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Case Report

Thymoma presenting as massive pleural effusion: An unusual presentation

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ABSTRACT

The mediastinum is an anatomical space between the lungs that houses the thymus, heart, large blood vessels, lymph nodes, nerves, and portions of the esophagus and trachea. It divides into anterior, middle, and posterior compartments. Mediastinal masses encompass a broad histopathological spectrum, ranging from benign to malignant. Fifty percent of mediastinal masses occur in the anterior compartment, the most common of which are thymoma, teratoma, thyroid goiter, and lymphoma. Thymoma is one of the causes of anterior mediastinal masses. The incidence of thymoma is quiet less. It is usually benign in nature. Malignant thymoma is very rare and pleural involvement is further rare. We are reporting a case of malignant thymoma presenting as massive pleural effusion.

1. Introduction

Incidence of thymic tumours is low i.e. 2.5-3.2/10,00,000 population.[1] It usually occurs between 40 and 60 years, with equal gender predilection.[2] Two-third to three quarter cases are benign in nature and do not show gross or microscopic invasion of surrounding structures. Thymoma usually presents as an anterior mediastinal mass. Pleural involvement is a very rare manifestation of thymoma. We are reporting a case of massive pleural effusion who was later diagnosed as a case of thymoma. Only few cases have been reported regarding the unusual presentation of thymoma as pleural effusion.

2. Case Report

A 55-year-old male, smoker, came to the hospital with the complaints of dry cough and shortness of breath for 1 month. It was associated with loss of appetite and weight loss for 1 month. There was no history of fever, joint pain, rash and any other systemic complaints. There was no history of anti-tubercular treatment in the past. There was no history suggestive of myasthenia gravis and hypogammaglobulinemia. There was history of pleural fluid tapping from outside (haemorrhagic, exudative, with the presence of atypical cells).

With complain of difficulty in breathing, he presented to our institute. He had oxygen saturation 92% at room air, pulse rate 120/min, blood pressure 110/70mm Hg and respiratory rate 24/min. Respiratory System examination revealed chest movements decreased on right side, dull note on right side and air entry decreased on right side. Chest X- ray (Figure 1) done at presentation, was suggestive of massive pleural effusion on the right side.

Fiberoptic bronchoscopy was done, and bronchial wash was suggestive of atypical cells. Trans bronchial lung biopsy showed fragmented bronchial mucosa with alveoli without atypical cells. Thoracoscopy was done. On thoracoscopy, haemorrhagic pleural fluid was present on right side without nodules and minimal adhesions were present.

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Pleural biopsy was done by video thoracoscopy. Pleural biopsy was suggestive of fibro collagenous tissue with hyalinization and chronic inflammation. Inflammatory cells, some histiocytes with prominent nucleoli were also seen. Immunohistochemistry showed that Pan CK, vimentin, CK7, CK5/6, p63, calretinin were negative.

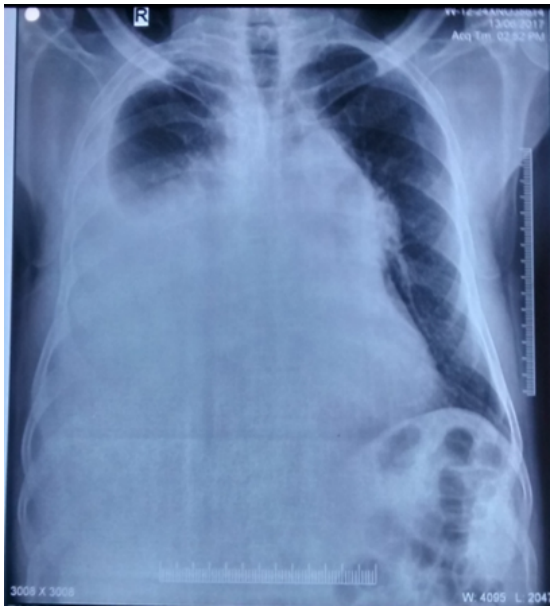

Fig. 1: Chest x-ray suggestive of right sided pleural effusion.

