ANTERIOR MEDIASTINUM MASS

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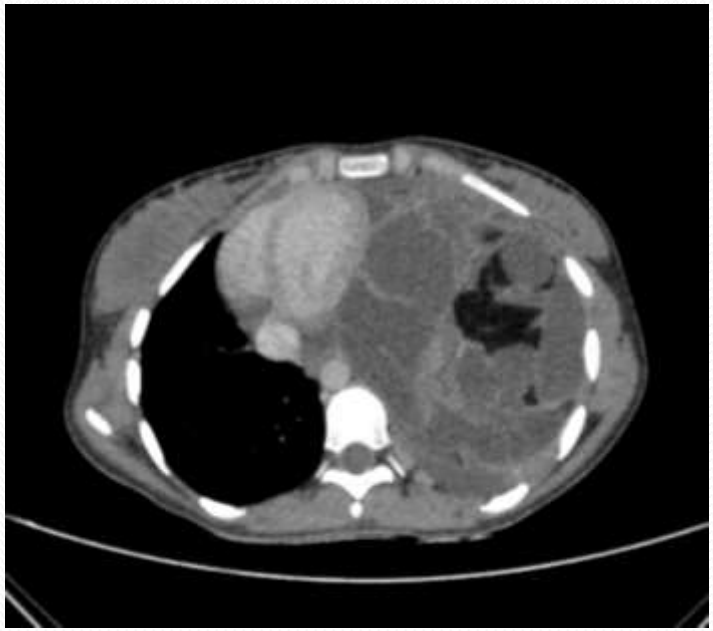
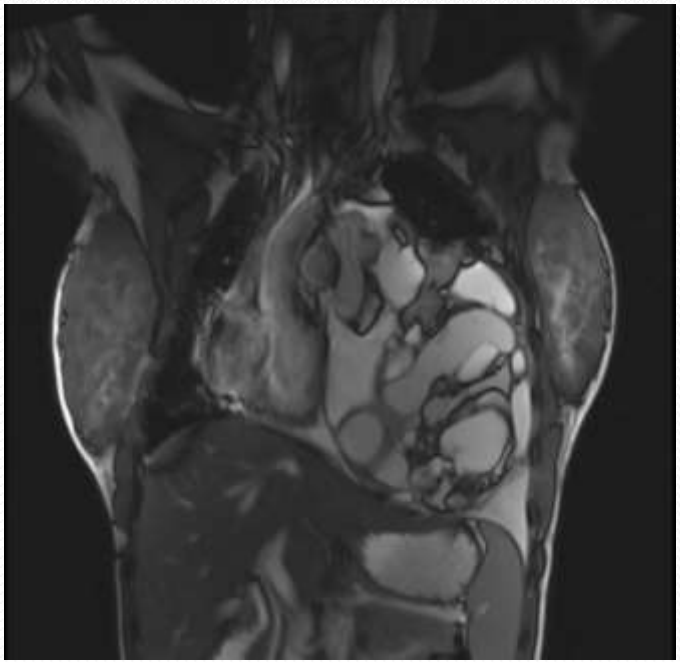
CASE CAPSULE

- 19 year-old female presented to OPD with chest pain radiating to back since 8months and dyspnea on exertion since 1month.
- Chest X-ray showed a mediastinal mass and collapse of the left lung
- CECT thorax showed a mass lesion of approximate size 118 x 124 x 149 mm in the left paracardiac region, also extending in prevascular region.
- Serum AFB and beta HCG were normal

