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Hemoptysis as a rare presentation of thoracic aorta aneurysms

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ABSTRACT

Hemoptysis is the rarest presentation of thoracic aortic aneurysm (TAA).This critical condition is one of the life-threatening medical emergencies. Even with prompt approaches, TAA can have highly terrible outcomes. Although TAA is an almost asymptomatic condition that is accidentally discovered, imaging with contrast is the most useful modality to diagnosis it.

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Introduction:

Thoracic aortic aneurysms (TAAs) expand slowly and usually present within a clinically silent process. The silent process of TAA makes it difficult to diagnose. Hemoptysis is a very rare presentation of TAA (1, 2). Both TAA and massive hemoptysis are potentially dangerous and life-threatening. Airway or parenchyma lung erosion with TAA leads to the development of intense bloody cough (3). Chest X-ray is the first paraclinical approach for this condition, usually showing mediastinal widening. The implementation of a chest computed tomography (CT) scan can confirm the development of TAAs (4).

Case presentation

A 78-year-old male ex-smoker presented with the complaint of fresh bloody expectoration (approximately 150 cc in amount), two times on the admission day. Examination revealed a blood pressure of 160/100 mmHg, pulse rate of 98 bpm, respiratory rate of 18 breaths per min, and temperature of 36.8˚C. No clubbing or cervical and axillary lymphadenopathy was detected. The upper respiratory tract was found to be normal. Bilateral crackles were heard in the lower zones. The left ventricular fourth heart sound was heard at the cardiac apex. There was no murmur indicating heart valve disease. The abdominal examination demonstrated no abnormal findings. The patient had undergone coronary artery bypass grafting 12 years before presenting with this condition.

Anteroposterior chest X-ray showed mediastinal widening, which was suggestive of mediastinal mass (Figure 1). The thorax CT with contrast was indicative of a mass lesion measuring approximately 13.3×8.4 cm in the anterior and middle mediastinum. The mass was contiguous with the walls of the ascending thoracic aorta and arch of the aorta, which were grossly dilated and showed mural calcification (Figures 2, 3). The image with contrast confirmed the

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diagnosis of TAA. Fiberoptic bronchoscopy revealed the extraction of fresh blood from the left lower lobe; however, no mucosal wall abnormalities were seen (Figure 4).

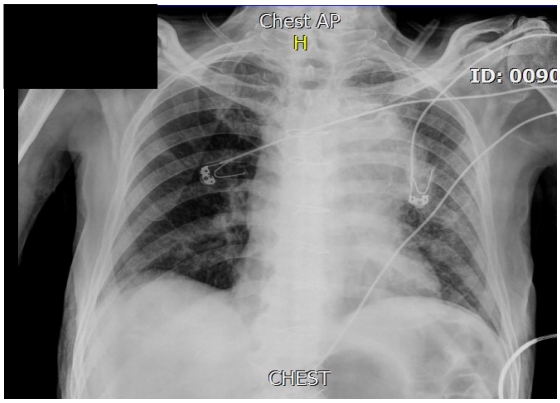

Figure1. Antero posterior (A-P) Chest X ray

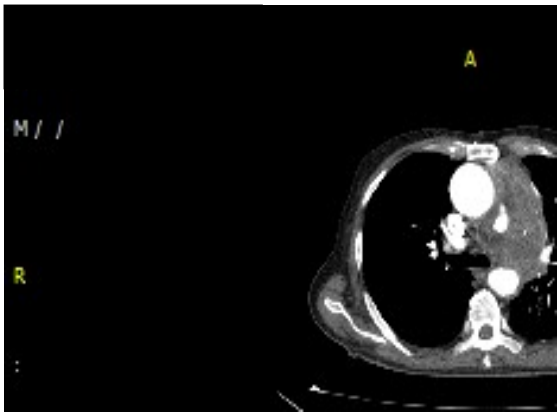

Figure 2. Mediastinal view of CT scan with contrast

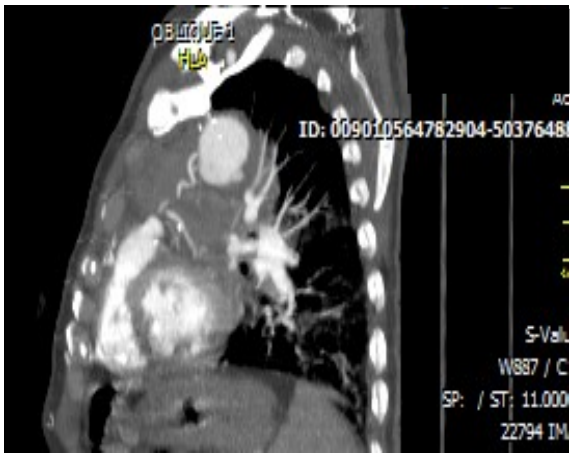

Figure 3. Mediastinal view of CT scan with contrast

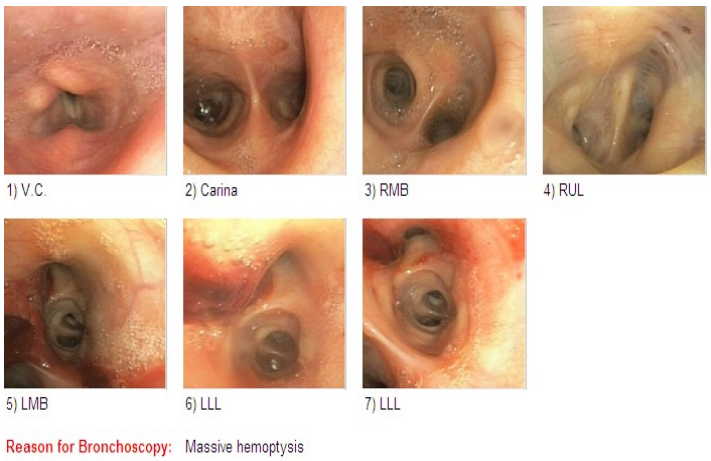

Figure 4. Fiberoptic bronchoscopy views

Discussion

Hemoptysis carries widespread differential diagnoses, including airway diseases, such as chronic obstructive pulmonary disease, bronchiectasis, pneumonia or collagen vascular disease, pulmonary arteriovenous malformation, hematologic disorders, malignancies, and iatrogenic injuries (1-2). Due to this multiplicity, exact history taking and casting strong suspicion are critical for making prompt clinical decisions. One of the rarest presentations of TAA is hemoptysis (3). It is worth mentioning that TAA is a rare terrible medical condition, occurring in 6-10 cases per 100,000 people. A TAA is known as a weak wall in the upper part of the aorta. The overall mortality related to TAA is high (4, 5).

A serious complication of TAA is the tendency to tear the wall (dissection). The TAAs are frequently detected accidentally when the patients are examined for another illness (6). This condition is reported to be completely asymptomatic; however, chest and back pain are prominent symptoms. Other reported symptoms include hoarseness, cough, dyspnea, or rarely dysphagia resulting from the compression of the mediastinal organ through unruptured aneurysm. When it becomes suddenly ruptured, patients present with sharp, sudden pain in the back and chest and difficulty in breathing (7). If this rupture occurs in the tracheobronchial tree or lung parenchyma, patients are admitted as emergencies and are likely to develop massive life-threatening hemoptysis.

It is estimated that 5% of patients who present with hemoptysis have massive hemoptysis, a fatal condition that may cause airway obstruction and suffocation (4). Massive hemoptysis has been associated with a high mortality rate (80%). Immediate etiological diagnosis and treatment are important for saving the lives of patients (2).

Meanwhile, a TAA can be detected in a routine chest X-ray and be confirmed by means of a lung CT scan with contrast. The aortobronchial tree fistula has been reported in any patients with TAA and a history of previous surgery in the thoracic aorta or even the heart (6, 7).

Conclusion

Surgery of TAA with hemoptysis is associated with a high mortality rate ranging from 25% to 41%. Nonetheless, endovascular stent insertion provides a less invasive approach with reduced morbidity and mortality (7). Given the importance of this issue, any clinician must consider massive hemoptysis as a rare complication of TAA.

Conflict of interest:

The authors declare that they have no competing interest.

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