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Painless left hemorrhagic pleural effusion: an unusual presentation of leaking saccular aortic arch aneurysm

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ÖZET

Ağrısız sol hemorajik plevral efüzyon: Sakküler arkus aorta anevrizma kaçağının nadir bir prezantasyonu

Torasik aort anevrizmalarının çoğu asemptomatik olup, diğer nedenlerle çekilen rutin göğüs radyografilerinde tesadüfen saptanırlar. Sadece, nadir olarak, sıklıkla ciddi ağrı ile başvuruya neden olan hayatı tehdit eden kaçak ve diseksiyon varlığında semptomatik olurlar. Bu yazıda, nefes darlığı, aralıklı öksürük, ateş ve sol taraflı ağrısız hemorajik plevral efüzyonlu 67 yaşında bir erkek olguyu sunuyoruz. Radyografi, bilgisayarlı tomografi ve manyetik rezonans görüntüleme ile arkus aorta transvers bölümü lateralinden yükselen bir sakküler anevrizma ve sol plevral boşlukla ilişkili, yalancı lümenli disseke desendan aort anevrizması saptandı. Olgu, cerrahi tedaviyi kabul etmedi ve kan transfüzyonu ve antihipertansif medikasyon ile konservatif olarak tedavi edildi. Sekizinci günde, fatal şok epizodu nedeniyle kaybedildi. Klinik olarak bronş karsinomunu düşündüren, nefes darlığı, öksürük ve ateşle başvuran nontravmatik hemorajik plevral efüzyonlu yaşlı hastalarda ayırıcı tanıda disekan torasik anevrizmanın yer almasını düşünüyoruz. Tanısal işlem olarak toraks bilgisayarlı tomografisi acilen çekilmelidir.

Anahtar Kelimeler: *Aort anevrizması, hemoraji, plevral efüzyon.*

SUMMARY

Painless left hemorrhagic pleural effusion: an unusual presentation of leaking saccular aortic arch aneurysm

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Most thoracic aortic aneurysms are asymptomatic and are detected by chance on routine chest imaging for some other reasons. Only rarely it is symptomatic due to leak and dissection which is a potentially life threatening event that commonly presents with severe pain. In this report, we present the case of a 67-year-old man who presented with shortness of breath, intermittent cough, fever, and left sided painless hemorrhagic pleural effusion. Further investigation by plain radiography, computed tomography and magnetic resonance imaging revealed a saccular aneurysm arising from the lateral aspect of the mid-transverse arch of the aorta, along with a dissecting descending aortic aneurysm with false lumen communicating with left pleural space. The patient refused any surgical procedure and was treated conservatively with blood transfusions and anti hypertensive medication. On the 8th day patient finally succumb to a fatal episode of shock. We suggest dissecting thoracic aneurysm be included in the differential diagnosis of non-traumatic hemorrhagic pleural effusion in an elderly patient presenting with dysnea, cough and fever, which otherwise suggest the clinical diagnosis of bronchogenic carcinoma. Computed tomography of the chest should be immediately performed as the diagnostic procedure of choice.

Key Words: *Aortic aneurysm, hemorrhage, pleural effusion.*

CASE REPORT

A 67-year-old known hypertensive man was admitted to the chest medicine department with complaints of new onset shortness of breath, intermittent cough, and fever without chills. There was no history of sputum, hemoptysis, and chest pain or weight loss. The patient also denied any history of trauma, cyanosis, jaundice or any secondary complication of hypertension. His blood pressure was 156/92 mmHg, and pulse rate was 68 beats/minute. On physical examination there was dullness to percussion and reduced breath sounds at left lung base. There was also decreased movement and diminished vocal fremitus on left side. Cardiac examination did not reveal any abnormalities and his electrocardiogram was also unremarkable.

Biochemical analysis demonstrated normal cardiac enzyme level and presence of normochromic and normocytic anemia with hemoglobin of 10 g/100 mL. Chest X-ray was done, which shows massive left sided effusion and an abnormal convex opacity in the aortopulmonary area with right mediastinal shift (Figure 1A). The patient was put in a propped up bed with moist O_2 and IV fluid with cephalosporin and deriphylline was started.

A left thoracocentesis was performed, and it revealed thin, grossly hemorrhagic, reddish pleural fluid that did not clot. Fluid cytology and biochemistry shows plenty of RBCs with elevated neutrophil count. No organisms were identified on Gram's stain or culture, nor were malignant cells identified by cytology.

