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CASE REPORT

A rare complication of rupture of a mediastinal Teratoma into the bronchus: A case report

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Abstract

Background: Germ cell tumours (GCT) are tumours arising from primordial germ cells. Gonadal and extragonadal GCT are infrequent in childhood occurring at a rate of 2.4 cases per million children accounting for 2-3 % of paediatric malignancies with most common subtype being a matured Teratoma. **Case presentation:** We present a case of a 10-year-old female child who presented to the emergency department of a tertiary care centre with complaints of cough with massive expectoration of blood of approximately 200 ml in quantity which on imaging revealed a left anterior mediastinal mass which was managed by left lateral thoracotomy with a non-anatomical left sided pulmonary lobectomy which on histopathology was diagnosed to be a case of mature teratoma. **Conclusion:** This case report describes a unique presentation of extra-gonadal mediastinal teratoma which presented as a rare complication with rupture into the left bronchus. It emphasizes caution and a high clinical suspicion is required in managing cases of varied presentations of teratomas.

Keywords: Mediastinal Teratoma, Germ cell tumours (GCT), Primordial germ cells

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Introduction

Germ cell tumours (GCT) are tumours arising from primordial germ cells. Gonadal and extragonadal GCT are infrequent in childhood occurring at a rate of 2.4 cases per million children accounting for 2-3 % of paediatric malignancies with most common subtype being a matured Teratoma. The teratomas may be gonadal or extra-gonadal in origin. We present a case of 10-year-old female child with extra-gonadal mediastinal teratoma which presented as a rare complication with rupture into the bronchus which was managed with a left lateral thoracotomy with a non-anatomical left sided pulmonary lobectomy with a successful outcome.

Case presentation

A 10-year-old female child presented to the emergency department of a tertiary care centre with complaints of cough with massive expectoration of blood of approximately 200 ml in quantity. She had experienced a similar episode 15-20 days back for which she was admitted in hospital. There was no h/o any bleeding diathesis and no history of fever. CECT (Contrast enhanced computerised Tomography) thorax was done which revealed well defined lobulated smoothly marginated lesion in anterior mediastinum with fat densities within air foci and within the lesion, centrilobular ground glass opacities with bronchiectatic changes with a consolidatory patch was noted in left lingual lobe and so, a diagnosis of thymolipoma was made. Along the lingual lobe of lung aberrant vasculature were also noted (Figures 1 and 2).

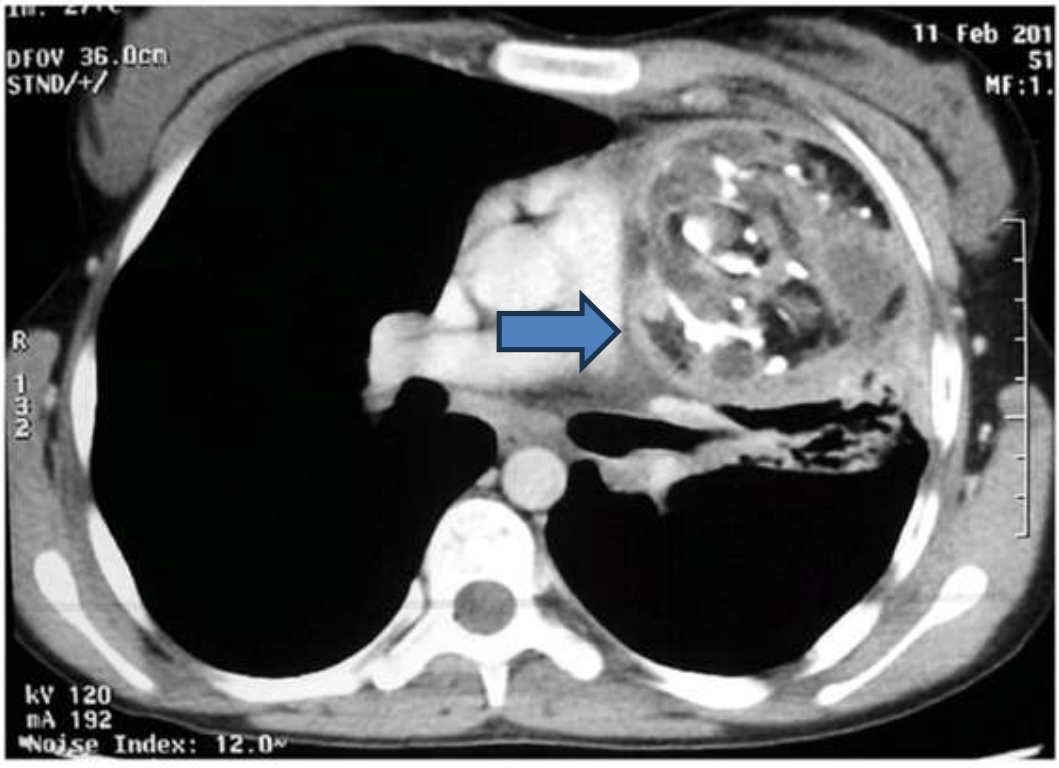

Figure 1. CECT Thorax showing well defined lobulated smoothly marginated lesion in anterior mediastinum.

