Twin aneurysms of the subclavian artery due to atherosclerosis: A case report

H Yasa, L Yılmaz, U Yetkin, T Göktoğan, C Ozbek, A Gurbuz

Citation


Abstract

True aneurysm of the subclavian artery is extremely rare. Whereas twin aneurysms of the subclavian arteries are not seen in the literature in our research. The most common aneurysms of an subclavian artery aneurysm, those associated with thoracic outlet syndrome, and posttraumatic aneurysm, atherosclerosis is the most common cause. Syphilis, tuberculosis, and cystic medial necrosis are less often the cause. These aneurysms can rupture, thrombose, embolize, or cause symptoms by local compresion. Surgical treatment is generally indicated.

A case of a surgically treated, asymptomatic, atherosclerotic twins aneurysm of the proximal and second right subclavian artery is presented.

INTRODUCTION

Aneurysms of the subclavian artery account for % 1 of all peripheral aneurysms(1).

Aneurysms of the subclavian artery are cause by blunt or penetrating trauma or extrinsic vascular compression due to thoracic outlet synrome(2,3). Other less commonly reported causes of subclavian aneurysm are atherosclerosis, enfective diseases (syphilis, tuberculosis)(4,5). Atherosclerosis, typically seen in elderly patients, is the most common etiology of true subclavian aneurysms(6,7).

Atherosclerosis disease accounts for over 50% of subclavian an innominante artery aneurysms. Patients are typically elderly and the aneurysm is often detected on imaging study done for unrelated purposes. When symptoms are present, they may include the presence of a pulsatile mass, upper extremity pain at rest or with exertion, distal ischemia, transient ischemic attacks, or stroke.

We present a large with twin aneurysms in the right subclavian artery who was treated aneurysmectomy and truncus brachiocephaliius to axiller artery bypass with 8 mm PTFE graft interposition.

Subclavian artery aneurysms are very rare. But twins subclavian artery aneurysms are not seen in the literature. For this reason we want to present that very interest case.

CASE REPORT

A 44-year- old man had a history smoking and in a good health underwent routine phsical examination, which demonstrated subclavicular pulsatil mass. And the patient was referred our clinic by their family doctor. He had no attributable symptoms. Phsical examinations revealed normal carotid artery, abominal, and upper and lower extremity pulses without aneurysm or bruits an was otherwise unremarkable. Vascular doppler ultrasonography demonstrated twins 3 cm, 6 cm proximal and mid subclavian artery aneurysm(SAA)(Figures 1 and 2).
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Arch aortography and coronary arteriography was performed. Aortography showed normal arteriel anatomy with twins aneurysm begining initial subclavian artery and ending to the truncus brachiocephalicus artery (Figure 3). Coronary arteries was founding as a normal. Their sizes was accounted 3 cm and 6 cm.

The patient underwent elective repair via mini j right sternotomy and supraclavicular incision(Figure 4).

A dense inflammatory process was noted around the twin aneurysms. Truncus brachiocephalus, right common carotid artery and subclavian artery was explored. The proximal subclavian artery was unsuitable for anastomosis side because of the initial subclavian artery in the aneurym area too(Figure 5).
With a side-biting clamp placed on the truncus brachiocephalicus below the vessel, the subclavian artery origin area with 8 mm synthetic graft end to side technique was anastomosed. The aneurysms were resected, and the more distal subclavian artery was mobilized and implanted end to end onto the axillary artery.

Aneurysm and thrombus culture results were negative. Pathological review was consistent with an atherosclerotic aneurysm. Normal left upper extremity pulses were established, and the patient had an uneventful recovery. He was discharged on the sixth postoperative day and has remained well through follow-up 1 month later.

**DISCUSSION**

Treatment of SAA is usually surgical. Classic treatment consists of resection of the aneurysm and insertion of a prosthetic graft or direct end-to-end anastomosis. Valentine Mott is acknowledged to have first attempted surgical treatment for subclavian artery aneurysm in 1818. Though Banson has been widely credited with the first report of successful resection and grafting for subclavian aneurysm (14, 15).

A subclavian aneurysm can be asymptomatic, presenting as a pulsatile supraclavicular mass, or become complicated by an procedure distal embolizations, thrombosis with ischemia of the limb, compression of adjacent structures, or rupture. Brachial plexopathy can occur, and Horner's syndromes is not infrequent (16). Rarely, patients may be diagnosed with signs and symptoms of rupture, thrombosis, or cerebral and upper extremity emboli (17, 18). In our case, the patient was asymptomatic, and the aneurysms were found on a follow-up examination for a prior surgery.

Aneurysms of the innominate and subclavian artery account for only 1% of peripheral artery aneurysms and are typically seen in patients with atherosclerosis, thoracic outlet syndrome, aberrant anatomy, or as a result of trauma (19). Infective diseases (such as syphilis and tuberculosis) were the most common causes earlier in this century. A few cases of mycotic SAA have also been reported (17). Marfan syndrome and cystic medial necrosis have been more recently appreciated causes of SAA, representing about 10% of all cases. Rarely, congenital aneurysms occur, and SAA has been reported associated with Turner's syndrome (20).

Aneurysms have more often reported on the right side than left (52% vs 37%), with bilateral aneurysms occasionally observed (12%). Male patients outnumber female patients by a 2:1 ratio (1). When approaching a patient with initial right SAA and intrathoracic SAA, it is important to be prepared for innominate clamping and repair. We used mini-j sternotomy for good appearance of innominate artery and resection of the aneurysm and added supraclavicular incision for distal anastomosis.

The introduction of endovascular surgery in this field has opened the possibility for less aggressive treatment, with lower morbidity and mortality, and good outcome with respect to patency (19, 20). The patient was referred for endovascular therapy but was not appropriate for endovascular treatment by the endovascular group.

Modern surgical results with SAA and other procedures for disease of the supraaortic trunks are generally quite good, and an operative mortality rate of less than 5% should be anticipated for uncomplicated cases. Thus most reasonably health patients with SAA should be offered surgical or endovascular treatment. Because patients with atherosclerotic SAA commonly have or have development of aneurysmal disease elsewhere, careful and complete evaluation and follow-up are of critical importance. One study in the related literature proposed treatment of right twins subclavian artery aneurysms by an innominate artery - axillary artery graft bypass.
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CORRESPONDENCE TO
Op. Dr. Haydar YASA IAEAH KDC Kliniği Yesilyurt–IZMIR / TURKEY Tel: +90 505 2204208 Fax: +90 2322434848 e-mail: hyasa20@yahoo.com

References
Author Information

Haydar Yasa
Department of Cardiovascular Surgery, Turkey

Levent Yılmaz
Department of Cardiovascular Surgery, Turkey

Ufuk Yetkin
Department of Cardiovascular Surgery, Turkey

Tayfun Göktoğan
Department of Cardiovascular Surgery, Turkey

Cengiz Ozbek
Department of Cardiovascular Surgery, Turkey

Ali Gurbuz
Department of Cardiovascular Surgery, Turkey