

AN INTERESTING CASE OF AORTOBRONCHIAL FISTULA PRESENTING AS FATAL HAEMOPTYSIS

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PRESENTATION OF CASE

Haemoptysis is a relatively common presentation in medical practice and can be attributed to many causes. Common causes of massive haemoptysis include pulmonary parenchymal disease, vascular disorders, vasculitides, coagulopathy and bleeding diathesis and occasionally aortobronchial fistulas.¹ Occasionally, patients who have thoraco-abdominal aneurysms present with massive haemoptysis secondary to erosion or rupture into the bronchus or lung parenchyma.

We report a case of elderly female who presented with sudden onset of massive Haemoptysis. Chest x-ray showed homogenous opacity in the left upper zone para-tracheal area and widening of superior mediastinum. Echocardiography showed dilated descending aorta and dissection at the level of left common carotid area with thrombus. CECT thorax suggested aneurysm of arch of aorta complicated by rupture and pulmonary haemorrhage into the left upper lobe of the lung. This was confirmed by CT Aortogram. Patient was later referred to CTVS surgeon for further management.

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A 72-year-old female presented to emergency department with sudden onset of two episodes of massive haemoptysis. There were no complaints of chest pain, back-ache, cough, breathlessness or syncope. She had no previous co-morbidities of Pulmonary TB, COPD, valvular heart disease, hypertension, ischemic heart disease. There

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was no significant family or personal history. On examination, she was conscious appeared pale and was clammy. She had tachycardia with pulse 110/min tachypnoeic and hypotension with a blood pressure recording of 90/60 mmHg. All peripheral pulses including carotids were normal. There were no other findings

Cardio-respiratory examination was normal except for crackles over left infraclavicular area and no neurological deficits. Initial diagnoses included pulmonary tuberculosis, pneumonia, Ca Lung which can present with massive haemoptysis apart from ruptured aneurysm. Patient was investigated, she had normocytic normochromic anaemia with Hb% of 8 gms. Coagulation profile was normal. ECG showed sinus tachycardia with rate of 102 bpm. Chest x-ray showed aortic arch dilatation and homogenous opacity in the left upper zone para-tracheal area, suggestive of consolidation/hematoma/mass lesion. Echocardiography showed normal chambers of the heart with dilated arch and descending aorta and dissection at the level of left common carotid with thrombus. CECT thorax showed aneurysm of arch of aorta complicated by rupture and pulmonary haemorrhage into left upper lobe. This was confirmed by CT aortogram.

Patient was aggressively managed with inotropes, anti-fibrinolytics, beta blockers and was monitored. She was referred to CTVS Surgeon for further management of the condition. Patient on follow up succumbed due to massive haemoptysis before definitive treatment.

DIFFERENTIAL DIAGNOSIS

Pulmonary parenchymal disease mainly TB, vascular disorders, vasculitides, coagulopathy and bleeding diathesis, trauma, iatrogenic and occasionally aortobronchial fistulas.¹

CLINICAL DIAGNOSIS

Massive haemoptysis probably due to pulmonary Koch's or Ca Lung.

Investigations	Values
Haemoglobin	7.9 g/dl
Total WBC count	9900/cu.mm
Platelet count	3.74 Lakhs /cu.mm
PCV	24.2%
Bleeding time	2 minutes 42 seconds
Clotting time	5 minutes 45 seconds
Prothrombin time	14.8 seconds
INR	1.09

Blood urea	16 mg/dl
Serum creatinine	1.1 mg/dl
HIV (Tridot method)	Non-reactive
VDRL	Negative
Table 1. List of Investigations Done	

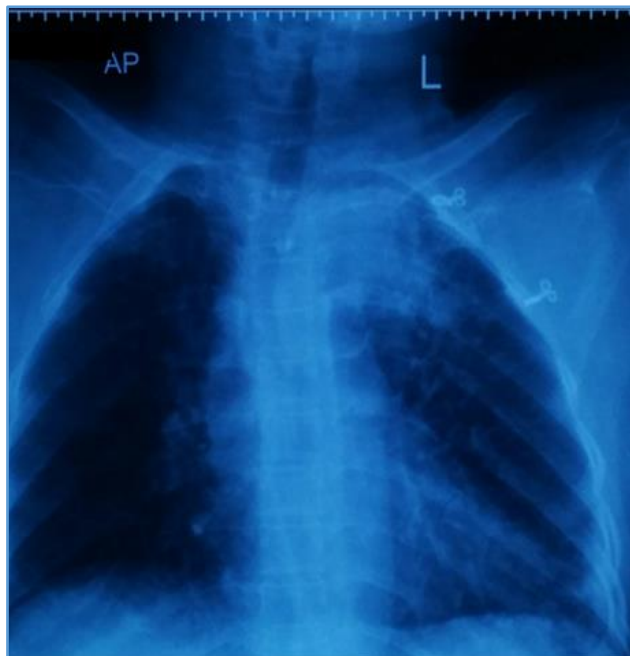


Figure 1. Chest X-ray Showing Dilated Aortic arch with Homogenous Opacity in Upper Zone of Left Lung Suggestive of Consolidation/ Haemorrhage/ Ca Lung

