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RUPTURED MEDIASTINAL TERATOMA CAUSING PERICARDIAL EFFUSION: A RARE CASE REPORT WITH RADIOLOGICAL REVIEW

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ABSTRACT
Germ cell tumors commonly occur in gonads but can also occur in extragonadal locations. Extragonadal germ cell tumours can occur anywhere in body along the midline. The commonest location for extragonadal germ cell tumors is anterior mediastinum. We present a case of 35 year old patient with complaints of shortness of breath and chest pain whose CECT thorax was done which was suggestive of germ cell tumours (Teratomas) with rupture into pericardial cavity causing subsequent pericardial effusion.

KEYWORDS: Extragonadal germ cell tumour, teratoma, anterior mediastinal mass, ruptured teratoma, pericardial effusion.

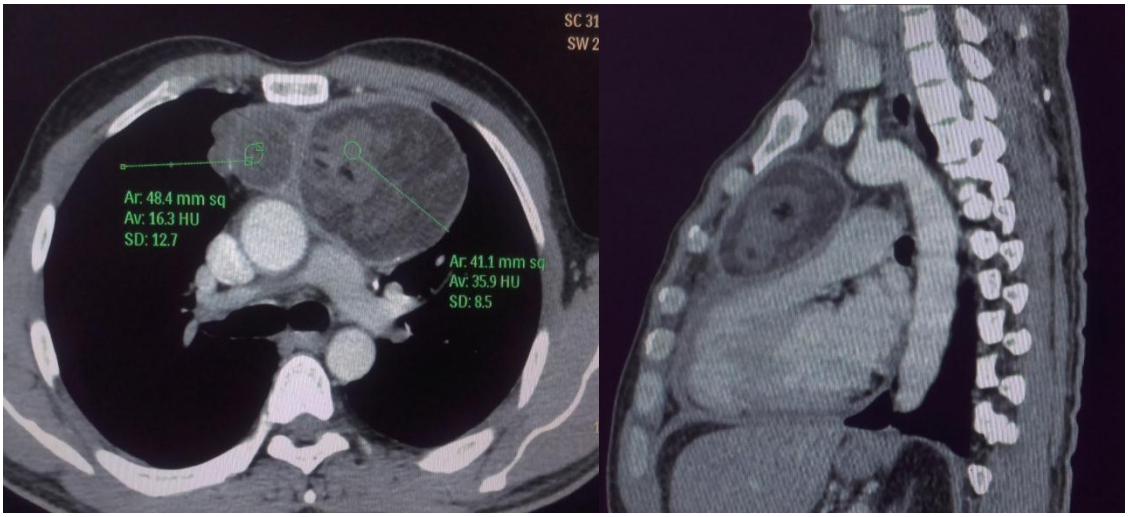
INTRODUCTION

Germ cell tumors commonly occur in gonads but can also occur in extragonadal locations. Extragonadal germ cell tumours can occur anywhere in body along the midline like in head and neck, pineal gland, mediastinum, retroperitoneum, spine, sacrococcygeal region.[1] Out of all these, most common locations include mediastinum, retroperitoneum and brain.[2] The sites which are less commonly involved are urinary bladder, prostate, paratesticular adnexa, vulva, placenta, pelvis, uterus, kidney, nasal sinuses.[3] The incidence of extragonadal germ cell tumours is 1.8 to 3.4/million population with males more affected than females.[2] In adults approximately 16% of mediastinal masses are germ cell tumors and in age less than 18 year they constitute 19-25% of all mediastinal neoplasms.[4]