CHEST X RAY- Showing Mediastinal mass with collapse of the left lung



CECT SCAN THORAX- Mass Lesion in the left paracardiac region



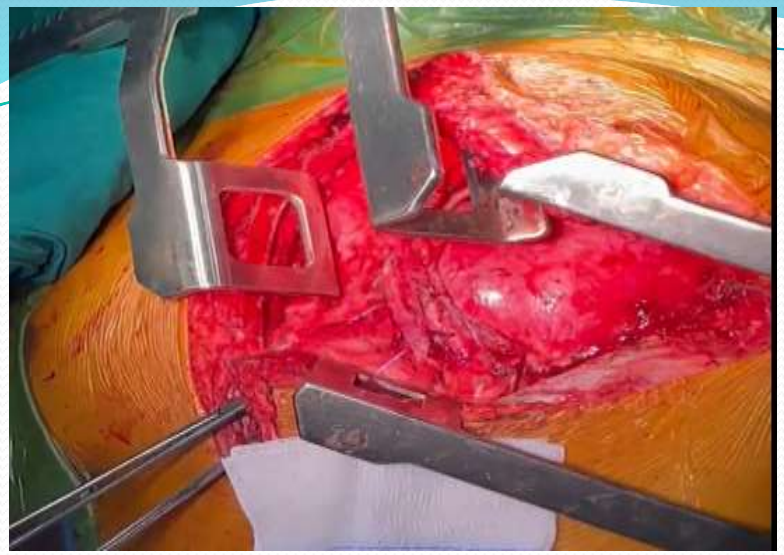
CECT SCAN THORAX- Mass Lesion extending in prevascular region

Surgery

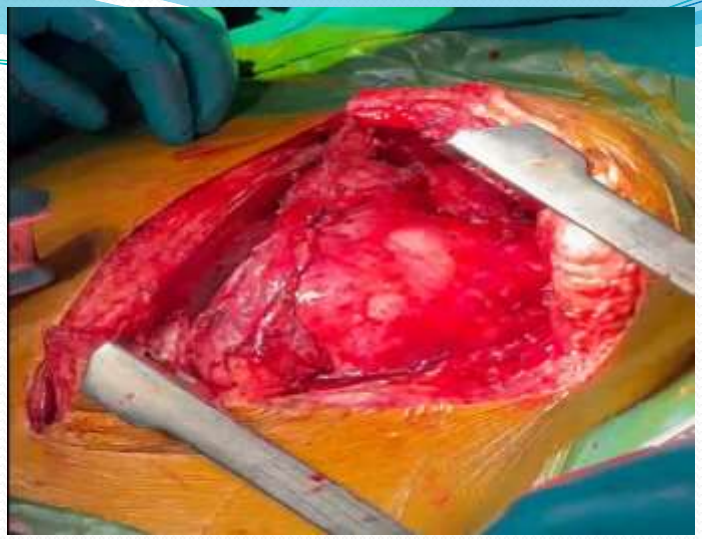
- Sternotomy with left anterolateral thoracotomy was done.
- A large mass 12cmx 14cm present in the left hemithorax, anterior to hilum of left lung.
- Anteriorly, adherent to the chest wall, medially involving the pericardium.
- Blunt and sharp dissection was done all around the mass.

- It was found adherent to the left lower lobe.

  -Wedge resection of part of left lower lobe done.
- Defect in the pericardium was closed with Bovine mesh 8x8cm.
- Mass en bloc resected without injuring any vital structures.
- Apical and basal ICD tubes placed.



