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Bulky Anterior Mediastinal Tumours: An Initial Experience in a Thoracic Oncology Unit.

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ABSTRACT:- Anterior mediastinum is the seat of majority of neoplastic growths arising from the thymus, fat, nerves, lymph nodes, and rarely thyroid and parathyroid. [1]They usually remain clinically silent until late when they become huge and cause compressive symptoms or present after they complicate. Intra-thoracic fibromas are mesenchymal neoplasms that are exceedingly uncommon. There has been a persistent confusion regarding the nomenclature of this tumour which has included pleural fibroma, benign mesothelioma, sub-mesothelial fibroma. benign mediastinal masses can be treated very effectively by various surgical approaches including VATS, thoracotomy or median sternotomy depending upon their location, size and surgical expertise. Postoperative outcome is usually fair as seen in our cases and recurrence is hardly evident. Malignant entities require a more sophisticated approach based on histopathology, ease of resectability and patient's factor

KEYWORDS: Mediastinum,

I. INTRODUCTION

Mediastinum is the central region of the chest divided anatomically into anterior, middle and posterior regions. Anterior mediastinum is the seat of majority of neoplastic growths arising from the thymus, fat, nerves, lymph nodes, and rarely thyroid and parathyroid. Growths of the middle mediastinum usually comprise congenital cysts and that of posterior are mainly neurogenic.[1]They usually remain clinically silent until late when they become huge and cause compressive symptoms or present after they complicate. Here we present our institutional experience of three anterior mediastinal masses which were diagnosed as solitary fibrous tumour, hamartomatous chondroma and dermoid cyst.

II. CASE 1

A 33 year old male presented with low grade episodic fever and cough for 3 months followed by breathlessness on exertion for 2 months. He had no chest pain and hemoptysis but complained heaviness in the left chest. Further he developed slow onset swelling over face. He was a non-smoker, non-alcoholic, had no concurrent medical illnesses and any history of specific drug intake. On examination he was mild anaemic with facial puffiness and pedal edema, no lymphadenopathy. Breath sounds and movements were decreased more on the left sided chest as compared to the right and dull note on percussion was elicited. Cardiac examination was insignificant. Basic work-up including haemogram, chest X- ray PA view **(Figure 1)** and contrast CT chest **(Figure 2)** was done. Based on CT findings a preoperative biopsy was done which revealed a dermoid cyst **(Figure 3).** Patient was planned for left sided exploratory thoracotomy. Well defined cystic mass was encountered in the anterior mediastinum **(Figure 3 and 4)** which was removed and sent for histopathology. Postoperative period was uneventful and patient was discharged on 4th day. Patient had no similar complains during 1 year follow up**.**

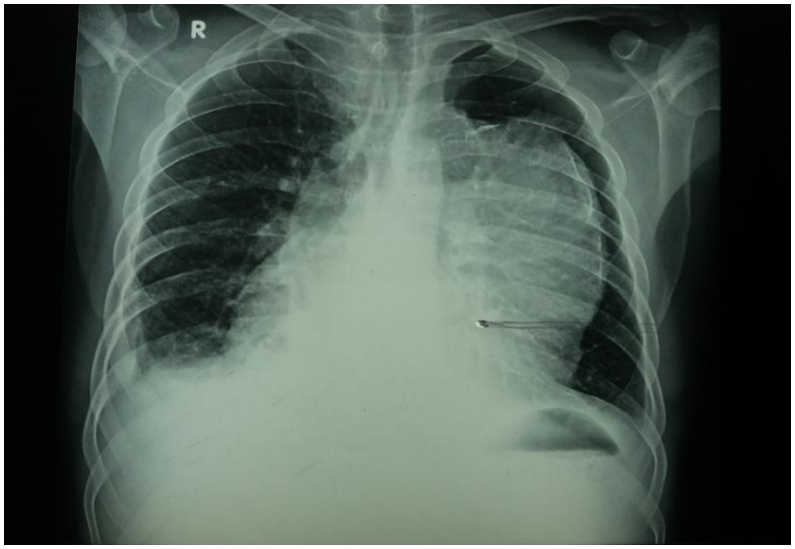


Figure 1: Chest X-Ray showing anterior thoracic mass.

