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SHORT REPORT

Bilateral Spontaneous and Isolated Dissection of the External Iliac Arteries: Report of A Case

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Spontaneous dissection of the external iliac artery without involvement of the aorta is extremely rare, especially, if bilateral. We report a case of a 41 year-old man complaining of sudden onset left lower limb and groin pain. Digital subtraction angiography showed dissection of both external iliac arteries. Patient was initially managed with medical treatment consisting of heparin and β blocker. One week later his symptoms worsened. Endovascular treatment was not deemed appropriate since the dissection involved long segments of both arteries. The patient underwent aortobifemoral bypass by using a Dacron Y graft and remained free of symptoms with good distal pulses 2 months after surgery. To the best of our knowledge, this is the second reported case of bilateral and spontaneous external iliac artery dissection.

Keywords: Dissection; Iliac artery; Spontaneous; Limb ischemia.

Introduction

Acute dissection of the aorta is a vascular surgical emergency. The majority of dissections originate in the thoracic aorta. Primary spontaneous dissection of arteries other than the aorta and the carotid is a relatively rare condition.¹ The most common arteries involved are the renal, coronary, and pulmonary arteries.² Spontaneous dissection of the external iliac artery is extremely rare, especially, if there is bilateral involvement. Only a few patients with bilateral and spontaneous lesion have been previously reported.³ The etiology and management of iliac dissection is discussed.

Case Report

A 41-year-old man was admitted due to sudden onset severe pain localized to the left lower limb and groin for 1 h. On physical examination, the left lower limb

was ischemic with no palpable pulses. The right lower limb was not ischemic, however, pedal pulses were absent. He had no other systemic symptoms and signs. Past medical history did not reveal conditions such as connective tissue disorders, hypertension, diabetes, intermittent claudication, cardiac disease, arrhythmia, trauma, intervention and drug therapy. Patient denied any vigorous exercise. All laboratory examinations were normal. Leg ischemia and pain resolved within 20 min, and distal pulses became palpable. