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KARNATAKA RADIOLOGY EDUCATION PROGRAM

RADIOLOGICAL APPROACH TO A CASE OF INVASIVE ANTERIOR MEDIASTENAL MASS

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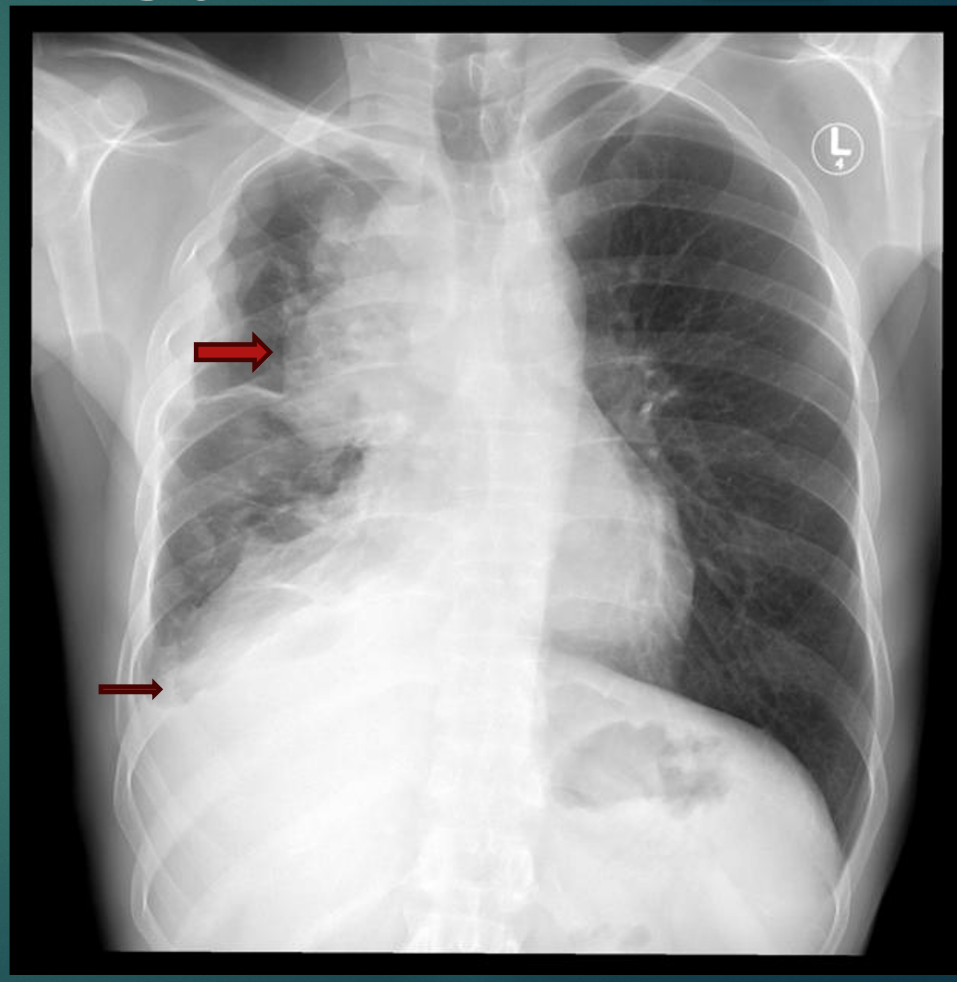
CLINICAL DETAILS