CASE

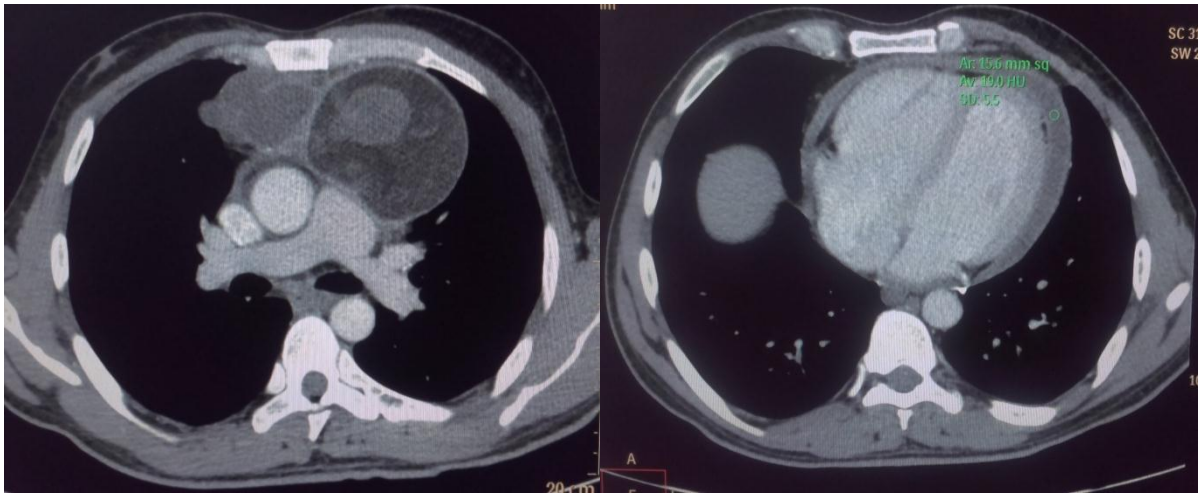
35 year old male with complaints of shortness of breath and chest pain for past 3 weeks came for medical check up. After clinical examination he was referred to radiology department for chest x ray. Chest X ray was done which showed a well defined soft tissue opacity in the region of aortic knob causing widening of superior mediastinum. Medial margin of opacity couldn't be defined. Hilum overlay and silhouette sign were negative. Lung fields were clear. Bony thorax appeared normal. Due to these findings of chest x ray he was advised CECT thorax. CECT Thorax was done which showed two well defined rounded lesions in the anterior mediastinum with heterogeneously attenuating internal contents, septa and enhancing soft tissue areas in a background of predominantly fat density in larger lesion and homogenously hypodense contents with foci of fat density in smaller lesion. Calcification foci were also seen in these lesions. The larger lesion was causing mass effect in form of compression of MPA. On contrast enhanced sections there was presence of enhancing walls of both the lesions with a defect of size 8 mm in the wall of the smaller lesion with leakage of internal contents in the surrounding area along with pericardial effusion. Based on these findings, diagnosis of germ cell tumours (Teratomas) with rupture into pericardial cavity causing subsequent pericardial effusion was made.

Figure1: Chest X ray PA view showing a well defined soft tissue opacity seen in the region of aortic knob causing widening of superior mediastinum. Medial margin of opacity couldn't be defined. Hilum overlay and silhouette sign are negative. Lung fields are clear. Bony thorax appears normal.



(a) **(b)**

Figure 2. CECT Thorax axial section(a) showing two well defined rounded lesions in the anterior mediastinum with heterogeneously attenuating internal contents which include septa and enhancing soft tissue areas in a background of predominantly fat density in larger lesion and homogenously hypodense contents with foci of fat density in smaller lesion. CECT Thorax sagittal section(b) showing craniocaudal extent of the anterior mediastinal mass and its mass effect on surrounding structures.



(a) **(b)**

Figure 3: CECT Thorax Axial section (a) showing defect of 8 mm in the wall of the smaller lesion with leakage of internal contents in the surrounding area. CECT Thorax Axial section (b) showing pericardial effusion.

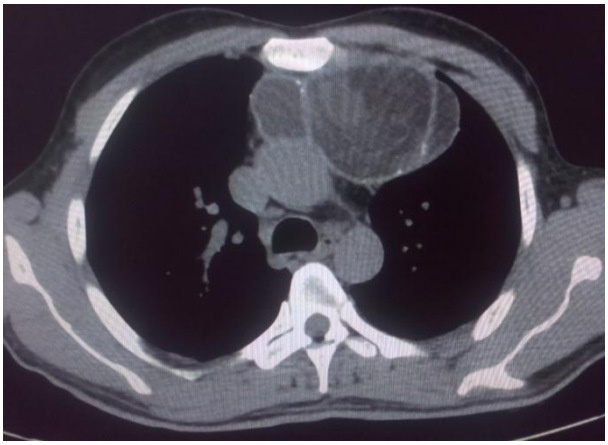


Figure 4: Non contrast CT Thorax axial section showing calcification foci in the wall of the large and small anterior mediastinal masses.

DISCUSSION

During embryogenesis, when the multipotent primitive germ cells migrate from yolk endoderm to gonads, they get misplaced along midline structures and act as precursor for the germ cell tumors at extragonadal locations.[5] Extragonadal germ cell tumours are divided into seminomatous and non seminomatous. Non seminomatous are further divided into embryonal cell carcinoma, choriocarcinoma, teratoma, yolk sac tumour. The commonest location for extragonadal germ cell tumors is anterior mediastinum.[6,7] Mature teratoma is most common type of mediastinal germ cell tumor.[8] Mostly the patients with mature teratoma are young adults. Mature cystic teratomas are slow growing tumors and the patients are usually asymptomatic, symptoms usually occur when they enlarge and cause compression of adjacent structures leading to symptoms like cough, dyspnoea, chest pain. There are rare cases where these tumors rupture into pleural space, lung, pericardium leading to pleural effusion, pneumonia, pericardial effusion.[7,9]

CONCLUSION

Radiology plays an important role in diagnosis of these mass lesions. Computed tomography and MRI helps in accurate assessment of various characteristics of the mass lesion as size, shape, location, extent, internal components(fat, fluid, soft tissue ,calcification), integrity of wall. Computed tomography also help in determining the mass effect on surrounding mediastinal structures, rupture of lesion into the lung, pericardium, pleural cavity, tracheobronchial tree. In comparison to CT, MRI is best for assessing the infiltration into adjacent structures.

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