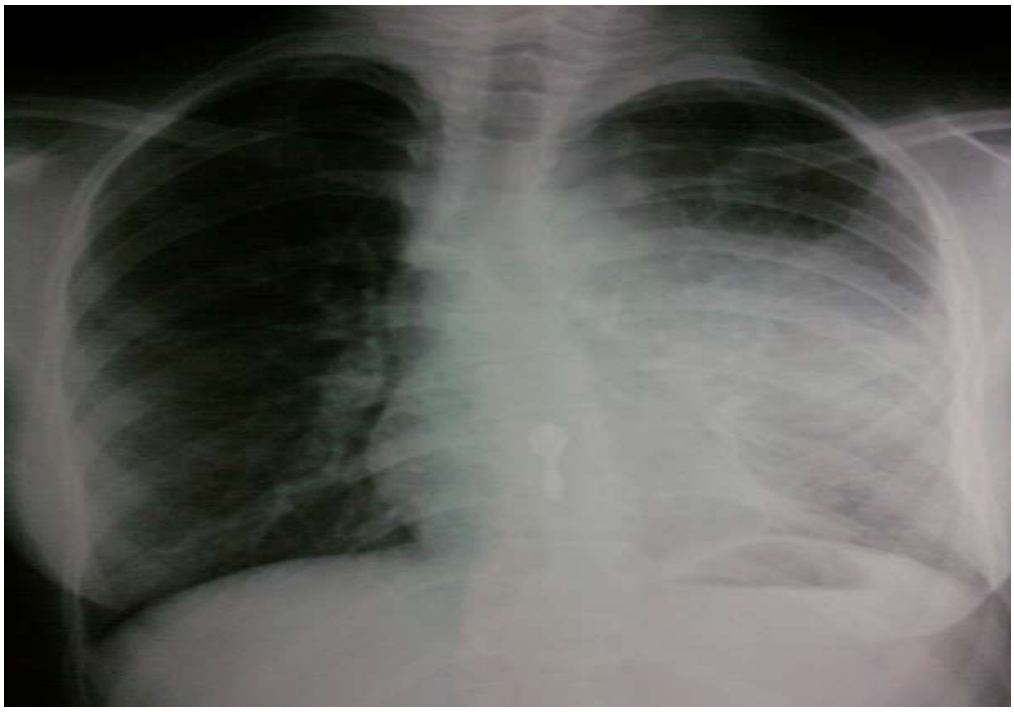

Figure 2. Chest radiograph showing the left anterior mediastinal tumour.

CT guided embolization of aberrant vessels was tried but was unsuccessful. Child lost about 100 ml blood daily through haemoptysis and was having a morbid course. CT guided Fine needle aspiration was done but cytology revealed fat cells and haemorrhagic tap. So surgical intervention with excision of mass and non-anatomical lobectomy was planned. On left lateral thoracotomy a 5*5 cm mass firm in consistency was found in anterior mediastinum adherent to pleura pericardium and arch of aorta with a communication with lingual lobe bronchus. The mass was excised and it revealed evidence of cheesy pultaceous material upon cutting open the mass postoperatively (Figure 3).