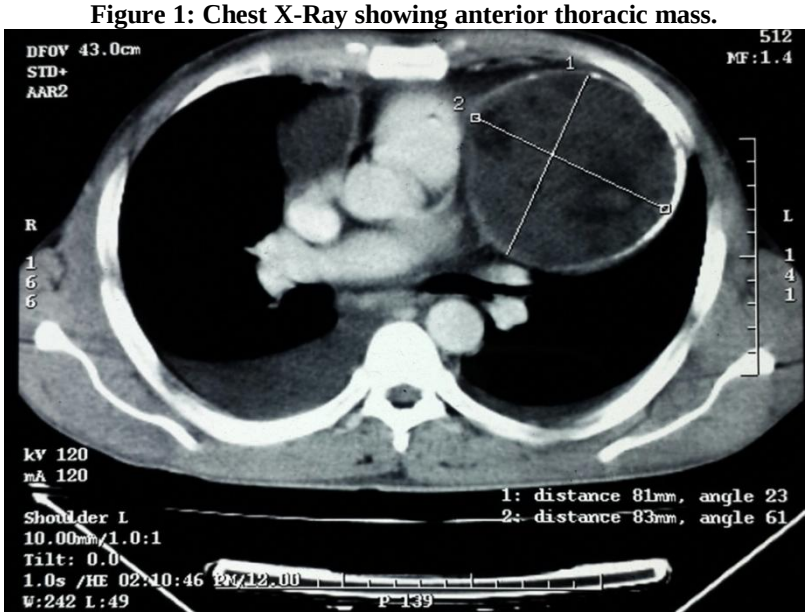


Figure 2: MDCT showing anterior thoracic mass.

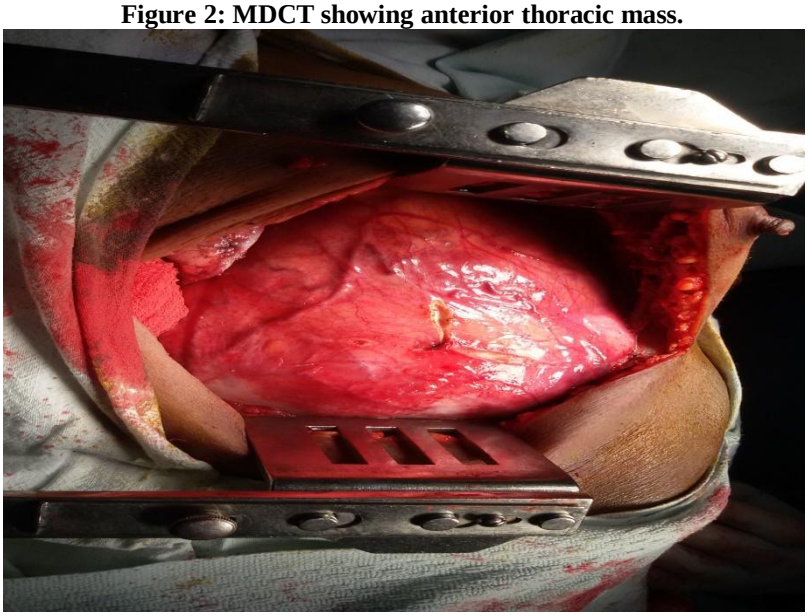


Figure 3: Anterior thoracic wall mass.