76 y non smoker male C/O Breathlessness and cough

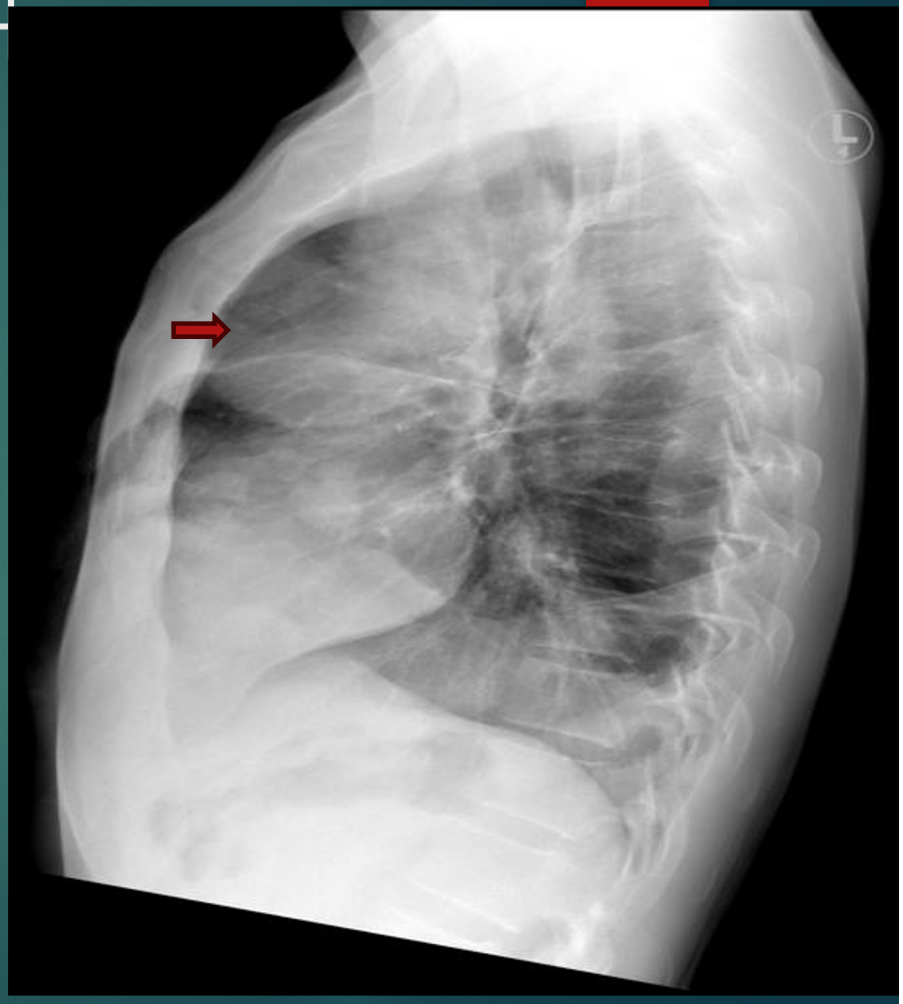
CHEST X RAY PA VIEW FINDINGS

- Well defined broad based non-homogeneous opacity in right upper zone, making obtuse angle with smooth contour and sharp interface with adjacent lung parenchyma ,silhouetting right heart border
- Hilar vessels are noted coursing through the mass…. mass is either in anterior or posterior mediastinum
- No clear margins of the mass visible above clavicles …. Likely anterior mediastinal mass
- Right sided pleural effusion.
- Partial right lung collapse with compensatory hyperinflated left lung.



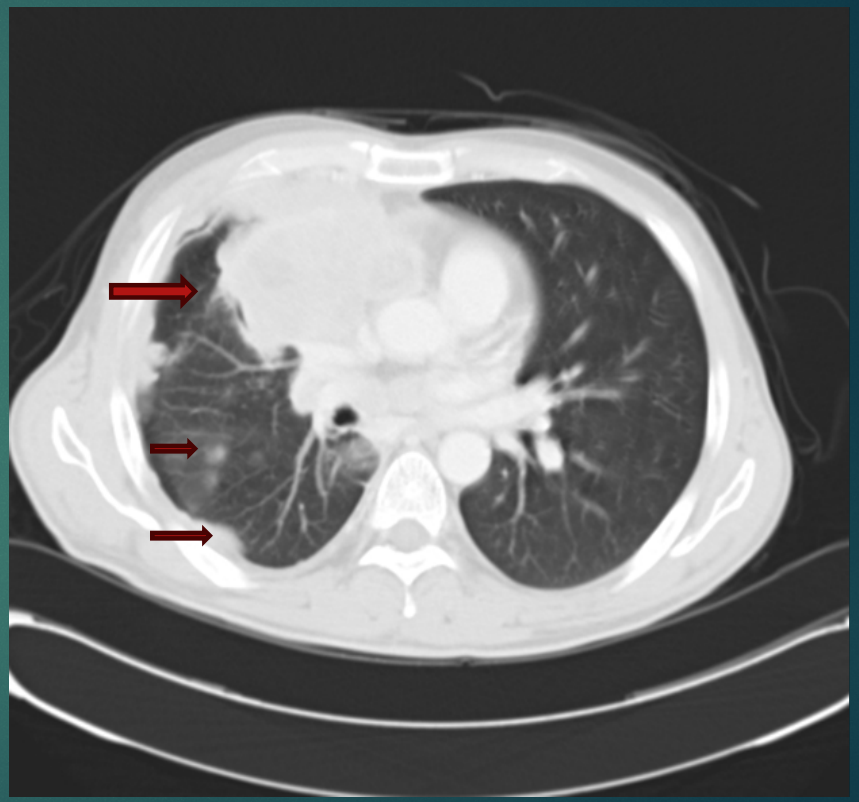
LATERAL CHEST RADIOGRAPH

Confirming the location of mediastinal mass (retrosternal area)- anterior mediastinal mass



