

Case Report

Anterior Mediastinal Seminoma complicated with SVC and internal jugular vein tumour thrombus- a case report

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Abstract:

Extra-gonadal seminomas are rare tumors of anterior mediastinum occurring in young adults. 10% of the patients present with SVC syndrome. Circulating malignant cells can cause formation of SVC tumour thrombus (Present case was complicated with SVC tumour thrombus) .Overall prognosis of seminoma is good (about 90%) if treated with BEP based chemotherapy regimen.

Key words- Anterior Mediastinal Mass,Seminoma, Tumour thrombus.

Introduction

About 10-15% of all mediastinal masses are primary germ cell tumours ^{1,2}. Mediastinal Seminoma is an uncommon condition and occurs in young males between second to fourth decade ² Patients present with nonspecific symptoms such as chest pain, dyspnoea, hoarseness and fullness in neck and engorged neck veins if there is SVC obstruction. Primary SVC obstruction occurs in 10% cases³ . SVC obstruction due to tumour thrombosis is a rare phenomenon and very few cases have reported in the literature . ⁴ Overall prognosis of Seminomas is good and if treated with Cisplatin containing combination chemotherapy (BEP) and 5 year survival is about 90 % ⁵

Case Report

A 34 years old married male, hailing from Debrugarh , Assam was referred to our institute for expert opinion and further management in view of his symptoms and chest X-ray findings. He was a non-smoker, an automobile mechanic by occupation and presented with puffiness of face and fullness of neck with exertional breathlessness.(dyspnoea on exertion MMRC grade II) , engorged neck and upper extremity veins. On his visit to a local hospital, a plain X-ray chest PA view taken that revealed a mediastinal widening (fig 1a). On physical examination he had puffiness of face with distended veins of neck and upper extremity. Pulse was 88/bpm, regular, good volume with no radio femoral delay. His Blood Pressure was 124/80.Respiratory Rate was 24/min. There was no clubbing and respiratory system auscultation was within normal limits. Cardiovascular

system did not reveal any abnormality. External genitals did not show any abnormal findings. SpO₂ at room air was 98%.

Investigations

CT scan of chest revealed lobulated anterior mediastinal mass. Histopathological examination of the CT guided biopsy sample was, consistent with germ cell tumour (possibly seminoma). **Immuno-histochemical examination** confirmed the diagnosis of seminoma as the tumour cells showed positivity for markers of seminoma- PLAP. B- HCG and alpha fetoproteins were within normal limits. TSH-1.55U/ml and, Free T₄-1.57 ng/dl. His alkaline phosphatase was raised (1046 IU.) Whole body **PETCT** scan (fig 3) showed lobulated heterogeneously enhancing mass in the anterior mediastinum. Thrombus was noted in SVC and right internal jugular vein and brachiocephalic vein.(FDG avidity was supporting the diagnosis of tumour thrombus) There was no evidence of metabolically active disease anywhere in the body apart from anterior mediastinum.

Discussion

According to Friedman, germ cell tumour originates as an extra gonadal biphasic germ cells remaining in embryonic thymus⁶. About 5% of male germ cell tumours are occurring extra-gonadally.^{7,8} and respond well to radiotherapy and chemotherapy. 50-70 % of seminomas occur in anterior mediastinum.^{7,8} but cases of middle and posterior mediastinal seminoma have been reported^{9,2}. Our patient presented with symptoms of facial puffiness and exertional dyspnoea. He also had engorged neck veins and PET- CT scan revealed FDG avid SVC and IJV thrombus (fig3). Presence of FDG avid thrombus indicates presence of circulating tumour cells. Tumour thrombosis is an extension of tumour and commonly associated with tumours of pancreas, colon, renal cell carcinoma, Wilms tumour, adrenal tumour and liver cancers¹⁰. With the advances in PET metabolic imaging, it is now possible to detect tumour thrombi.

Treatment with Dexamethasone and inj clexan 0.6 u/day and first cycle of BEP (Bleomycin, Etoposide and Cisplatin) was initiated. Facial puffiness and engorgement of neck veins showed dramatic improvement. Subsequently after first cycle of chemotherapy there was dramatic clinical response and an excellent (good) radiological improvement. (Fig 1a and fig 1b) During the administration of chemotherapy patient developed leukopenia which responded to Granulocyte- CSF (Filgrastim). He came for next follow up after one month with persistent improvement in physical symptoms and radiological clearance.