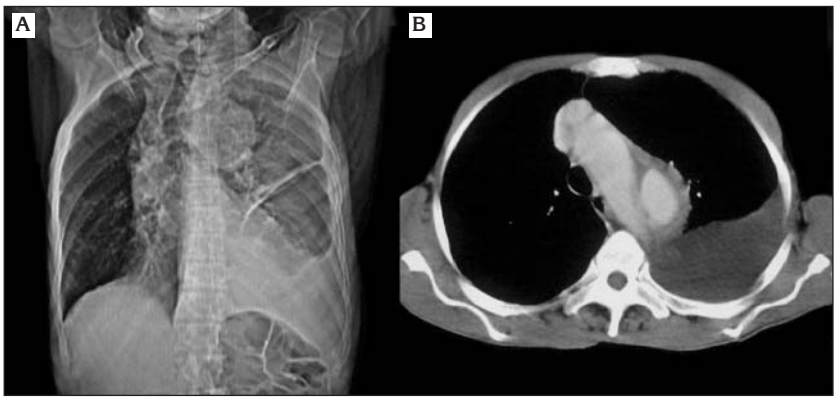

Figure 1. A. Frontal scout computed tomography image shows massive left sided pleural effusion and an abnormal convex opacity in the aortopulmonary area with right mediastinal shift. B. Computed tomography axial image at the level of aortic arch shows the presence of a saccular aneurysm arising from the lateral aspect of the mid-transverse arch of the aorta, along with a left sided pleural effusion.

Computed tomography (CT) scan revealed a saccular aneurysm arising from the lateral aspect of the mid-transverse arch of the aorta, along with a dissecting descending aortic aneurysm (Figure 1,2). An intimal flap was seen separating the true lumina and false lumina, which communicated with the left pleural space. The presence of hyperdense fluid in the left pleural space signified a leaking aortic aneurysm. Magnetic resonance imaging (MRI) was done which confirm the nature of lesion (Figure 3).

Two units of packed RBCs were administered and the patient was treated with propranolol. Cardiothoracic surgery consultation was done which emphasized need for aggressive preoperative management of arterial pressure and prompt surgical intervention. However, patient refused any surgical procedures. On the 8th day of admission, patient condition deteriorated and all resuscitative measures failed with patient dying within four hours of beginning of fatal episode of shock.

DISCUSSION

Aneurysm is a localized or diffuse dilation of an artery with a diameter at least 50% greater then the expected size of the artery (1). In the ascending aorta, a diameter larger than 4 cm while in the descending aorta, a diameter greater than 3 cm is regarded as an aneurysm (2). In a true aneurysm, all of the components of vessel wall are present, whereas a false aneurysm has an incomplete wall. The shape of aneurysm may be fusiform (involve the entire circumference of the aortic wall) or saccular (involve only a portion of the wall).

Aortic dissection is characterized by dissection of blood along the laminar planes of the aortic media, with the formation of a blood-filled channel within the aortic wall. It commonly occurs in two groups of patients (3). The first group consists of older men with long history of hypertension. The second major subgroup consists of younger patients with a systemic or localized abnormality of aortic connective tissue that inc-

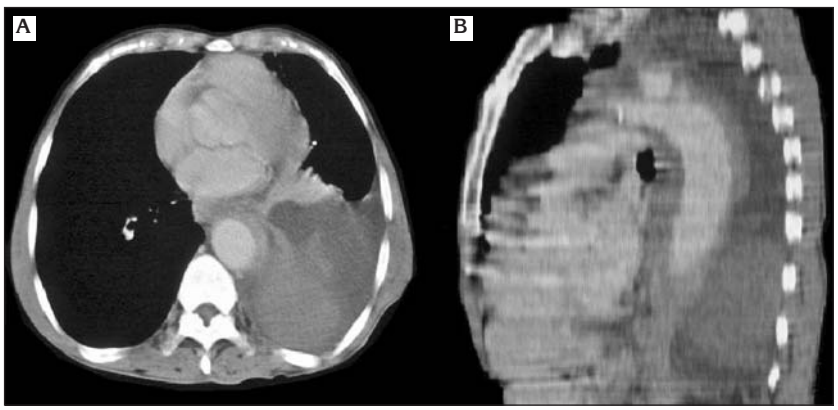

Figure 2. A. Axial computed tomography image at the level of left atrium shows dissecting descending aortic aneurysm with false lumen communicating with pleural space along with leaking hyperdense hemorrhagic fluid in pleural space. B. Sagittal reconstructed computed tomography image shows the presence of saccular aneurysm and dissecting descending aortic aneurysm.

