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Anterior Mediastinal Teratoma Masquerading as Left Lobar Pneumonia and Pericardial Effusion: A Case Report

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Introduction: Teratomas are very rare types of germ cell tumours containing tissues originating from two or more of the germ cell layers.
Case Presentation: We present a case of an eight-year-old female child who had features initially suggestive of left lobar pneumonia and pericardial effusion. However, after poor response to chemotherapy, computerized axial tomography (CT) of the chest was done which suggested mediastinal teratomas.
Conclusion: Teratomas located in the anterior mediastinum is a rare form of germ cell tumour located in the anterior mediastinal mediastinum. Persistent non-specific respiratory symptoms should not be overlooked in children, as they may be indicative of anterior mediastinal teratoma. Surgical resection is curative for most teratomas.

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Keywords: Mediastinal teratomas; child; excision; CT; case report.

1. INTRODUCTION

Cardiac and thoracic insults are not uncommon in children [1-3]. However, anterior mediastinal teratoma are uncommon tumour which consists of fully developed tissues such as muscle, teeth, hair, and bone [4]. Though it could occur mainly in the testicles and ovaries, it could also occur elsewhere in the body [4]. Resectable malignant cases treated with surgery alone was 17% compared with 100% when resection is combined with multiagent chemotherapy. There is a very high mortality for unresected malignant lesions even with the use of multiagent chemotherapy [5]. Mediastinal teratomas are the commonest extra-gonadal germ cell tumours, accounting for about 25% in children and 50%-70% of mediastinal tumours [6]. These masses may be asymptomatic; however, it may present with mass effect, rupture leading to pleural effusion and impaired endocrine function [6]. Pleural effusion may lead to the diagnostic dilemma especially in a developing country [6]. Teratomas are usually classified using the Gonzalez-Crussi grading system: Grade 0 is mature (benign); grade 1 is immature, probably benign; grade 2 is immature, possibly malignant (cancerous); and grade 3 is frankly malignant.

We report a case of a mediastinal teratomas in an 8-year-old female who was previously been treated for lobar pneumonia. This is a rare case report as this the first time we are managing this case and chest teratomas are rare in this locale.

2. METHODS

Computerized Axial tomography (CAT) scan was requested which showed a heterogeneous left anterior mediastinal mass that has obliterated the left cardiac margin (Fig. 1). A diagnosis of anterior mediastinal teratoma was made and she was referred to the cardio-thoracic surgeons for review. She also had a left anterolateral thoracostomy with excision of the anterior mediastinal mass and left lung decortication. She was discharged 6 days' post operation and is currently on follow-up.

3. CASE PRESENTATION

We report a case of AB, an eight-year-old female who presented with complaints of cough x 14/7, fever and chest pain x 12/7, difficulty in breathing x 6/7 all prior to presentation. Salient findings on presentation were pyrexia, respiratory distress, reduced chest expansion, increased tactile fremitus and vocal resonance and reduced air entry on the left hemithorax. A provisional diagnosis of Left Lobar Pneumonia and possible Koch's Disease was made. Cough and chest pain had persisted after medications. CT scan was requested which showed a heterogenous left anterior mediastinal mass that has obliterated the left cardiac margin (Fig. 1). A diagnosis of anterior mediastinal teratoma was made and she was referred to the cardiothoracic surgeons for review. She also had a left anterolateral thoracostomy with excision of the anterior mediastinal mass and left lung decortication. She was discharged 6 days' post operation and is currently on follow-up.

4. DISCUSSION

Mediastinal teratomas are rare disease contributing 1-3% of childhood tumour [7]. They are of different variety with various manifestation depending on age and site of presentation, clinical outcomes and histology [7]. An incidence of 1 in 40,000 live births has been reported. It could be mature (well differentiated), pure immature (poorly differentiated) and immature with a malignant transformation [8]. Our index case had a mature teratoma at the end of the clinical course. Most patients are asymptomatic (60%), however when symptoms occur, they are related to mass effect and tumour rupture. This was akin to our patient who had respiratory distress from the pressure effect of the mass. The index patient also presented with pericardial effusion that may have resulted from tumour rupture. Chest CT scan with contrast is the imaging modality of choice [8]. It gives information on the location and degree of extension to adjacent structures. Our patient had a CT scan report that showed a heterogenous left anterior mediastinal mass [9,10].

Surgery is the mainstay of treatment. Surgical resection alone is curative for mature and immature teratomas [9]. Surgery was done for the index case with resection of the mass. Patients with immature teratoma with malignant transformation would require adjuvant chemotherapy after surgical resection for a

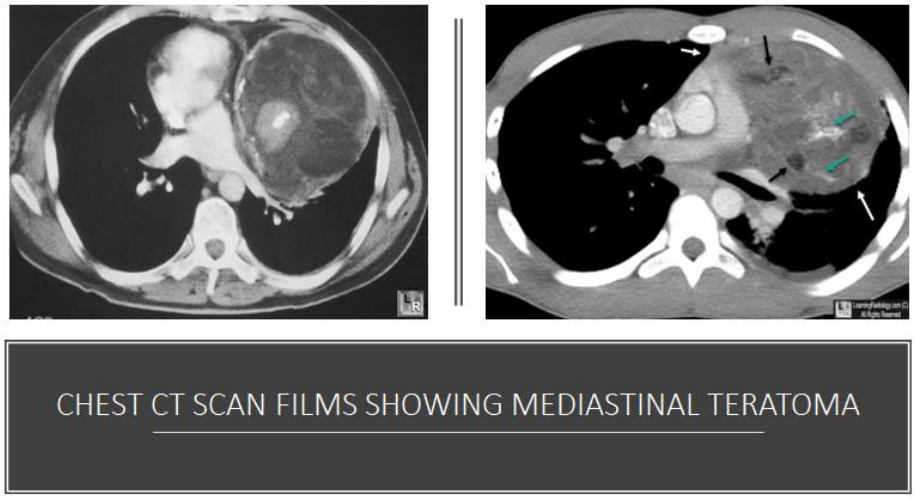

Fig. 1. CT scan of the index patient showing mediastinal Teratoma

period of 3-4 months, after which patient is reassessed for the need for further treatment. Our patient did not need any adjuvant chemotherapy since there were no malignant transformation. Prognosis is excellent for mature and pure immature teratomas. There is a 20% risk of recurrence in patients with immature teratoma with malignant transformation.

5. CONCLUSION

Anterior mediastinal teratoma is a rare form of germ cell tumour located in the anterior mediastinal mediastinum. Persistent non-specific respiratory symptoms should not be overlooked in children, as they may be indicative of anterior mediastinal teratoma. Surgical resection is curative for most teratomas.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

CONSENT

As per international standards, parental written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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