Journal of Cardiovascular and Thoracic Research, 2011, 3(4), 129-131
doi: 10.5681/jcvtr.2011.028
http://jcvtr.tbzmed.ac.ir

A Case of Aortic Aneurysm Hospitalized as Acute Coronary Syndrome

Aytekin Guven[1*], Talantbek Batyraliev[2], Yuri Pya[2]

[1]*Department of Cardiology, Başkent University School of Medicine, Konya, Turkey*
[2]*Department of Cardiology, Sani Konukoglu Medical Center, Gaziantep, Turkey*

ARTICLE INFO

Article Type:
Case Report

Article History:
Received: 4 Nov 2011
Accepted: 6 Dec 2011
ePublished: 28 Dec 2011

Keywords:
Acute Coroner Syndrome
Saccular Aortic Aneurysm
Dissection

ABSTRACT

Saccular type of thoracic aortic aneurysm is a rarely seen phenomenon. Here, we present a case of saccular-type aortic aneurysm admitted to coronary care unit with a diagnosis of acute coronary syndrome. A 63-year-old woman presented to our clinic with chest pain lasting for 2-3 hours. Because her chest pain persisted despite intensive medical treatment, she underwent coronary angiography. Coronary arteries appeared normal but a saccular type aneurysm of ascending aorta was detected on aortography. The patient underwent urgent surgery. The aneurysmal segment was resected and tube graft inserted. The patient was discharged without any postoperative complication.

Introduction

Aortic dissection is the most frequent catastrophic disorder involving the aorta, occurring in estimated 10-20 patients per million people per year. More than 1/3 of patients are older than 40 years. Acute aortic dissection occurs two-three times more frequently in men between the ages of 50-70 years than in women of the same age. It's rarely seen in young patients except for those with familial predisposition, Marfan syndrome, other connective tissue disorders, bicuspid aortic valve or coarctation of aorta. Below age 40 years, there is a nearly equal male to female distribution, with half the dissections in women occurring during the pregnancy.[1]

In this paper, we report a case of a patient with a saccular type aneurysm of the ascending aorta accompanied by a dissection without obvious etiology or underlying cardiovascular risk factors who presented with the somewhat unusual clinical picture of an acute coronary syndrome.

Case Report

A 63-year-old woman applied to our clinic with sudden chest pain persisting for 2-3 hours. Historically, she was suffering from intermittent retrostrenal chest pain radiating to her arms bilaterally for the last 3 months and her chest pain increased in intensity for the last 2-3 hours. On physical examination, her blood pressure was 130/80 mm Hg, and pulse 92/min and regular. Physical findings were all normal. On her resting 12-lead electrocardiogram (ECG), there was a wide spread T wave inversion. Transthoracic echocardiography (TTE) examination was normal except for minimal aortic regurgitation. On laboratory examination, cardiac enzyme levels were not elevated. The patient was admitted to coronary care unit with the initial diagnosis of acute coronary syndrome. Parenteral nitrate infusion was administered in addition to aspirin, low molecular weight heparin and beta blocker. The patient's chest pain as well as T wave inversion on ECG persisted despite intensive medical treatment. Repeat cardiac enzyme levels were still within normal limits. Upon persistence of the patient's chest pain, she was taken to the catheterization laboratory for coronary angiography. The coronary arteries appeared normal. The catheter, however, was seen to lodge repeatedly somewhere in the ascending aorta during the procedure. Aortography, therefore, was also performed to see the anatomical structure of ascending aorta. A saccular type aneurysmal dilatation of 3x5 cm size was detected in ascending aorta (Figure 1). Because the patient was still suffering chest pain, cardiovascular surgical consultation was obtained with the patient subsequently undergoing urgent surgery. At surgery, an aortic dissection extending from proximal aortic segment 2 cm above the aortic valve to the brachiocephalic trunk, including the aneurysmal sac, was detected. Dissection of the proximal aorta was repaired and aneurysmal segment resected (Figure 2). Then, end-to-end anastomosis of proximal and distal segments was performed by using a tubular graft (supracoronary tube graft, 30 mm, Hemashield).

***Corresponding author:** Aytekin Guven (MD), Tel.: +90 332 2570606, Fax: +90 332 24768 86, E-mail**:** aytekinguven@hotmail.com

Histopathological examination of the resected material revealed cystic medial necrosis. The patient was discharged on the 10th day without any postoperative complication.