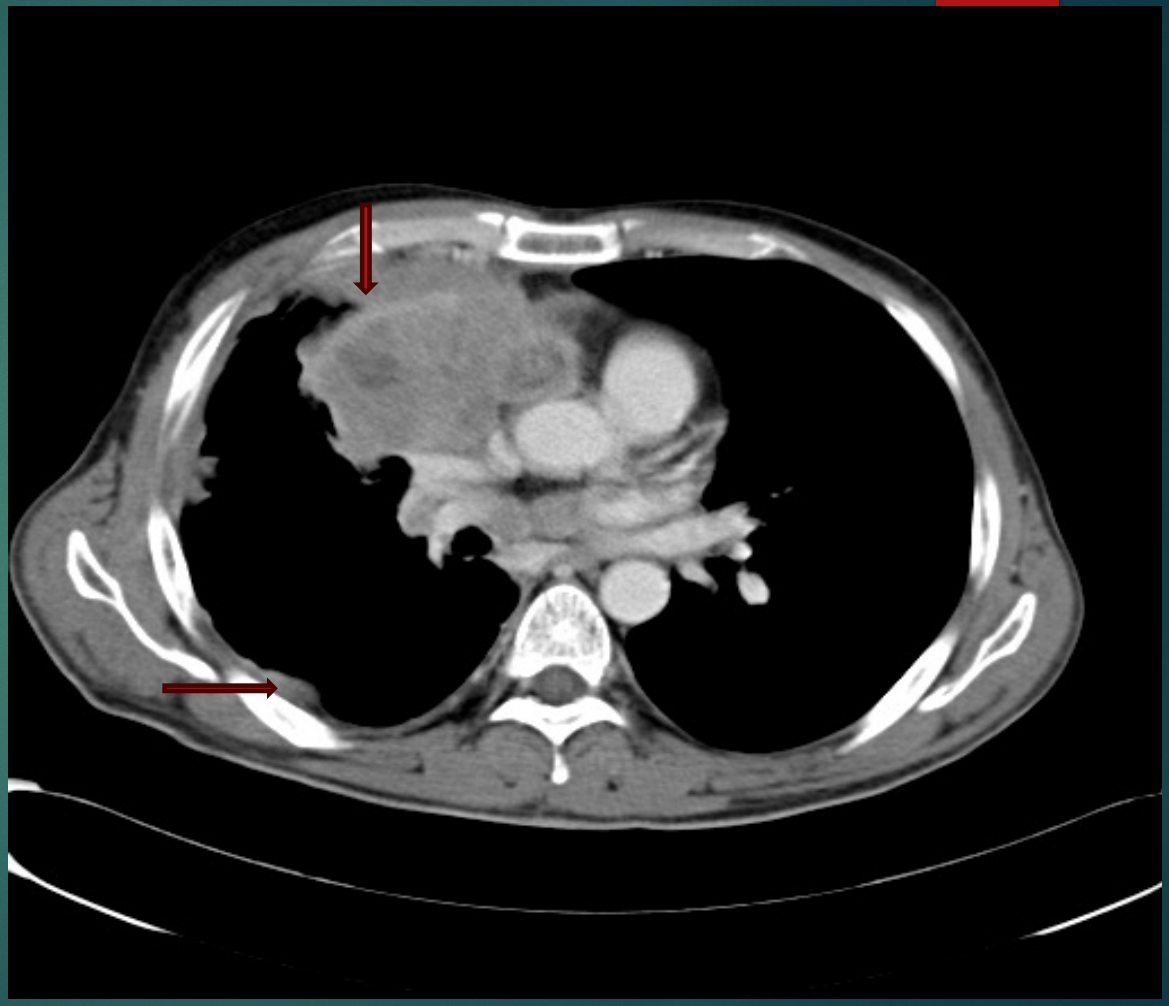
HRCT THORAX FINDINGS

- Bulky large heterogenous anterior mediastinal mass with necrotic foci noted.
- Multiple right-sided pulmonary nodules consistent with metastases.
- Compensatory hyperinflation of the left lung.



CT THORAX

- Bulky large anterior mediastinal mass with necrotic foci.
- Malignant nodular pleural thickening in the right hemithorax also involving the pericardium, with a small pericardial effusion.



CONCLUSION

- Invasive mediastinal mass with direct involvement of the pleura, pericardium, and multiple pulmonary metastases. No distant metastases of the contralateral lung
- LIKELY-INVASIVE THYMOMA WITH PLEURAL AND PERICARDIAL INVOLVEMENT

DISCUSSION

- FEATURES OF ANTERIOR MEDIASTENAL MASSES (ON CHEST XRAY)
- Obliterated cardio phrenic angles
- Hillum overlay sign
- Effacement /dense descending aorta
- Obliterated retrosternal clear space
- Displaced anterior junctional line
- The WHO classification scheme correlates with the likelihood of invasiveness, a factor that has an important influence on treatment and prognosis. Types A and AB are usually encapsulated, type B (especially B3) has a greater likelihood of invasiveness, and type C is almost always invasive. Although CT and MRI findings are often of limited value in differentiating histologic subtypes of thymic epithelial neoplasms, certain findings have predictive value

Imaging algorithm to anterior mediastinal mass

1. Hyperdense and enhancing lesion with connection to thyroid → Goiter
2. Heterogeneous with fat, fluid, soft tissue, & calcification → Benign teratoma
3. Well-circumscribed, round/oval/saccular, and homogeneous mass located near thymic bed on CT → Consider thymic cyst and evaluate with MRI
4. If purely cystic and located in cardiophrenic angle → Pericardial cyst
5. Multiple markedly enlarged or matted lymph nodes / masses in anterior mediastinum ± neck, ± encasing but respecting vessels → HD, MLC- NHL
6. Lobular, homogeneous or slightly heterogeneous mass and with subpleural implants → Thymoma (invasive)
7. Large fatty mass with small amount of soft tissue & vessels, connection with thymus → Thymolipoma

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THANK YOU