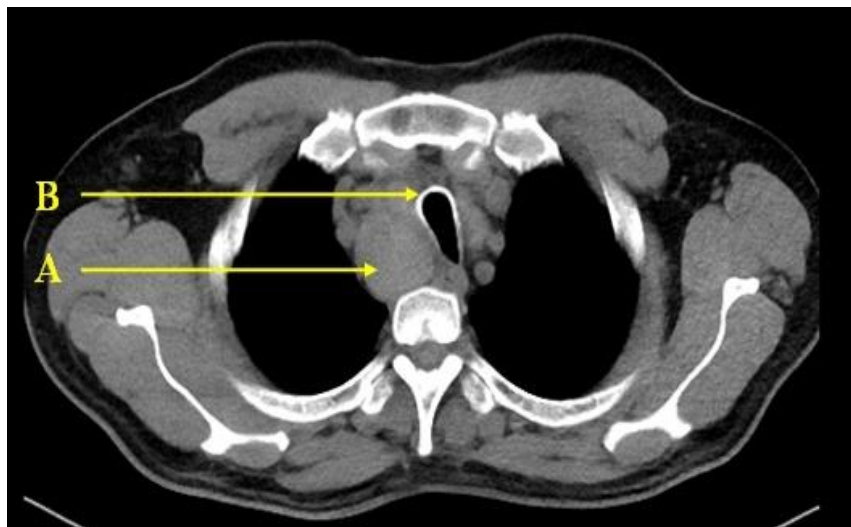


Figure 2: CT - Thorax showing soft tissue mass lesion arising from right lobe of thyroid(A) causing mass effect over trachea with minimal transverse diameter measuring 8.0 mm(B).

Pre operative workup involved Urologist, Anaesthesiologist, Pulmonologist, General and Cardiothoracic surgeons. It was decided to rule

out the secondaries of renal cell carcinoma in thyroid. Patient underwent an awake fiberoptic bronchoscopy for EndoBronchial UltraSound

(EBUS) guided needle aspiration of the right paratracheal mass. Cytology showed features suggestive of colloid goitre.

Patient was finally diagnosed to have right renal cell carcinoma and colloid goitre with retrosternal extension. He was planned for right nephrectomy, right hemi thyroidectomy and if needed sternotomy. General anaesthesia with epidural analgesia was planned and executed. Patient was intubated with 8 mm ID cuffed endotracheal tube under titrated doses of propofol and sevoflurane

without muscle relaxant. Right nephrectomy was done. On neck exploration, right side lower end of thyroid gland appeared to be plunged inside the thorax. After delivering this lower end of the gland, another nodular lesion extending into the superior mediastinum was noticed. The entire mass was removed following sternotomy. Patient was extubated at the end of surgery without any complications. Post operative period was uneventful.

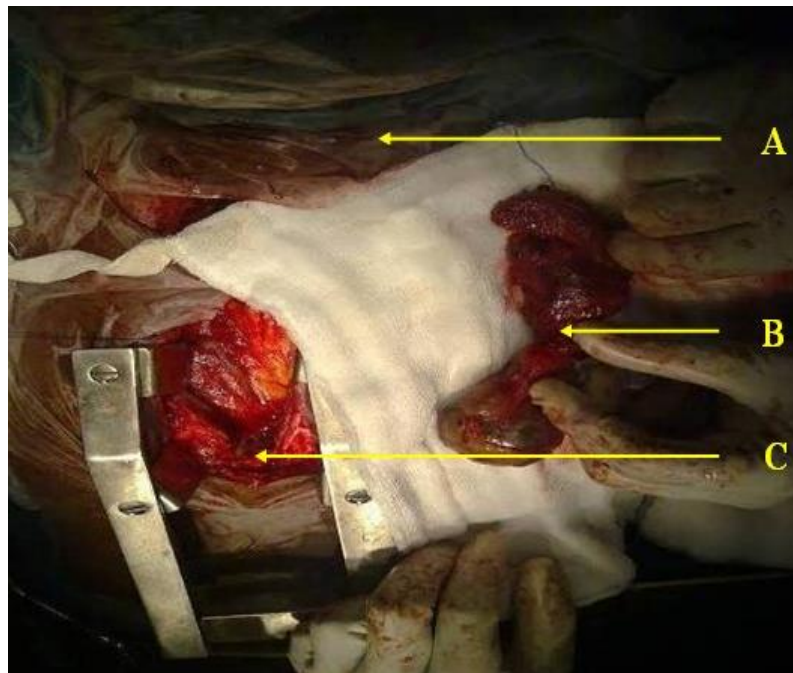


Figure 3: Excised dumbbell shaped right lobe of thyroid extending into the thorax. A. Neck incision. B. Dumbbell shaped thyroid tissue. C. Sternotomy.