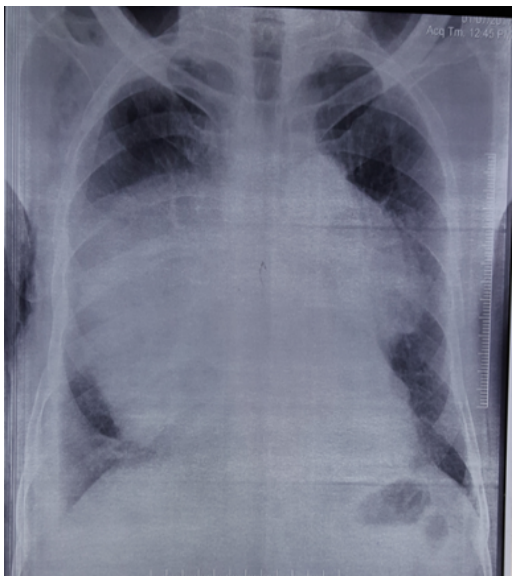

Fig. 2: Chest x-ray suggestive of mediastinal mass with minimal pleural effusion.

Haemorrhagic pleural fluid was drained**.** Patient's symptoms improved**.** Radiologically effusion decreased. Figure 2 showed the Chest X-ray after the thoracoscopy, suggestive of mediastinal mass with right sided effusion. CECT Chest (Figure 3) was done. It showed large fairly well marginated heterogeneously enhancing anterior mediastinum mass in the retrosternal/prevascular region without vascular invasion. Mild right pleural effusion and pericardial effusion were also seen without any evidence of pericardial thickening or nodularity.

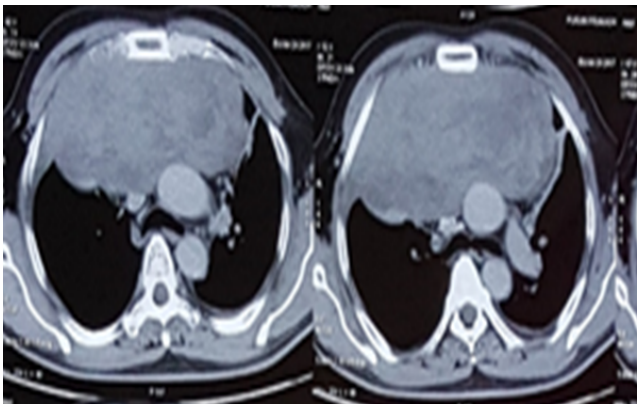

Fig. 3: CECT Chest suggestive of large fairly well marginated heterogeneously enhancing anterior mediastinum mass in the retrosternal/prevascular region without vascular invasion

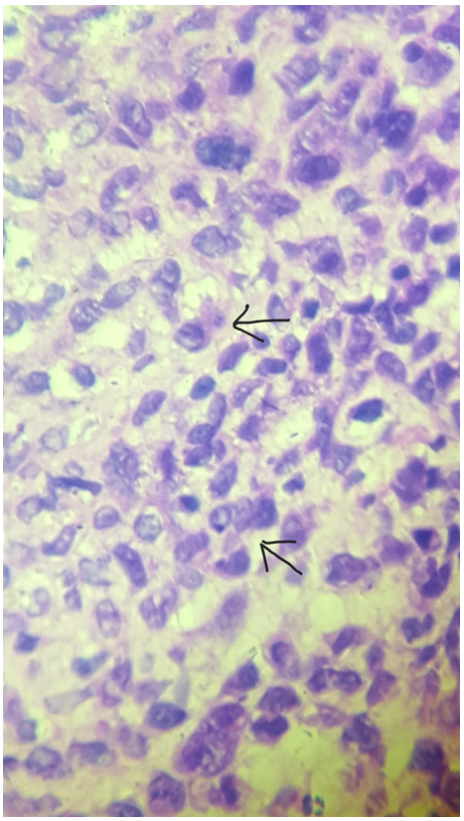

Fig. 4: Tru cut biopsy of the mass showing tumour cells with round to oval shape with hyperchromatic nuclei (arrows marked)