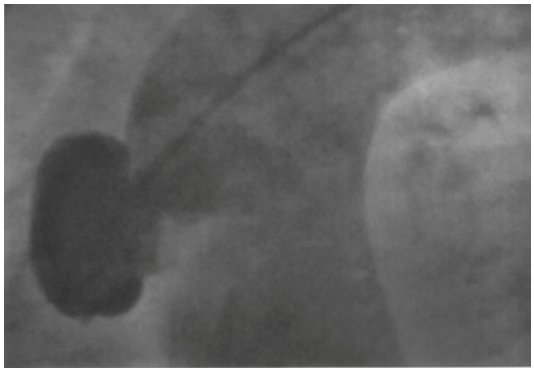

Figure 1. Aortography in right anterior oblique projection showing a saccular type aneurysm of the ascending aorta.

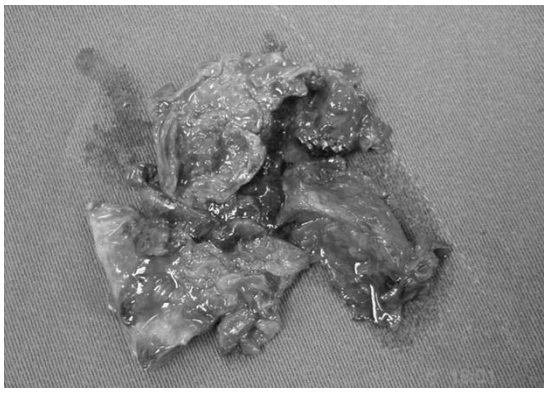

Figure 2. Aneurysmal segment of the ascending aorta resected surgically.

Discussion

Atherosclerosis is the most common cause of aneurysmal disease of the aorta; thus, aneurysms are more common in men than in women (5:1) and rare in patients who are younger than 50 years of age.[2] Less common cause include congenital defects of the arterial wall, hypertension, tobacco use, familial tendency, arteritis, sudden deceleration, entrapment, and trauma.[3] Marfan syndrome and Ehlers-Danlos syndrome type IV are well-known disorders characterized by the occurrence of aortic aneurysm or dissection at an early age.[4] There was neither history of trauma, tobacco use nor any findings consistent with Marfan syndrome in our patient. Serological test for syphilitic aortic was also negative. Cystic medial necrosis was detected upon pathological examination of the aneurysmal sac.

Most aneurysms of the thoracic aorta are asymptomatic, being incidentally discovered on chest radiography. When symptoms develop, the aneurysm is usually large enough to encroach on surrounding structures and cause chest pain, back pain, dyspnea, dysphagia, cough, hoarseness, or stridor.[5] Our patient was suffering from atypical chest pain for a few months and finally appeared at our clinic with sudden onset persistent severe chest pain. Because she did not suffer from a marked back pain, we did not suspect aortic dissection initially. But, upon persistence of the pain, despite normal cardiac enzyme levels and intensive medical treatment for presumed acute coronary syndrome, coronary angiography was performed. Since the catheter was repeatedly going into a portion of the ascending aorta during the procedure, aortography was also performed and a saccular type aneurysm detected. Alternatively, had coronary arteriography not been performed, CT scanning particularly with intravenous (IV) contrast enhancement, MRI or transesophageal echocardiography might also have non-invasively revealed the thoracic aortic aneurysm.[6-8] We could not discern the aneurysmal sac on TTE because it was supravalvular in location and suprasternal views were not routinely employed.

The prognosis of untreated thoracic aortic aneurysm is poor, with 3-year survival rates as low as 25%. The cumulative risk of rupture is 20% after 5 years.[9,10] Factors that seem to worsen the prognosis are female gender, diastolic hypertension, size greater than 6 cm, traumatic etiology as well as associated coronary and cerebrovascular disease. Our patient underwent urgent surgery because she presented with an acute clinical picture and the aneurysm was accompanied by aortic dissection.

Conclusion

Saccular type aneurysm is only rarely accompanied by aortic dissection, but if left untreated may be fatal. In patients, therefore, presenting particularly but not exclusively with back pain and diagnosed as acute coronary syndrome, a diagnosis of aortic dissection should always be kept in mind. In that case, urgent surgical treatment will be life sawing.

Conflict of interests: No conflict of interest to be declared.

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