Sternotomy With Left Anterolateral Thoracotomy



A large mass 12cmx 14cm present in the left hemithorax

Defect In the Pericardium was closed with Bovine Mesh 8x8cm

Resected mass showing bosselated externally and capsule noted intact

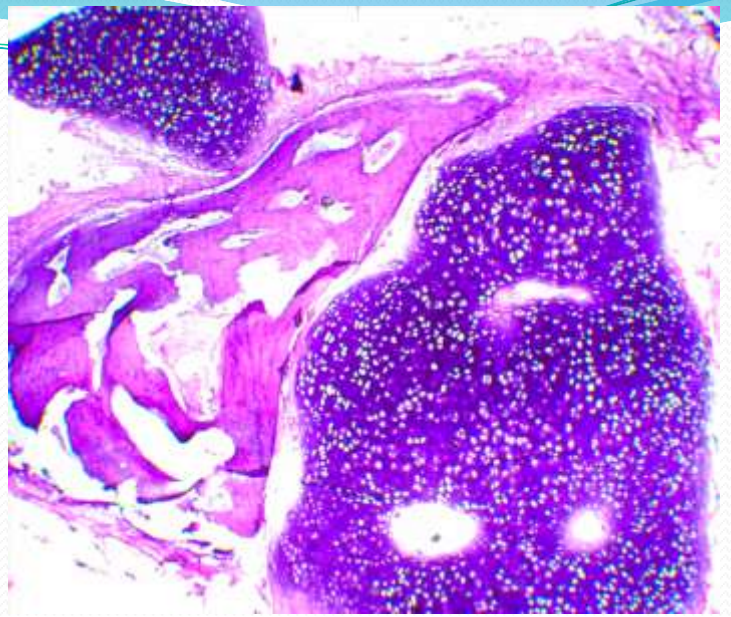
HPE

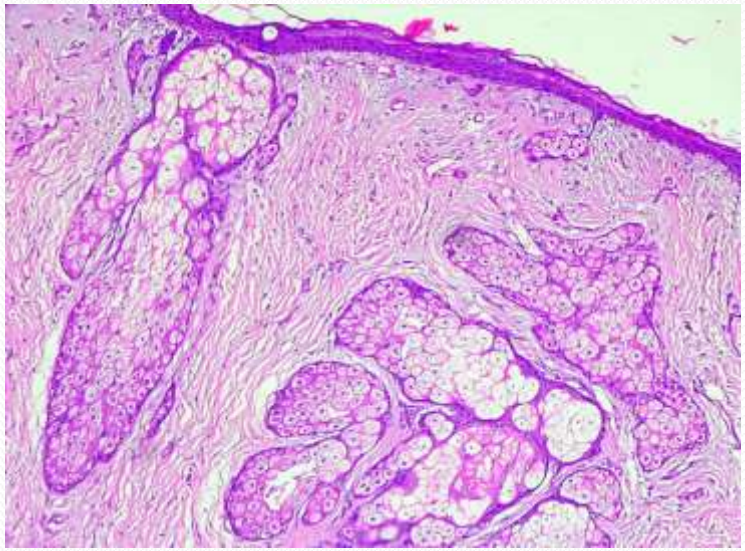
- On Gross examination specimen was measuring 19 x 16 x 9.5 cm and weighing 1.7 kg.
- External surface was bosselated and capsule was intact.
- Cut surface noted multiloculated cystic and solid areas noted ranging from 1.0 to 4.0 cm.
- Cavity contained hair tufts at few places and few calcified areas

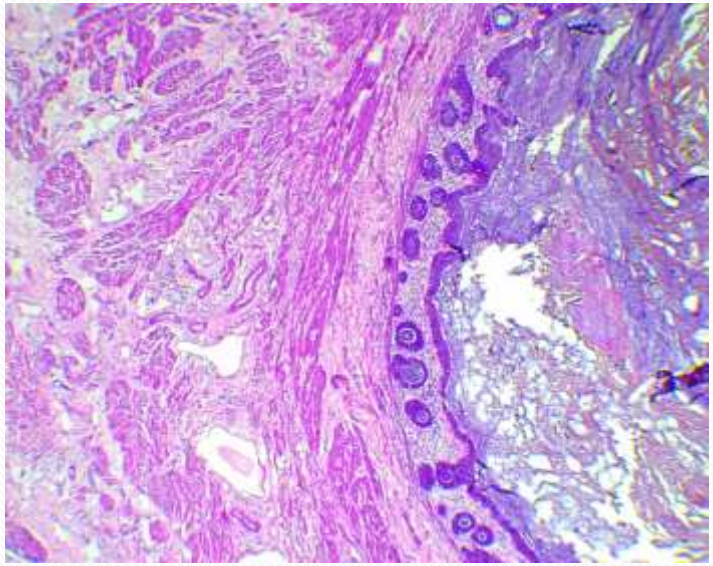
- Tumor composed of mixture of mature benign tissues of all 3 germ lines.
- Ectodermal component mainly squamous epithelium, adnexal structures and few hair follicles and brain tissue were noted.
- Mesodermal component namely cartilage, fibroadipose tissue, smooth muscles and scanty bony element were present.