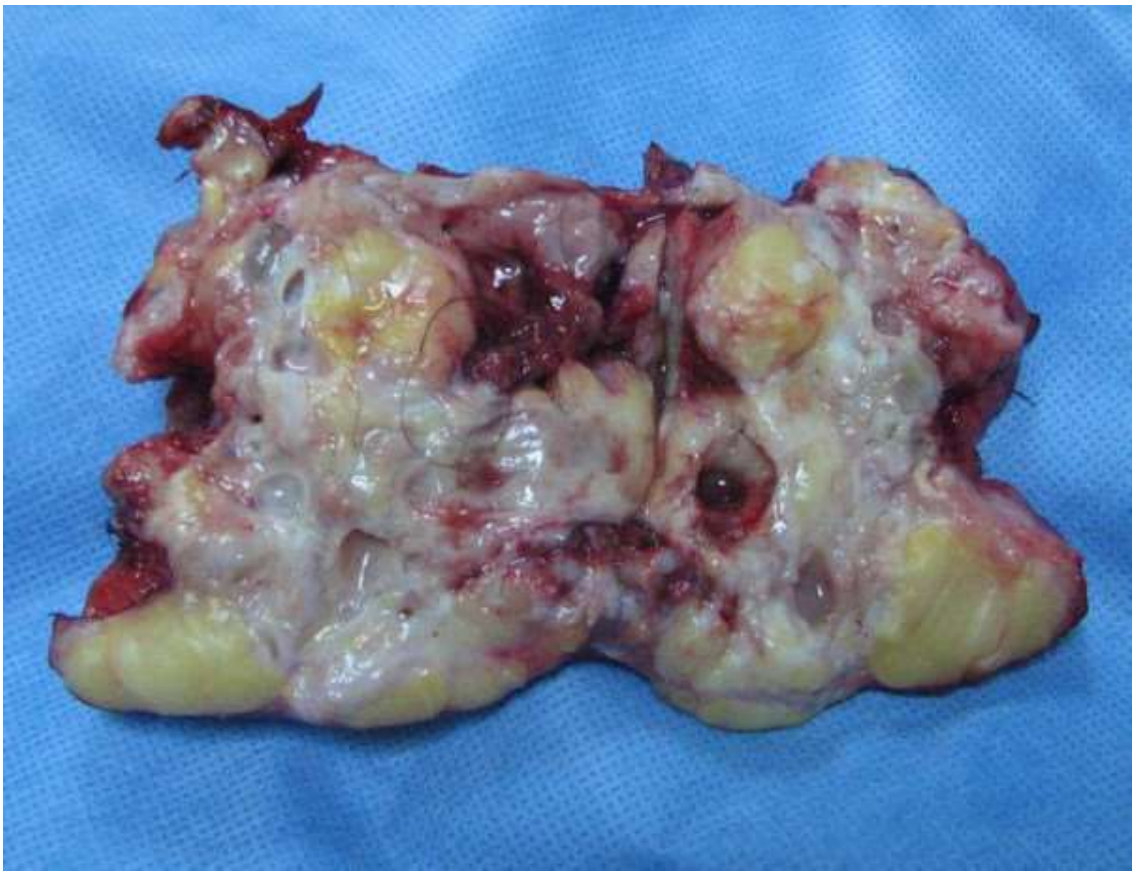

Figure 3. Clinical picture of the resected specimen showing cheesy pultaceous material after cutting open the specimen.

Histology of the specimen revealed a mature Teratoma with bronchiectasis, pneumonitis and haemorrhage in lung tissue. The postoperative course involved mechanical ventilation for 4 days followed by successful extubation and a successful recovery in 12 days and was discharged on 14th postoperative day. Patient has been on regular follow up of 3 months for the last 2 years and there is no recurrence.

Discussion

Embryo histogenesis: Extragonadal germ cell tumours arise from aberrant or incomplete migration of primordial germ cells. Another hypothesis is that these tumours arise from totipotent embryonal cells that have escaped the influence of embryonic organisers controlling normal differentiation [1,2].

The two most common sites for extragonadal GCT in older children are mediastinum and brain.

Molecular biology: Individuals with 46, XY and 45, X/46, XY gonadal dysgenesis have a 10 % to 50 % risk of developing a gonadal germ cell tumour. Patients with Klinefelter syndrome (47, XXY) have an increased risk of developing extra gonadal germ cell tumours, in particular mediastinal germ cell tumours [3,4]. In these patients, Increased levels of Beta HCG and AFP confirms malignant etiology. If there is increased beta-HCG and increased AFP levels; then it is suggestive of nonseminomatous germ cell tumours. If

there is decreased beta-HCG and nondetectable AFP levels, then it is of pure seminoma. Isochrome 12 p is diagnostic of undifferentiated germ cell malignancy even in absence of elevated serum markers.

Treatment: Treatment of mature mediastinal Teratoma is complete surgical resection. Radiotherapy and chemotherapy play no role in management. In case of Immature Teratoma cisplatin-based adjuvant chemotherapy can be given (4 cycles with cisplatin, etoposide, bleomycin or vinblastine, ifosfamide). In case of nonresectable Teratomas, neoadjuvant chemotherapy can be considered.

Prognosis

Multivariate cox proportional hazards regression analysis identified age >12 yrs. as a prognostic factor. Using this analysis patients with thoracic primary >12 yrs. had a sixfold higher risk of death. All primary mediastinal nonseminomatous germ cell tumours fall into poor risk category of international germ cell consensus classification.

Conclusion

This case report describes a unique presentation of extra-gonadal mediastinal teratoma which presented as a rare complication with rupture into the left bronchus. It emphasizes caution and a high clinical suspicion is required in managing cases of varied presentations of teratomas.

Conflicts of interest

The authors declares that they do not have conflict of interest.

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