Table 1: Review of literature of cases of thymoma presenting as pleural effusion

	Takehiko Okagawa et al.[3]	John E. Cho et al.[4]	Anirban Das et al.[5]	Kenta Furuya et al.[6]	Our Case
Age	31 years	37 years	53 years	30 years	55 years
Sex	Female	Female	Male	Male	Male
Presenting complaint	Chest pain	Dyspnoea, left sided chest pain	Dyspnoea, fever, swelling of face and neck	Fever, right sided chest pain	Dry cough, dyspnoea
History of ATT in the past	Nil	Nil	Yes	Nil	Nil
Pleural effusion	Left side	Left side	Right side	Right side	Right side
Chest X-Ray findings	Anterior mediastinal mass with left sided pleural effusion	Complete opaque hemithorax with contralateral mediastinal shift	Right sided pleural effusion with right paratracheal lesion	Right sided pleural effusion with mass shadow in right hilum	Right sided massive pleural effusion with mediastinal shift
CECT findings	Anterior mediastinal mass with left sided pleural effusion	Mediastinal and pleural-based mass with calcification and a loculated pleural effusion	Anterior mediastinal mass with right pleural effusion	Anterior mediastinal mass with right pleural effusion	Anterior mediastinal mass with right pleural effusion and pericardial effusion
Myasthenia gravis	Absent	Absent	Absent	Absent	Absent
Unusual feature	Spontaneous regression and disappearance of pleural effusion	Pleural based mass with mediastinal mass	Superior vena caval syndrome	Spontaneous regression of tumour and pleural effusion	Massive pleural and pericardial effusion

Fine needle aspiration and tru cut biopsy of the anterior mediastinal mass were done under ultrasound guidance. Fine Needle Aspiration Cytology showed haemorrhagic background with clusters of atypical cells, nuclear atypia and anisonucleosis. Tru Cut Biopsy (Figure 4) showed tumour cells made up of loose sheets of round to oval cells with hyperchromatic nuclei and pale eosinophilic cytoplasm. Focal spindle cells were present with pale cytoplasm. Mitosis were up to 3/10HPF. Findings were suggestive of thymoma. Patient was referred to the oncologist for further management and he was reported to have died after 1 month.

3. Discussion

Thymoma usually presents as anterior mediastinal mass. Pleural involvement is a rare presentation of thymoma. Table 1 shows the review of literature of 5 case reports of thymoma presenting as pleural effusion including the present case. We are presenting another case report from India regarding such presentation of thymoma. Anirban Das et al[5] reported the first case of thymoma presenting as pleural effusion

We reviewed the literature and found 4 cases of thymoma associated with pleural effusion. Out of 4 cases reported so far, none have presented as massive pleural effusion. As shown in Table 1, in all case reports including our case pure red cell aplasia, hypogammaglobulinemia and myasthenia gravis were absent. In two cases,[3,6] spontaneous regression of pleural effusion was reported. In one case, spontaneous regression of tumour was also reported.[6] One possible cause of the spontaneous regression may be increased internal pressure, probably associated with rapid tumor growth, leading to massive necrosis with resulting chest pain, inflammatory reaction with pleural effusion and subsequent tumor regression. The serum CYFRA level may be a useful marker for the evaluation of the clinical course of thymoma with extensive necrosis.[6] Pleural thymoma is another entity that can mimic our case.[7]

Malignant thymoma carries poor prognosis and surgical resection remains the mainstay of treatment.[8] In our case, patient of thymoma presented with massive pleural effusion. This case highlights that rarely thymoma can present as massive pleural effusion.

4. Conflicts of Interests

None declared.

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