- Endodermal component included mainly respiratory epithelium, intestinal epithelium.
- All components were mature. There was no evidence of any malignancy.
- Features were Consistent with **Mature teratoma of mediastinum.**

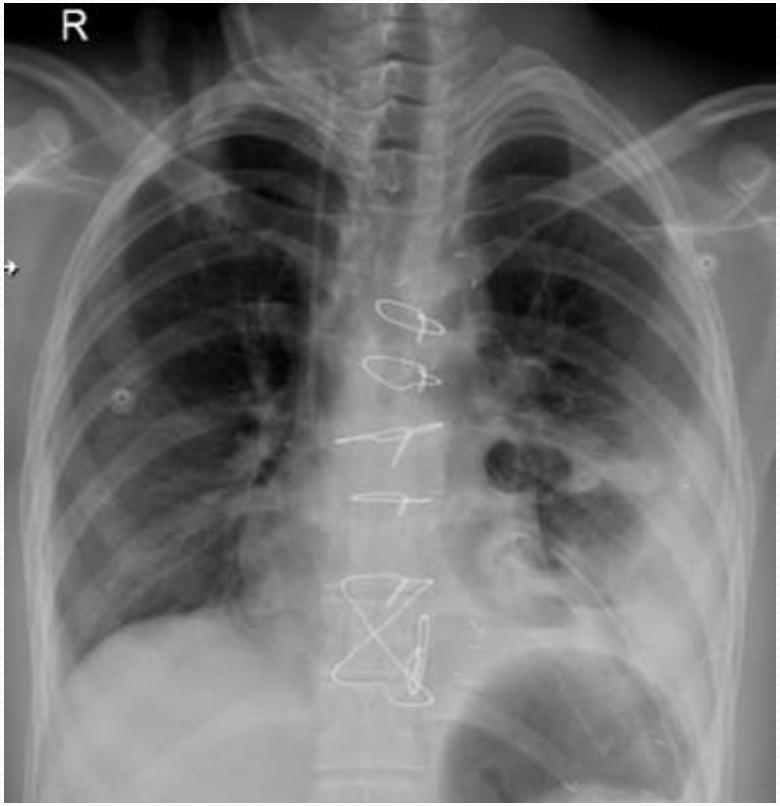
Cut surface noted multiloculated cystic areas with solid areas







- Post operative period un eventful without any complications.



Post Operative Chest Xray

DISCUSSION

- Mediastinal germ cell derived from primitive germ cells , that fail to migrate completely during early embronic development rest in the mediastinum form the Germ cell tumours in the mediastinum.
- Teratomas consist of components of all the three layers ectoderm, mesoderm and endoderm.
- Mature and Immature teratomas.
- Mature are commonly benign still can become malignant hence, long term follow up is adviced even after complete resection.

- Malignant transformation (MT) is an uncommon complication of a mature cystic teratoma. It occurs in approximately 1-3% of all MCT cases, although in one report the frequency was as high as 6.67% .

Ulker V, Numanoglu C, Akbayir O, et al. Malignant transformation arising from mature cystic teratoma of the ovary: A report of six cases. J Obstet Gynaecol Res 2012; 38: 849-853. 4.

- 15% of anterior mediastinal cancers in adults and 24 % in children are of germ cell origin
- 1%–3% of all germ cell malignancies
- 25–35 years is the mean age at diagnosis.
- Extra gonadal Germ cell tumours(GCTs) are rare, commonly found in the anterior mediastinum.

- Teratomas may present with acute respiratory distress, facial swelling, chest pain, hypoxia.

- 50% of mediastinal masses are found in anterosuperior mediastinum.

- Lymphomas and teratomas are the most commonly occurring anterior mediastinum neoplasms in < 10 years.

- The mean age of occurrence is 25-35 years, grow slowly.
- Initially, patients are asymptomatic for a long period which allows tumor to grow such large that it covers the entire thorax.
- While growing the tumor also develops adhesions with the surrounding structures, infiltrate or compress.

- Delayed presentation may result in complications like mediastinal teratoma rupture- lung, bronchial tree, pleural /pericardial space and to great vessels.

- Mediastinitis and technical difficulties due to adhesions and infiltration with the surrounding structures.

- For resecting huge mediastinal tumors - a median sternotomy with anterior lateral thoracotomy (lateral sternal split on the side of tumor).

CONCLUSION

- VATS approach is preferred approach.
- In case of huge tumor with adhesions and infiltration to surrounding structures median sternotomy with wide exposure (anterolateral thoracotomy) is preferred.
- Multi disciplinary team management and timely intraoperative decision making with the help of experienced team members will help in tackling difficult case scenarios.

THANK YOU