



Huge Retrosternal goitre -A case report

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Abstract : Retrosternal goitre is usually referred to as enlarged thyroid gland with greater than 50 percent of its mass below the thoracic inlet. It has a clinical importance because its compressive symptoms may cause diagnostic problems and the selection of surgical approach is sometimes difficult. This report presents a case of chronic dyspnoea in a male who was treated as a case of long term bronchial asthma and was then discovered to have a retrosternal goitre. The mass was resected through a combined cervical and median sternotomy approach and the patient was discharged in a good condition and without further need for asthma treatment. CT scan is at present the most exhaustive test for assessment of extension of goitre and compression effects. An attempt to remove the goitre through the cervical wound should be done using all the available techniques. When difficulty is encountered assistance of a thoracic surgeon should always be sought with least threshold.

Keyword : Retrosternal goitre, thyroidectomy, sternotomy



60 years old male patient from Madurai with history of recurrent attacks of dyspnoea diagnosed and managed as COPD for about 3 years referred for evaluation of swelling in the neck for about 20 years duration. There were no features of hypothyroidism or hyperthyroidism. Clinical examination revealed a swelling of size 20X10X 5 cms in the anterior aspect of neck which does not move with deglutition. The trachea was shifted to right and dilated veins were seen over the swelling and anterior chest wall. Pemberton's sign was positive. Dull note percussed over the sternum. All investigations including TFT were normal except chest x-ray which showed tracheal shift and upper mediastinal soft tissue widening. USG neck showed diffusely enlarged left lobe with

heteroechoic mass lesion with few areas of calcifications. CECT neck and chest showed very large mixed density lesion with heterogeneous enhancement after IV contrast, with calcification involving left lobe of thyroid, with retrosternal, retro tracheal and upper mediastinal extension, with tracheal displacement towards right side, with no evidence of vascular encasement. FNAC from cervical Goitre showed features suggestive of nodular colloid goitre. He was posted for thyroidectomy surgery. During the procedure there was difficulty in delivering the goitre through the cervical approach, hence upper midline sternotomy was performed by the thoracic surgeon through a separate midline incision and the retrosternal portion of the Goitre dissected and delivered through the cervical incision. Since the right lobe was normal, left hemi-thyroidectomy was



performed. He was extubated comfortably and Postoperative period was uneventful. HPE report showed nodular goitre with no evidence of malignancy.

Discussion

Terms such as Retrosternal, sub-sternal, intra-thoracic or mediastinal goitre have been used to describe goitre, if more than 50% of the swelling present below the level of thoracic inlet¹. First described by Albrecht von haller in 1749 and successfully resected by Klein in 1820, the incidence of Retrosternal goitre varies from 2.4% to 20.9% depending on various studies. Retrosternal goitre is more common in short neck male individuals and represent 7% of all mediastinal tumours. The incidence of malignancy in any Retrosternal goitre varies from 5-15%. Primary Retrosternal goitre (1%) which arises from ectopic thyroid tissue located in upper mediastinum does not communicate with cervical thyroid and receives its blood

supply from innominate mediastinal arteries². On the other hand, Secondary Retrosternal goitre (99%) is usually an extension of cervical thyroid into the mediastinum and receives its blood supply from superior and inferior thyroid arteries. The diagnosis of Retrosternal goitre is based upon clinical features and imaging. The clinical features are related to compression of airway and oesophagus like dyspnoea, frequent choking, inability to sleep comfortably, dysphagia and hoarseness. Less commonly, signs of compression of vascular and nerve structures are present such as SVC syndrome and/ or Horner syndrome.



The primary objective of the imaging studies are to rule out other conditions which may mimic Retrosternal goitre like thymoma, teratoma, lipoma, tuberculoma, lymphoma, metastasis, dermoid, vascular aneurysms etc. A good chest X-ray can demonstrate upper mediastinal mass, tracheal shift and/ or compression. USG using high frequency probes (7.5-16 MHz) may be useful. CT scan is at present the most exhaustive test for assessment of extension of goitre and compression effects on adjacent anatomical structures³. It also helps in assessing relevant anatomy, differentiating benign from malignant RSGs and also for guided FNAC.

MRI adds little additional information that obtained with CT and is not routinely used. Nuclear thyroid imaging using ⁹⁹Tc, ¹²³I, ¹³¹I scintigraphy can be used; ¹³¹I scintigraphy is the best option. Selective angiography should be done if vascular encasement or invasion is suspected. PFT to assess the lung status and the obstruction is useful. Routine Fibre Optic Bronchoscopy should be performed to evaluate Vocal cord status and level of tracheal compression. There is a general agreement that surgical removal is the treatment of choice, even in the absence of obstructive symptoms⁴. The reasons being ineffective suppressive therapy, risk of airway compromise and the chance of missing the diagnosis of malignancy which is reported in 3-21% of RSG operated specimens. The indications for median sternotomy in a setting of Retrosternal goitre are large invasive tumours, primary mediastinal goitres, goitre with mediastinal blood supply, prior surgery or RAI ablation or external beam irradiation and presence of carcinoma necessitating additional mediastinal resection (2-3%). Even though majority of RSG can be dissected through a cervical approach, there may be a need for sternotomy. Only around 2% of patients undergoing thyroidectomy for retrosternal goitre will require surgical access other than a standard collar incision (either manubriotomy, sternotomy or thoracotomy)⁵. If the operating surgeon finds it difficult in delivering the goitre, significant mediastinal bleeding, abnormal course of RLN, a median sternotomy may be needed.

Conclusion

On conclusion, when diagnosed and treated in the appropriate time, prognosis is excellent and the compressive symptoms completely disappear. An attempt to remove the goitre through the cervical wound should be done using all the available techniques. When difficulty is encountered assistance of a thoracic surgeon should always be sought with least threshold.

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