DISCUSSION

In our patient he was diagnosed to have bronchial asthma for 3 years duration and treated with bronchodilators. As he came with haematuria, dysuria and urgency, on evaluation he was suspected to have a renal malignancy by ultrasound and CT scan of the abdomen. During pre operative evaluation for anaesthesia and to rule out secondaries chest x ray was done, which showed a mediastinal widening and led us to do a

CT scan of thorax. CT Thorax showed a retrosternal goitre compressing the trachea which gave us a clue for the possible etiology of his wheeze. Combined procedure of right hemithyroidectomy and right nephrectomy was done. Intraoperatively, the thyroid gland was plunging inside the thorax in the shape of dumbbell, necessitating sternotomy. Post-operative follow up revealed that the patient had no wheeze after the thyroidectomy.

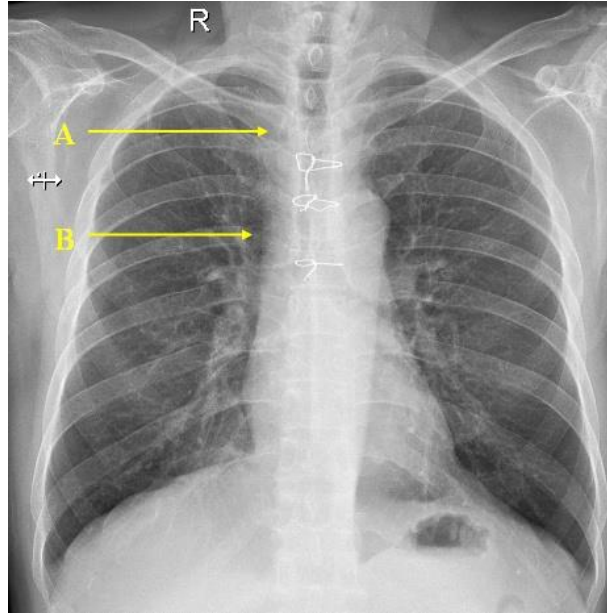


Figure 4: Post operative chest x ray showing trachea in midline (A) and normal superior mediastinum (B).

Terms such as retrosternal, substernal, intrathoracic or mediastinal have been used to describe a goitre that extends beyond the thoracic inlet. However, there is a lack of consensus regarding the exact definition of a retrosternal goitre (RSG).¹ The natural history of retrosternal goitre is of a slow relentless increase in size, often presenting as an incidental finding on a chest x-ray in the fifth or sixth decade of life.² The majority of patients with retrosternal goiter presents with shortness of breath or asthma like symptoms. Other symptoms and signs include neck mass, hoarseness of voice, dysphagia or superior vena caval obstruction. Airway obstruction due to thyroid gland has been reported up to 31%³ and difficulty in intubation has been reported in 11%⁴. The reported incidence of substernal thyroid gland in the general population varies from 0.02 to 0.5% based on chest x-ray screening reports.⁵ The CT scan is the most useful tool showing the nature and extent of the lesion.⁶ The thyroid is usually removed through a conventional thyroid incision in the neck, but occasionally division of the upper part of the sternum is necessary. Unrecognized mediastinal goitre can produce asthma-like

symptoms, which may lead to late diagnosis or misdiagnosis and deficient treatment.⁷

The cause for wheeze need not be always bronchial asthma. Late onset wheeze, persistent wheeze inspite of treatment, exertional dyspnoea, widening of superior mediastinum in chest x-ray made us to think about possible airway obstruction other than bronchial asthma for wheeze. Confirmed it to be a paratracheal, retrosternal colloid goitre.

Anaesthesiologist's careful history taking, examination and evaluation have been useful to identify a curable cause for wheeze. Due to the active multidisciplinary approach, both the surgeries were done simultaneously and safely after thorough evaluation. If we would have missed it could have resulted in unanticipated difficult airway, post extubation airway issues, persistent wheeze with poor response to bronchodilators life long.

CONCLUSION

Patients with retrosternal/substernal goiter without obvious swelling in the neck can present with airway obstruction. The late onset wheezer to be

evaluated for anatomical airway obstructions. Approach to a patient like a primary physician with meticulousness in eliciting history and evaluation, makes an anaesthesiologist a perioperative physician.

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