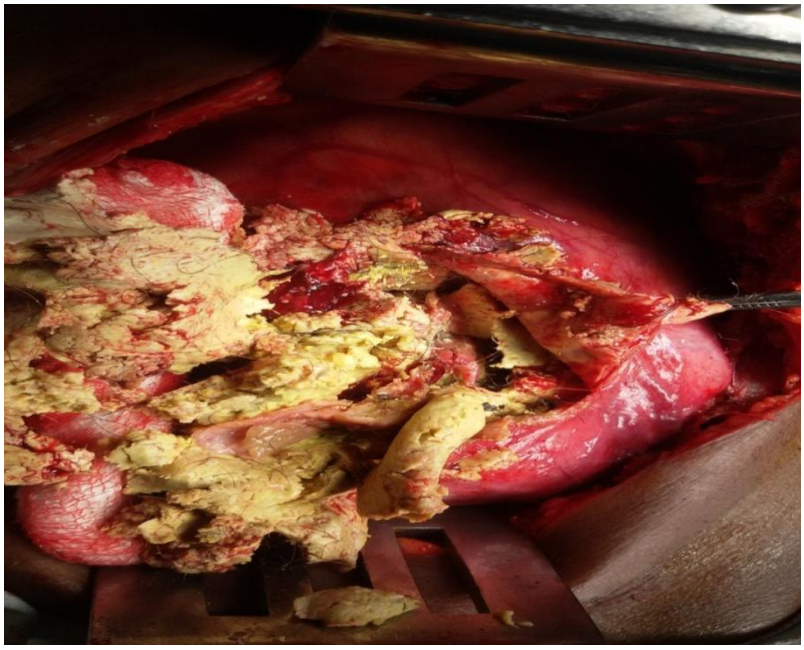


Figure 4: Anterior thoracic mediastinal mass showing necrotic tissue.

CASE 2

A 42 year male presented with chest discomfort for 5 months. No history of cough, shortness of breath, haemoptysis and fever present. He was non -alcoholic, non-smoker and did not have any history of specific drug intake. Family history was unremarkable. Examination revealed slight decreased breath sounds on left side with a dull percussion note. Vitals were stable. Chest x-ray showed a radio-opaque left sided mediastinal shadow **(Figure 5)**. Ct thorax confirmed an anterior mediastinal mass following which a preoperative biopsy was made which revealed a mediastinal solitary fibrous tumour (**Figure 6)**. Patient was planned for thoracotomy and the mass was excised and sent for histopathology which confirmed the diagnosis of an anterior mediastinal solitary fibrous tumour (**Figure 7 and 8)**. Patient was discharged successfully on 5th postoperative day and remained symptom free during his 1 year follow up.

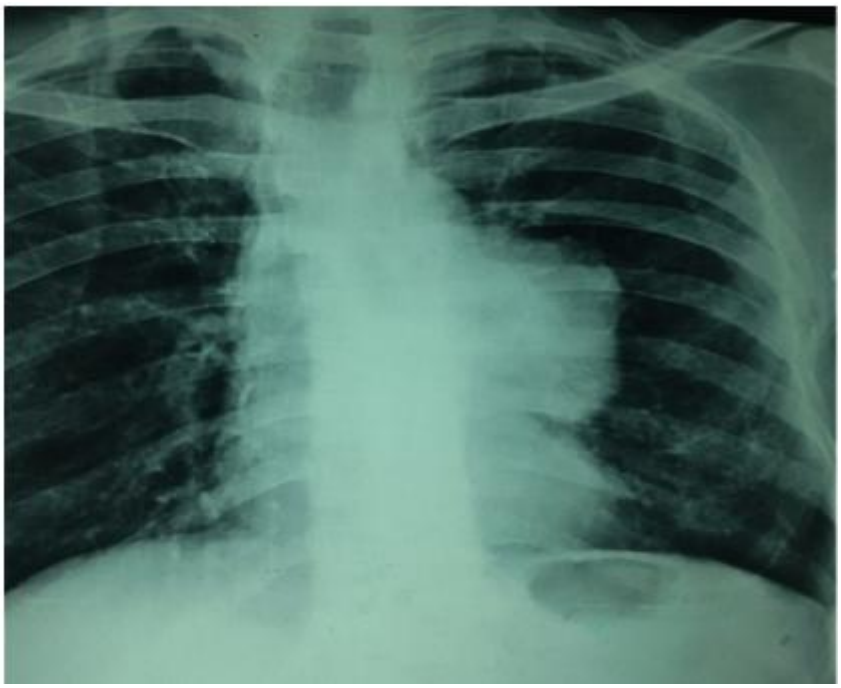
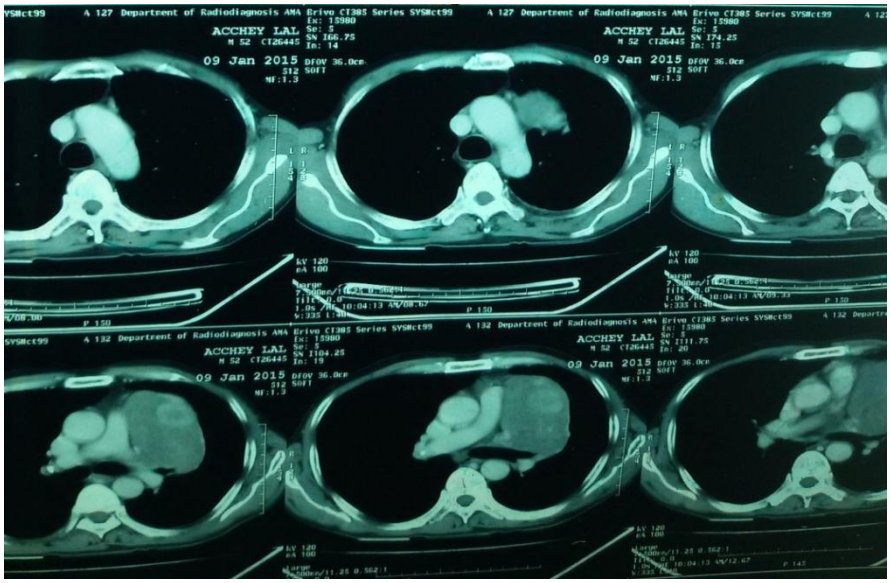


