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Case Report

A RARE CAUSE OF HEMOPTYSIS IN AN ELDERLY PATIENT: ACUTE AORTIC SYNDROME

Abstract

Acute aortic syndrome is a modern term to describe interrelated emergency aortic conditions including aortic dissection, intramural hematoma and penetrating atherosclerotic ulcer. Acute aortic syndrome is a rare disorder, but the incidence is increasing especially in elderly patients. It's known to be associated with chronic hypertension and atherosclerosis. The clinical presentations of patients with acute aortic syndrome are diverse, classically as acute tearing chest pain, although sharp chest pain is the most common presenting complaint. A 75 year-old female patient presented with hemoptysis and chest pain was diagnosed acute aortic syndrome. We discuss the clinical and imaging features of an extremely rare case of acute aortic syndrome with accompanying hemoptysis in conjunction with the literature.

Key Words: Aged; Hemoptysis; Aneurysm, Dissecting/complications; Aortic Aneurysm, Thoracic/complications; Aortic Diseases/complications; Aortic Rupture/complications.

Olgu Sunumu

YAŞLI BİR HASTADA HEMOPTİZİNİN NADİR BİR NEDENİ: AKUT AORTİK SENDROM

Öz

Akut aortik sendrom aort diseksiyonu, intramural hematom ve penetre aortik ülseri içeren acil aortik koşulları tanımlayan yeni bir klinik terimdir. Nadir görülen bir hastalıktır ancak insidansı özellikle yaşlı popülasyonda artış göstermektedir. Akut aortik sendromun hipertansiyon ve ateroskleroz gibi kronik hastalıklarla ilişkisi bilinmektedir. Ani başlayan yırtılma tarzında keskin göğüs ağrısı en sık başvuru şikayeti olarak bilinir. Ancak klinik bulguların çeşitlilik gösterebileceği akıldan çıkarılmamalıdır. Acil servise hemoptizi ve göğüs ağrısı şikayeti ile başvuran 75 yaşındaki kadın hastaya akut aortik sendrom tanısı konulmuştur. Literatürde son derece nadir rastlanan akut aortik sendrom ve hemoptizi birlikteliği olan olgunun klinik bulguları ve radyolojik görüntüleri literatür eşliğinde sunulmuştur.

Anahtar Sözcükler: Yaşlı; hemoptizi; Disekan anevrizma/komplikasyon; Aortik Anevrizma, Torasik/komplikasyon; Aortik hastalıklar/komplikasyon; Aort rüptürü/komplikasyon.

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Introduction

Acute aortic syndrome (AAS) is a life-threathening aortic emergency. It is a recently introduced term to describe non-traumatic acute aortic injuries such as aortic dissection (AD), intramural hematoma (IMH) and penetrating atherosclerotic aortic ulcer (PAAU) (1). The incidence is 3/100,000 and it occurs most frequently in elderly patients; the average age is 63 (2). AAS is characterized by "aortic pain", and a history of underlying severe hypertension is frequently present. Aortic pain has been described as a severe, sudden onset of tearing or ripping migratory chest pain (3). The clinical presentations of patients with AAS are diverse, classically as acute tearing chest pain, although sharp chest pain is the most common presenting complaint. As these symptoms are so non-specific, distinguishing different entities clinically is difficult. Our patient presented with massive episodic hemoptysis and chest pain, and AAS was confirmed with imaging findings. There are published articles in the literature describing aortic dissection and aneurysm presenting with hemoptysis, but hemoptysis with AAS is, to the best of our knowledge, unknown to date.

Case

We present a case of a 75 year old woman who was admitted to the emergency department due to hemoptysis and chest pain. The echocardiography showed pericardial effusion with 8mm thickness. Thorax computed tomography (CT) images revealed a 6x7x6 cm hypodense intramural hematoma with millimetric peripheral calcifications extending along the walls of aortic arch and descending aorta, and reaching to the proximal left pulmonary artery (Figure 1a). Also CT and magnetic resonance imaging (MRI) showed extraluminal contrast enhancement (3*2.5cm) that began posterior to the aortic arch and reached the proximal left pulmonary artery (Figure 1b) and atelectatic area at the left lung lingular segment, and pericardial effusion (Figure 1c). Simultaneously occurring atelectatic segment with chest pain and hemoptysis, in close proximity to an intramural hematoma and possible aortobronchial fistula was considered. Neither an intimal flap nor a false lumen was seen in MRI and CT images. The patient urgently referred to proximate cardiovascular surgical unit and treated surgically.