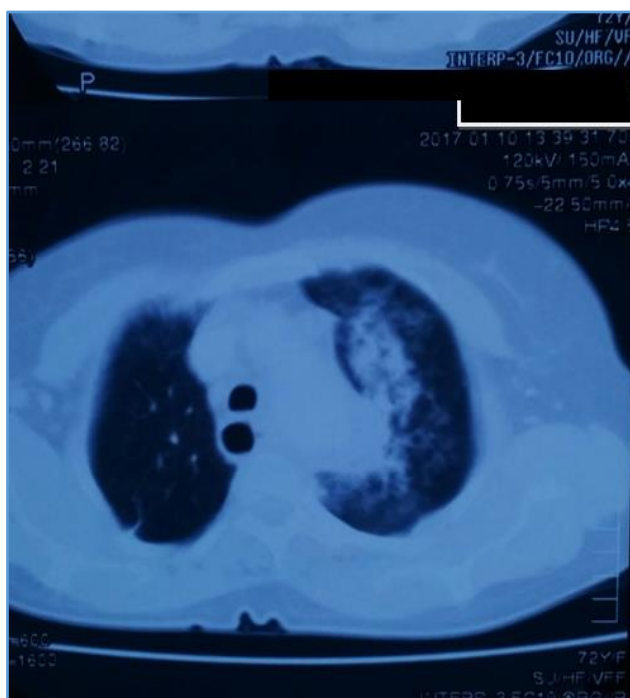


Figure 2. CECT Thorax Suggestive of Pulmonary Hemorrhage in Left Upper Lobe Due to Rupture of Aortic Arch Aneurysm



Figure 3. CT Aortogram suggestive of aneurysm arising from the aorta immediately distal to the left subclavian artery with peripheral thrombus

DISCUSSION OF MANAGEMENT

Massive haemoptysis has numerous causes; most cases are associated with a chronic infectious process,^{2,3} such as tuberculosis that ruptures into the lung parenchyma or erodes into the bronchus can lead to acute and massive haemoptysis. Aortobronchial fistula is a rare condition that is invariably fatal if not diagnosed and surgically treated. Review of literature shows 64 reported⁴ cases, most of the fistulas between descending aorta and left bronchopulmonary tree. Exact pre-op diagnosis was made in only 54% cases. The clinical course is characterized by recurrent haemoptysis. The bleeding can be relatively light because of adhesion to the surrounding lung tissue. Massive haemoptysis leading to cardio-pulmonary arrest may occur.

Etiological factors include genetic disease or mutations such as Marfan syndrome, Ehlers-Danlos syndrome (Mutations include of TGF-BR1, TGF-BR2, FBN-1, ACTA-2, MYH-11 and so on).⁵ Most aneurysms are clinically silent. Symptoms include that of chest pain, back pain, congestive heart failure, myocardial ischemia and branch vessel occlusion. The major cause of mortality is dissection and rupture. In aortic aneurysm there is a steep rise in complications if diameter exceeds 6 cm in ascending and arch whereas in descending aorta it is 7 cm requiring regular followup.

In the present case, the patient had a mass of left upper lobe suggestive of lung cancer/tuberculosis, especially because of dry cough, haemoptysis. The haemoptysis was thought to be the result of invasion of the bronchial tree by the cancer and the CT showed the left upper lobe mass eroding into the aortic arch anterior wall and haemorrhage with in lung parenchyma.^{6,7} However CECT Thorax showed that the haemoptysis was caused by an aortic aneurysm rupturing into the lung. CT Aortogram too inferred the same.^{6,7} Therefore, it is difficult to differentiate between a

lung cancer invading the aorta and a rupture of aortic arch aneurysm extending into the lung without further workup.

FINAL DIAGNOSIS

Massive haemoptysis secondary to ruptured aortic aneurysm with aortobronchial fistula with extension into left upper lobe.

CONCLUSION

Thus, a case of massive haemoptysis due to aortobronchial fistula due to invasion and rupture in to the bronchopulmonary tree is reported because of its severity and rarity. Timely recognition and surgical intervention can be lifesaving. Hence the importance of early diagnosis by the high index of suspicion when the patient presents with massive haemoptysis, profuse sweating, myocardial ischemia, shock and cardiorespiratory arrest. Literature shows that endovascular or open surgery is the only definitive treatment.

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