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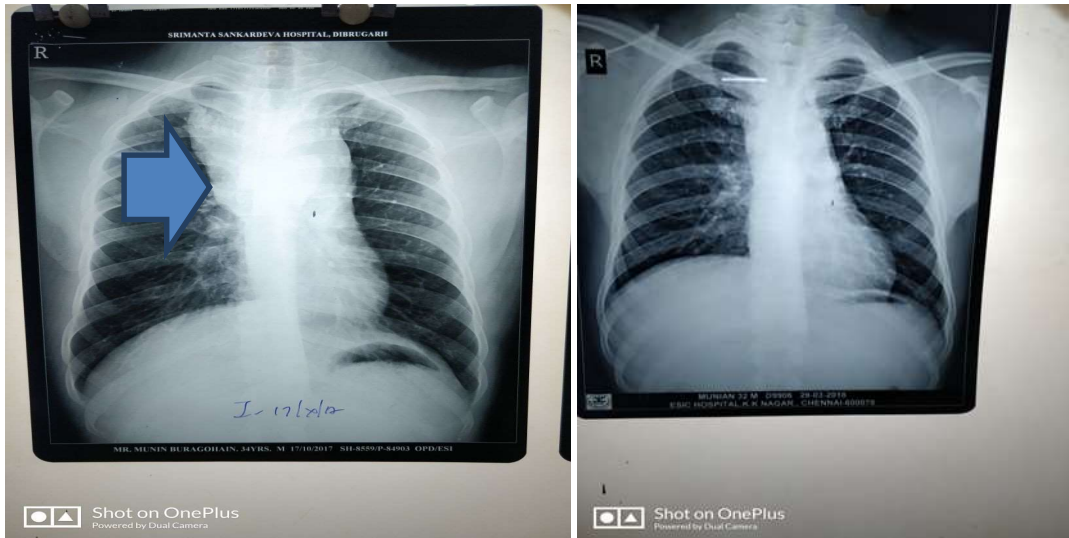


Fig1a)- CXR- Medistinal widening.(Arrow) Fig1b) CXR- after one cycle of chemotherapy.

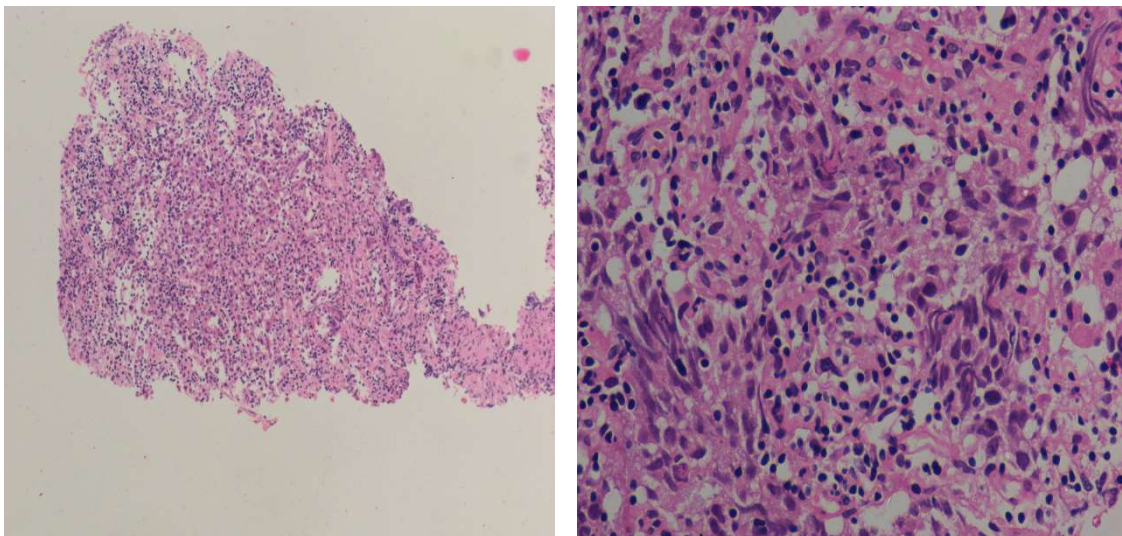


Fig2a)

