

Massive Hemoptysis: A Rare Presentation of Anterior Mediastinal Teratoma in an Adolescent

Abstract

Germ cell tumors are predominantly found in the gonads, and the most common extragonadal site is anterior mediastinum. Usual symptoms are cough, dyspnea, and fever, chest pain due to mass effect or intrapulmonary invasion but hemoptysis is rare and may result from either communication with tracheobronchial tree or may result from bronchial bleeding due to irritation by tumor. As in our case, patient presenting with massive hemoptysis and shock are the rarest presentation of a benign teratoma.

Keywords: Germ cell tumor; hemoptysis, teratoma

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Introduction

Hemoptysis is defined as the expectoration of blood or blood-tinged sputum from the lower respiratory tract. Although common in adult, blood-tinged sputum is rare presenting symptoms in children. Most commonly hemoptysis in children is caused by bronchiectasis, pulmonary tuberculosis, foreign body aspiration, congenital foreign body, and rarely malignancy.^[1] Germ cell tumors are predominantly found in the gonads, and the most common extragonadal site is anterior mediastinum. Mediastinal germ cell tumors account for 24% in children. Patients with mediastinum tumors are usually discovered incidentally on chest radiograph.^[2,3] Most symptoms are due to mass effect and pulmonary involvement.^[4] Here, we report a case of benign teratoma which was presented with massive hemoptysis along with hemorrhagic shock an unusual presentation in pediatric age group.

Case Report

A 10-year-old female child was admitted to Pediatric Intensive Care Unit through Emergency Department with a history of two to three episodes of massive hemoptysis for the past 2 days. She had such intermittent episode of hemoptysis for the past 2 months. She had no fever, breathlessness, loss of weight, joint pain, or renal symptoms. She had no significant past or family history of tuberculosis. On

arrival in Emergency Department, she was in hemorrhagic shock. The patient was resuscitated with fluid, and whole blood transfusion was given.

Her investigation yielded hemoglobin was 4 gm% with normocytic normochromic type of anemia, an erythrocyte sedimentation rate of 20 mm at end of 1st hour. Her total leukocyte count and differential leukocyte count were within normal limits, while her tuberculin test was negative. Chest radiograph was suggestive of well-circumscribed mass on upper left side with infective changes [Figure 1]. High-resolution computed tomography (CT) thorax revealed infective changes in both lung fields with well-circumscribed mass of size 4 cm × 4 cm × 4 cm on the left main bronchus and extending on lingual lobe suggestive of thymolipoma [Figure 2]. CT-guided fine-needle aspiration cytology shows fat cells. Intraoperatively, there was a mass of size 4 cm × 4 cm × 4 cm in the anterior mediastinum and communicating with left main bronchus and lingual lobe with cheesy putraceous material coming out of it and adhere to aorta, pericardium, and pleura. Mass was excised, and partial lobectomy was done. Histopathologically, on cut surface, mass was solid grayish white in color with many cysts of size 1 cm × 1 cm × 1 cm filled with brownish friable material and yellowish fatty area. On microscopy, elements of all three germ layer namely epidermis, skin adnexal

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Figure 1: Chest radiograph shows well-circumscribed mass in mediastinum



Figure 2: Computed tomography thorax shows well-circumscribed mass in mediastinum

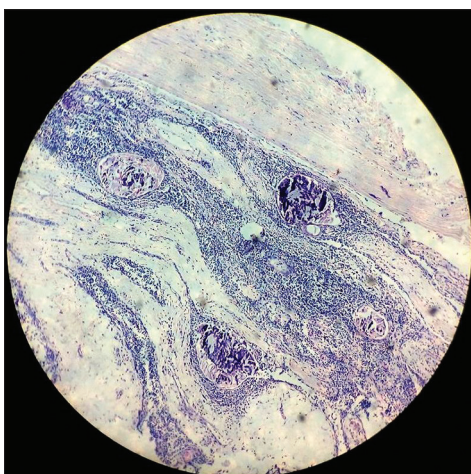


Figure 3: Microscopic changes of mature teratoma [Low power]

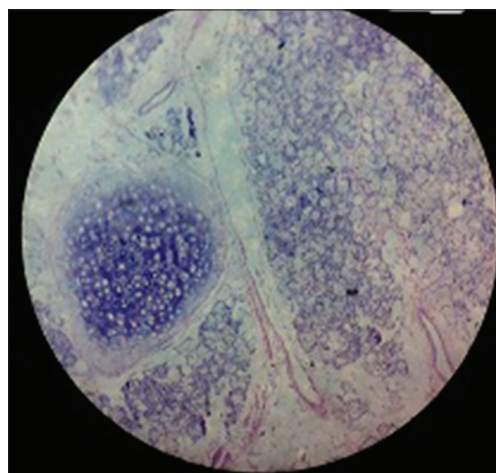


Figure 4: Microscopic changes of mature teratoma [High power]

structure, adipose tissues in sheets and groups, mature cartilage, muscle tissues, and respiratory epithelium suggestive of mature teratoma were seen [Figures 3 and 4].

Discussion

Anterior mediastinum is the most common extragonadal site of germ cell tumor and accounting 24% of all pediatric anterior mediastinal tumors.^[2] Benign lesions have no sex predilection; however, malignant ones are more common in males.^[5] A theory to account for extragonadal germ cell tumor was proposed by Fine *et al.*,^[6] who suggests that there was an error in the migration of primitive germ cells along the urogenital ridge.

Mediastinal tumors rarely produce symptoms except when they attain large size or rupture into lung and bronchial tree, pleural space, pericardial space, or great vessels.^[5] Most mediastinal teratomas with pulmonary involvement have, for unknown reasons, a predilection for the left upper lobe.^[4] Our case is also having left upper lobe and lingual lobe involvement. Unusual but pathognomonic symptom of expectoration

of hair (trichoptysis) is extremely rare in pediatric practice. Usual symptoms are cough, dyspnea, and fever, chest pain due to mass effect or intrapulmonary invasion but hemoptysis is rare and may result from either communication with tracheobronchial tree or may result from bronchial bleeding due to irritation by tumor.^[4] Here, we report a case of benign teratoma which was presented with massive hemoptysis along with hemorrhagic shock an unusual presentation in pediatric age group. All these symptoms may mimic pulmonary tuberculosis in adolescent, especially in tuberculosis-endemic area; but in our patient, tuberculosis workup was negative. Teratomas can get infected from contagious foci in the lung parenchyma or through blood stream resulting into bronchopneumonia, lung abscess, or emphysema.^[7] Similar infective changes in both lungs were noted in our case.

Complete curative surgical removal of mediastinal teratomas is the treatment of choice, as it established the diagnosis and prevent life-threatening complication.

Conclusion

Massive hemoptysis is the rarest and life-threatening complication in pulmonary tuberculosis, coagulopathy, and leukemias; but mediastinal teratomas is the rarest cause of massive hemoptysis in pediatric practice.

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Conflicts of interest

There are no conflicts of interest.

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