Discussion

AAS includes aortic dissection (AD), intramural hematoma (IMH) and penetrating atherosclerotic aortic ulcer (PAAU). PAAU of the thoracic aorta was first described by Shennan in 1934 (4). PAAU is defined as an ulceration of atheromatous plaque that has eroded the inner elastic layer of the aortic wall and reached the medial layer. IMH are believed to be caused by a spontaneous hemorrhage of the vaso vasorum into the medial layer. They appear as crescent-shaped areas of increased attenuation with eccentric aortic wall-thickening and displacement of intimal calcifications (5). International Registry of Acute Aortic Dissection (IRAD) reported a review of 464 patients, mean age for all patients was 63 years but women were affected in older ages with a

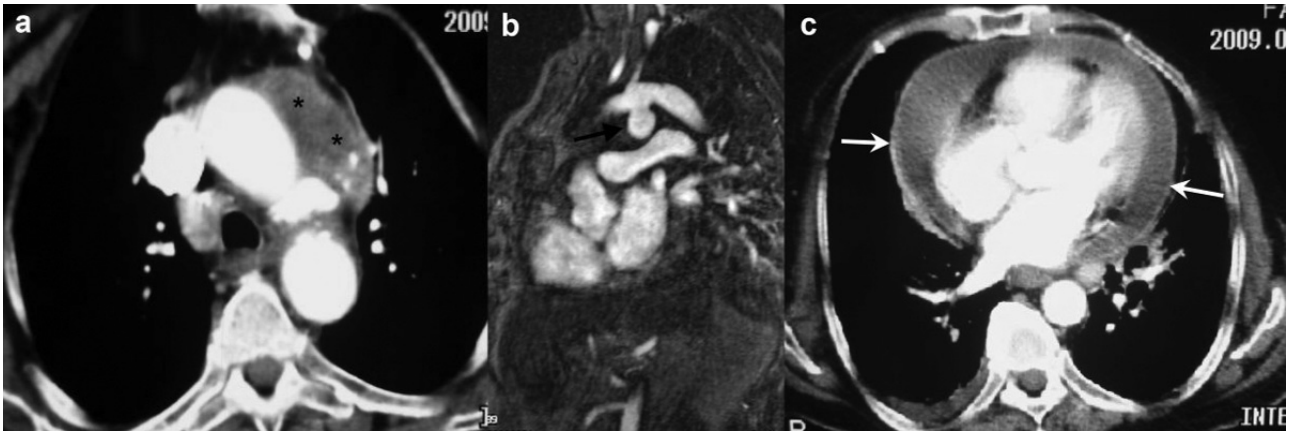

Figure 1— a: Axial contrast CT image *intramural hematoma (IMH)* (black star) **b**; Sagittal T2 weight image *penetrating aortic ulcer* (PAU) (arrow) **c**; Axial contrast CT image pericardial effusion

mean age of 67 years. Two thirds of patients were male, although less frequently affected by acute aortic dissection, women were significantly older than men. Compatible with the literature our patient was 75 year old women (6).

Evaluation of the elderly usually differs from a standard medical evaluation. The elderly also have different, often more complicated health care problems, such as multiple disorders. Diagnosis may be complicated, resulting in delays or missed diagnoses, and sometimes drugs are used inappropriately. PAAU generally affects older patients with atherosclerosis involving the aorta and multiple comorbidities, such as hypertension (HT), diabetes mellitus (DM), heart failure, chronic obstructive pulmonary disease, and chronic renal insufficiency (7). The history of DM and HT for many years, in our case, supports the literature findings. As in our case, patients described in the literature who presented with acute aortic syndromes usually had a similar clinical profile: aortic pain with a coexisting history of hypertension. However, different from the literature, our case had the additional symptoms of chest pain with hemoptysis and was referred to emergency with these complaints. In the literature, thoracic aortic aneurysm with hemoptysis is rare and is thought to be a caused by an aortopulmonary fistula (8).

Liu et al. examined 17 patients with thoracic aortic aneurysm who also had aortopulmonary fistula, and found atherosclerotic changes on the wall of the aneurysm in 8 of those patients. In our case, atherosclerotic plaques were common around the IMH and the limits were not clear, with adjacent atelectatic lung tissue (7). CT and MRI showed an IMH adjacent to the left bronchus. Aortobronchial fistula due to PAAU and IMH was suspected. When imaging findings and clinical manifestations of the patient were evaluated together, the image was interpreted as an aortapulmonary fistula.

AAS and aortobronchial fistula are rare but highly lethal conditions, so the diagnosis is important. Advances in CT make it possible to diagnose acute aortic syndromes easier and faster (1,2).

Consequently, there are defined symptoms of AAS in the literature, but it very rarely occurs with hemoptysis in elderly patients. Early detection of pathology causing hemoptysis results in early intervention, which can prevent deterioration and improve quality of life often through relatively minor, inexpensive interventions. And it must be remembered that the best imaging modality is CT for these highly fatal cases.

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