Fig2b)

Fig 2b): Sections show tumour cells in sheets involving the entire core. H&Ex100
Fig 2b): Sections show a malignant neoplasm composed of sheets of malignant cells. Cells are round to polygonal with some showing spindle morphology. Round cells have abundant clear cytoplasm with round nucleus and some with prominent nucleoli. Lymphocytes are seen in between the cells. Overall picture is consistent with Seminoma.

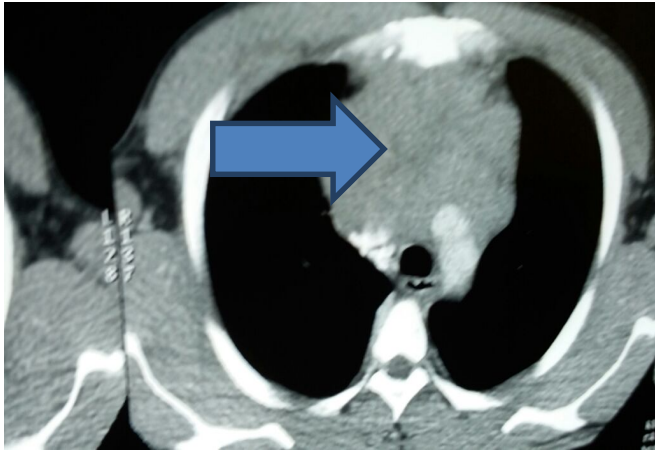
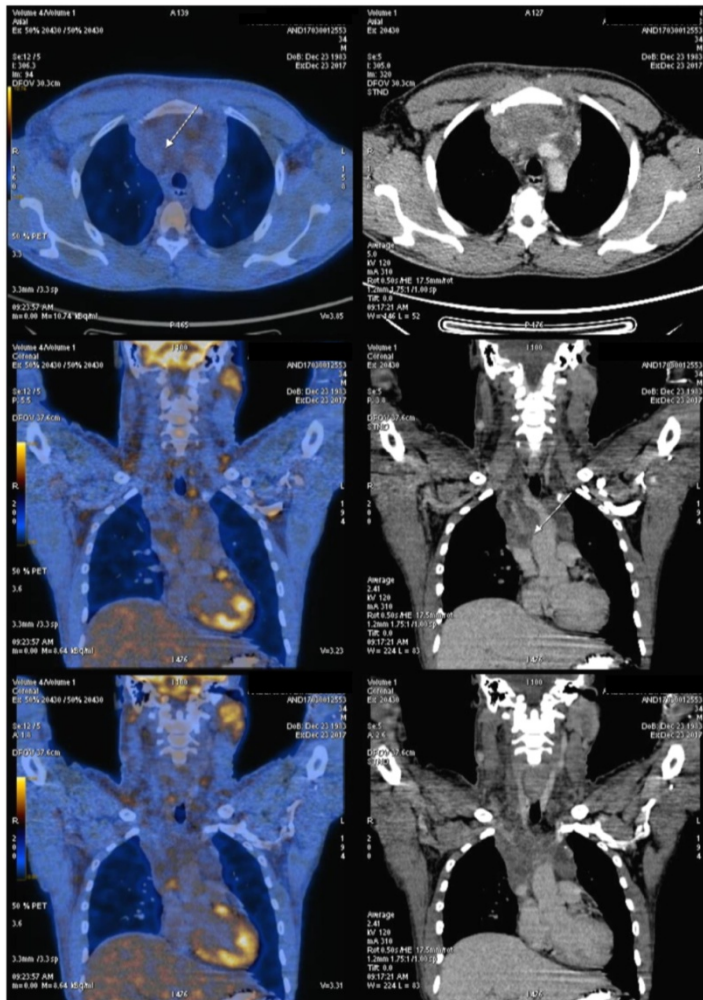


Fig 3.PET CT image



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