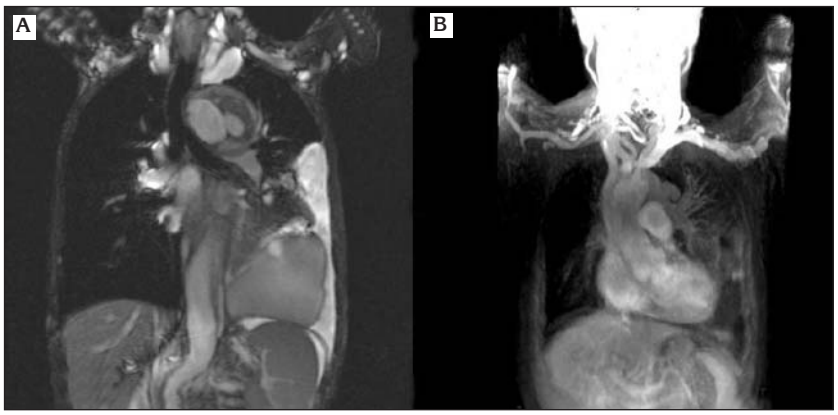

Figure 3. A. Coronal T2W TrueFISP magnetic resonance image demonstrated a saccular aneurysm arising from aortic arch with variable signal intensity fluid in left pleural space signifying hemorrhage in various stages. B. Time of flight magnetic resonance angiography again demonstrated a saccular aneurysm arising from aortic arch.

lude aortic coarctation, a bicuspid aortic valve, and disorders of collagen, including Marfan's syndrome, Ehlers-Danlos syndrome, and degeneration of the aortic media.

Most thoracic aortic aneurysms are asymptomatic and are detected by chance on chest X-ray (4). Few cases present with sudden death due to acute rupture. In patients who survive the initial tear, severe pain is a classic presenting symptom. Pain is tearing in nature and located either in the anterior chest, which is suggestive of an ascending aortic dissection, or in the posterior chest or back, which is suggestive of a descending aortic dissection (3). Compressive symptoms like hoarseness of voice, stridor, cough, wheeze, left diaphragmatic palsy, dysphagia, are also reported as presenting symptoms (4). Painless dissection was described only in a minority of the patients, and most of these presented with congestive heart failure, stroke, or syncope (5).

Hemorrhagic pleural effusion may occur in various conditions. The different diagnosis includes traumatic injury, pulmonary infarction, tuberculosis, pulmonary thromboembolism, and pleuropulmonary malignancy. It could also be a presenting sign of acute aortic dissection that is extremely rare (6). Besides our case, only few cases have been reported in literature with such presentation.

Acute aortic dissection is a potentially life-threatening condition requiring immediate assessment. Prompt and accurate diagnosis is required to initiate appropriate surgical repair or medical treatment. Without immediate treatment, the outcome is often fatal with more than 50% of patients dying in the first 48 hours (6). However, misdiagnosis still remains an unresolved problem because of variable and unpredictable clinical presentation.

In the past, angiography was the only accurate examination for evaluating the aorta. Currently, non-invasive radiologic assessment of patients with techniques such as spiral CT, MRI, and transesophageal echocardiography (TEE) is the cornerstone of the diagnostic process (7). A chest X-ray is usually the initial examination performed and reveals pathologic findings such as abnormal aortic contour, widening of mediastinum, displaced intimal calcification, and pleural effusion (8). A contrast-enhanced CT scan currently is the method of choice for the diagnosis and management of patients with suspected dissection because of a diagnostic accuracy comparable with aortography, wide availability, ease of performance, and examination speed (7). Due to continued improvements in technique, MRI and TEE is also being performed in increasing numbers of patients with suspected aortic dissection. Angiographic evaluation is now reserved for only those patients in whom the previously noted studies are equivocal or when additional anatomic information is required especially for those in whom surgery is planned (7). Based on current recommendations most of the uncomplicated descending aortic dissection are treated medically. Surgical approach is reserved for patients with proximal dissection or for cases of distal dissection complicated by rupture, compromise of a major vessel, or recurrent pain (7,9,10).

In summary, our case highlights the unpredictable clinical presentation of a potentially life threating condition, dissecting aortic aneurysm. Although in an elderly male who present with X-ray evidences of massive pleural effusion and hilar mass, bronchogenic carcinoma comes as a most important differential diagnosis, but this case study suggest that aortic dissection, though rare should be kept in mind as a differential diagnosis in these situations.

CONFLICT of INTEREST

None declared.

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