Figure 5:



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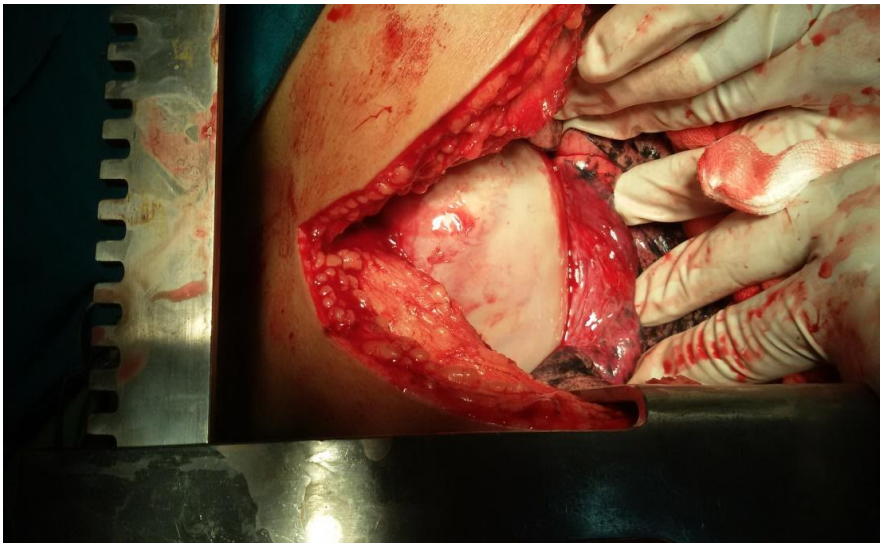

Figure 7:

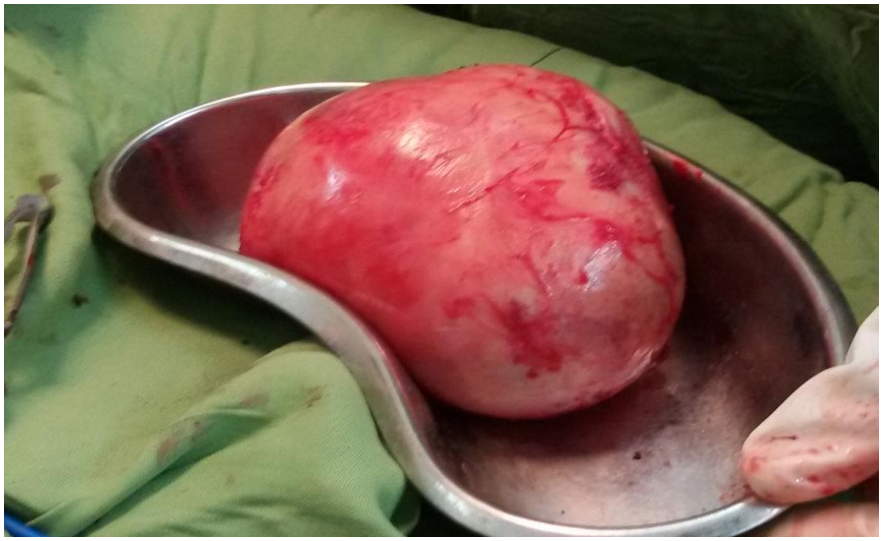

Figure 8:

CASE 3

A 28 year old male presented with shortness of breath and bulging over right anterior chest wall and supraclavicular region for 3 months. Swelling was progressively increasing in size. He had episodic dry cough but no haemoptysis, chest pain and fever. Breathlessness was aggravated on exertion and was present at rest also. There was no history of difficulty in swallowing. He was non-alcoholic and non-smoker. On examination patient was anaemic and mildly dyspnoeic. No generalised lymphadenopathy was present but there was mild facial puffiness. Breath sounds were markedly decreased on the right side and chest movement was restricted. Cardiac examination was insignificant. No signs suggestive of Horner's syndrome were there. Chest x-ray depicted a huge radiopaque well defined shadow in the right upper lung field with marked left sided tracheal deviation (**Figure 9)**. Ct guided biopsy from the swelling reported chondroma after which he was planned for thoracotomy and excision. Intra-operatively the mass was extending up-to the supraclavicular region but had maintained planes with the intra-thoracic structures. Mass was excised completely and sent for biopsy. Postoperative period was uneventful. Intercostal drain was removed on 5th day and patient was discharged and advised follow up. Histopathology revealed chondroid hamartoma. Patient's follow up has been uneventful for the past 1 year.

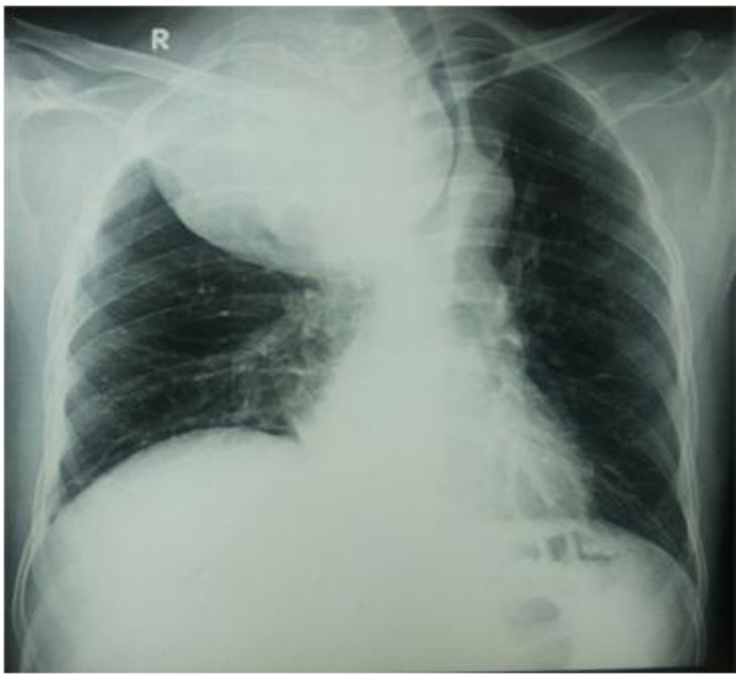

Figure 9:

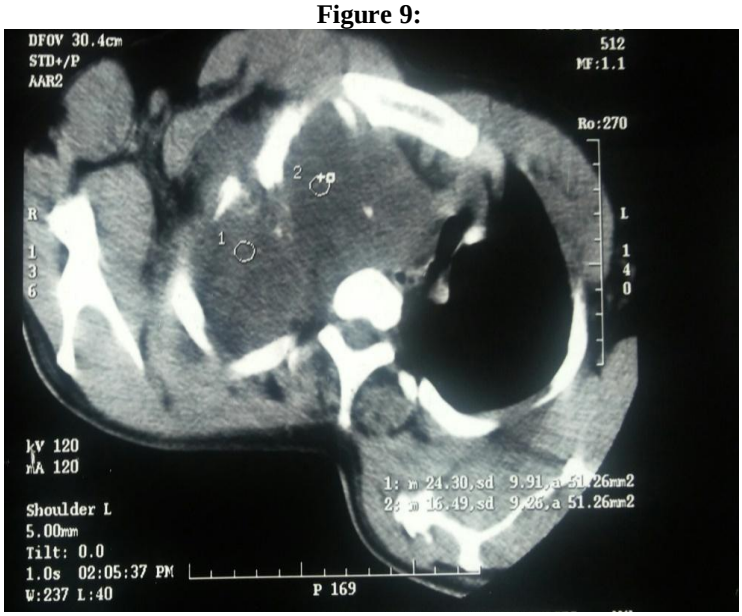

Figure 10:

III. DISCUSSION

Mediastinal masses include a wide array of diagnosis ranging from benign to malignant. Anterior masses are mainly malignant in nature but in our cases under discussion all were benign. Thymoma is the most common anterior mass followed by lymphomas.[2]Primary lymphomas comprise 10% of all mediastinal lymphomas.[2]Rest constitute goitre[3], parathyroid adenomas[4,5]and germ cell tumour etc. Benign teratoma is the most common mediastinal GCT.

Mediastinal masses usually present with non-specific symptoms and hence proper investigative work up is required to categorize them according to their location and nature. Chest x ray is the first investigation to ascertain the cause of respiratory symptoms but it is not sensitive enough to properly delineate the mediastinal pathologies when they are smaller sized. Hence, a thorax CT scan is mandatory for a detailed anatomic localization of the mass and its relation to the surrounding structures.[6] Furthermore, a preoperative biopsy is necessary to establish the nature of the disease for further management.

Anterior mediastinum is the most common extra-gonadal site for teratoma.[7]They mostly present in the younger age group of 20-40years though paediatric cases have also been reported.[8, 9] Benign/mature teratomas have well differentiated tissues of all origins whereas malignant/immature teratomas are composed of neuro-ectodermal elements. They may either present with non-specific and compressive symptoms or can be detected incidentally. Rare complications include pericardial effusion[9], lung and bronchial rupture which can lead to trichoptysis and haemoptysis.[10]Similarly, teratoma with malignant transformation has also been noticed.[11, 12] Surgical excision is the treatment of choice for mature cystic teratoma with an excellent prognosis[13] as it was with our case.

etc. but presently has been designated as solitary fibrous tumour[14]. CD 34 is the most important marker[15]. Majority arise from the pleura but can be found in liver, pancreas, kidney, orbit and mediastinum[16-20]. Surgical excision is the accepted treatment and recurrence and rapid metastasis has still been reported[21].

Hamartoma is defined as an excess of normal tissue elements in the normal place. Though chondroid hamartoma is the most common benign pulmonary neoplasm,[22] its occurrence in anterior[23] and posterior[24] mediastinum has been reported very rarely. They are mostly small in size, peripherally located, found in fifth and sixth decades of life and have a male gender predilection.[25,] M.M. Saadi et al reported a multicystic pulmonary hamartoma in a 10 year old boy presenting with pneumothorax who was successfully treated with surgical excision, which is perhaps the treatment of choice, and had uneventful follow up. [26] Histologically they comprise adipose, fibrous and chondromyxoid elements. Chromosomal studies reveal mutations in 6p21 and 12q13-15 and hence they have been classified as benign mesenchymal neoplasm. [27]

IV. CONCLUSION

We conclude benign mediastinal masses can be treated very effectively by various surgical approaches including VATS, thoracotomy or median sternotomy depending upon their location, size and surgical expertise. Postoperative outcome is usually fair as seen in our cases and recurrence is hardly evident. Malignant entities require a more sophisticated approach based on histopathology, ease of resectability and patient's factors**.**

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