An interesting case of haemoptysis
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Citation

Abstract
Haemoptysis is a common symptom that can occur in a variety of respiratory and cardiovascular diseases. Here we describe an interesting case of haemoptysis who was first mistaken as pulmonary tuberculosis and then as bronchogenic carcinoma before being referred to us and was ultimately found to have aortic dissection. It is an unusual presentation of a rare condition associated with a grave prognosis and even death if not diagnosed and managed promptly.

INTRODUCTION
Aortic dissection is a rare condition. Its incidence is estimated to be 5-30 cases per 1 million people per year. The most common site of dissection is the first few centimeters of the ascending aorta, with 90% occurring within 10 centimeters of the aortic valve while dissection occurring distal to the left subclavian artery is much less common. Clinical manifestations are diverse making the diagnosis difficult. Further haemoptysis as the sole presentation has rarely been reported with only few reports implicating aortic dissection as cause of haemoptysis till now. Here we present such a case of dissection of descending aorta in a 65-year-old female who presented to us with the sole complaint of haemoptysis.

CASE REPORT
A 65-year old female, nonsmoker presented to our department with the sole complaint of off and on haemoptysis for the last 4 months. She gave history of had taken antitubercular treatment (ATT) without any improvement for two months. She had undergone a transthoracic echo to rule out any cardiovascular cause but it came out to be normal. Her X-ray was also carried out and she was then referred to us suspecting it to be malignant. Her medical history was otherwise unremarkable.

On general physical examination, Blood pressure in right arm was found to be 160 mm Hg systolic and 110 mm Hg diastolic. Pulse rate was 110/min. Rest of the physical examination was normal. Routine investigation showed: hemoglobin: 11 gm%, total leukocyte count: 6400/mm³ with normal differential count, platelet count: 2.1 lac/mm³ and Erythrocyte sedimentation rate: 16 mm/hr. Her chest X-ray PA view (FIG 1) showed mediastinal widening with a large well-defined homogenous opacity in left of superior mediastinum. There was no lesion in lung parenchyma.

Figure 1
Figure 1: showing mediastinal widening with a large well-defined homogenous opacity in left of superior mediastinum.

Her sputum smear for AFB was negative. PPD also showed no induration. Contrast enhanced CT thorax (FIG 2,3) was done to evaluate this mediastinal shadow. On CT thorax, dilatation of descending aorta was found just distal to the left subclavian artery and it was associated with an intimal flap resulting in a double lumen suggestive of aortic dissection.
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Figure 2
Figure 2: CECT Thorax revealing dilatation of descending aorta.

Figure 3
Figure 3: CECT Thorax revealing an intimal flap within the descending aorta resulting in a double lumen suggestive of aortic dissection.

Trans esophageal echo was carried out which confirmed the diagnosis. Patient was put on antihypertensives and she has improved on them.

DISCUSSION
Aortic dissection is defined as separation of the layers within the aortic wall. Tears in the intimal layer result in the propagation of dissection (proximally or distally) secondary to blood entering the intima-media space. This disease was first described long ago (>200) yrs with the first well-documented case of aortic dissection, when King George II of England died while straining on the commode. DeBakey did first successful operative repairs in 1955. Since then lot of research has further occurred in this field. Dissections of the thoracic aorta have been classified anatomically by 2 different methods. The more commonly used system is the Stanford classification, which divides it into 2 types, type A and type B. Type A involves the ascending aorta while the type B does not. This system also helps delineate treatment. Usually, type A dissections require surgery, while type B dissections may be managed medically under most conditions. The DeBakey classification divides dissections into 3 types. Type I involves the ascending aorta, aortic arch, and descending aorta. Type II is confined to the ascending aorta while the Type III is confined to the descending aorta distal to the left subclavian artery. Aortic dissection is more common in blacks than in whites and less common in Asians than in whites. The male-to-female ratio is 3:1 while approximately 75% of dissections occur in those aged 40-70 years, with a peak in the range of 50-65 years. Chest pain that is usually described as tearing and ripping is the most common presenting symptom in patients with an aortic dissection. Pain may be mild in some cases as in above case and is even absent in about 10% cases. Neurologic deficits are a presenting sign in up to 20% of cases and may include syncope, stroke symptoms, altered mental status, limb paresthesias, pain, or weakness. Patient may also present with dyspnea, orthopnea and dysphagia. Patient may present with high or low BP. Further a blood pressure differential of greater than 20 mm Hg is an independent predictor of aortic dissection. Chest radiography is the initial imaging technique and it may or may not reveal any abnormality. X-ray findings may include a widened mediastinum, deviation of trachea to right or pleural effusion. No abnormality is observed in 12% of patients. Computed tomography (CT) scanning is associated with a higher rate of detection and has a sensitivity of 83-94% with a specificity of 87-100%. The accepted diagnostic criterion standard, angiography, is being challenged by state-of-the-art CT angiography. However CT scanning is useful only in hemodynamically stable patients because of its lack of portability and its potential limitations in patients with contraindications to intravenous contrast agents. Echocardiography is an important imaging modality for detecting aortic dissection. Transthoracic echocardiography (TTE) has a much lower sensitivity (80%) and lower specificity (90%) than Angiography and is much less useful in diagnosis of type B dissections as seen in our case.
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Transesophageal echocardiography (TEE) is preferable to TTE. TEE is as accurate as CT scanning and MRI in terms of sensitivity and specificity. TEE has more advantages than other imaging techniques because it is portable and can be used in hemodynamically unstable patients. MRI has over 90% sensitivity and greater than 95% specificity. It is the most sensitive method for diagnosing aortic dissection and has similar specificity to CT scanning and is the preferred tool for imaging chronic dissections and postsurgical follow-up. Medical therapy is initiated as soon as the diagnosis is considered. The goal is to decrease the blood pressure and the shearing forces of myocardial contractility in order to decrease the intimal tear and propagation of the dissection. Intravenous beta-blockers are the drugs of choice. It is also the treatment of choice as far as type B dissections are considered and medically treated patients with type B dissection have a 10% mortality rate. However surgery is required in type A dissections. Patients with type A dissections who undergo surgical treatment have a 30% mortality rate as compared to 60% mortality rates in those treated only medically.

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