The Heart Surgery Forum #2013-1018
16 (5), 2013 [Epub October 2013]
doi: 10.1532/HSF98.20131018

Online address: http://cardenjennings.metapress.com

Huge Aortic Pseudoaneurysm Arising from the Aorta-Saphenous Vein Graft Anastomosis after Coronary Artery Bypass Grafting

Muslum Sahin, MD,[1] Mehmet Vefik Yazicioglu, MD,[1] Sabit Sarikaya, MD,[2] Mehmet Muhsin Turkmen, MD[1]

Departments of [1]Cardiology and [2]Cardiac Surgery, Kartal Kosuyolu Education and Research Hospital, Istanbul, Turkey

ABSTRACT

Pseudoaneurysm of the aortic root is a rare condition and potentially fatal if not treated. It may occur in different etiologies. In this case, we aim to show an aortic pseudoaneurysm arising from the aorta-saphenous vein graft anastomosis.

CASE REPORT

A 65-year-old woman with hypertension and diabetes mellitus presented with chest pain. Two years before this presentation, she had undergone coronary artery bypass grafting at a different center.

A clinical examination was unremarkable. The patient's electrocardiogram (ECG) had nonspecific ST-T changes. Chest radiograph showed mediastinal widening. Coronary angiography was performed because of a positive exercise ECG test. A right coronary angiogram demonstrated that occlusion of the proximal right coronary artery (RCA). Angiogram and aortography of the aorta to RCA saphenous vein graft demonstrated that saphenous vein graft patent but there was aneurysm arising from the aorta-saphenous vein graft anastomosis (Figure 1). A contrast-enhanced computed tomographic (CT) scan of the chest revealed a large false aneurysm around the aortic root, with a large communication between the aorta and the aneurysm (Figure 2). A 3-dimensional reconstruction of the CT images shows the relationship of the pseudoaneurysm (PsA) to aorta and aorta to RCA saphenous vein graft (Figure 3).

DISCUSSION

PsA of the ascending aorta is a potentially fatal complication after thoracic surgical procedures, usually related to aortic cannulation, the needle vent site, the proximal site of venous or arterial graft anastomosis, the suture line of aortotomy, or the aortic clamp site [Tochii 2011]. Infection, connective tissue disorders, preoperative hypertension, aortic cannulation, blowout of the aortotomy, vasculitis, and prior aortic or cardiac surgery are important risk factors for PsA [Almeida 2008]. But etiology of the aneurismal formation still was not clear.

PsA of the ascending aorta is usually asymptomatic; however, sometimes non-typical symptoms such as a pulsatile mass around the sternum, chest oppression, discomfort, dysphagia, or stridor present [Razzouk 1993]. Chest radiograph, angiography, and transesophageal echocardiography can be use for diagnosis of PsA, but CT is the most important diagnostic modality.

Prompt therapy is indicated before catastrophic complications occur [Tochii 2011]. Surgery was usually the first choice for treatment in the past, but currently thoracic endovascular aneurysm repair has become a primary treatment modality with favorable early outcomes compared with surgical repair [Karimi 2012]. In our case, there was not enough distal distance for endovascular graft stenting. Percutaneous closure of the ostium of the PsA was considered, but not attempted, because it was blocking the blood flow in the aorta to RCA saphenous vein graft. Therefore, we suggested that surgical treatment.

Received February 2, 2013; received in revised form September 16, 2013; accepted September 23, 2013.

Correspondence: Dr. Muslum Sahin, Department of Cardiology, Kartal Kosuyolu Education and Research Hospital, 34846 Kartal, Istanbul, Turkey; 90 216 500 1 500; fax: 90 216 459 63 21 (e-mail: sahinm78@yahoo.com).

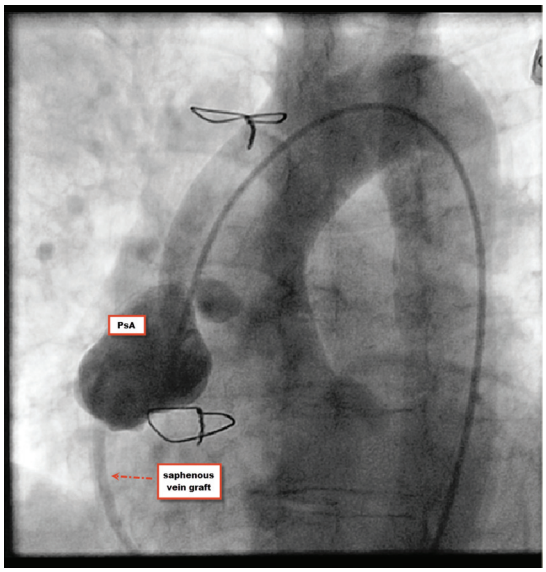

Figure 1. The appearance of pseudoaneurysm (PsA) with aortography.

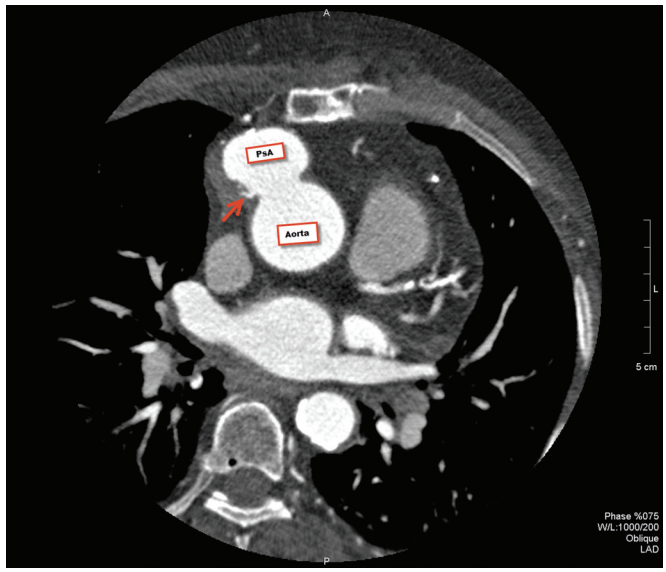

Figure 2. Axial computed tomographic view of pseudoaneurysm (PsA); arrow shows aorta to right coronary artery (RCA) saphenous vein graft.

CONCLUSION

PsA of the ascending aorta is rare and potentially fatal if not treated. Although its treatment is still controversial, ascending aortic PsA is traditionally treated by surgery. Endovascular treatment of PsA is a less invasive technique and an alternative to surgical repair in favorable cases.

REFERENCES

Almeida R, Pinho T, Oliveira NP, et al. 2008. A case of acute heart failure due to giant aortic pseudoaneurysm with fistulization to the right ventricle after a modified Bentall operation. Eur J Echocardiogr 9:716-9.

Karimi A, Walker KL, Martin TD, et al. 2012. Midterm cost and effectiveness of thoracic endovascular aortic repair versus open repair. Ann Thorac Surg 2012; 473-9.

Razzouk A, Gundry S, Wang N, et al. 1993. Pseudoaneurysms of the aorta after cardiac surgery or chest trauma. Am Surg 59:818-23.

Tochii M, Takagi Y, Hoshino R, et al. 2011. Pseudoaneurysm of ascending aorta 16 years after coronary artery bypass grafting. Ann Thorac Cardiovasc Surg 17:323-5.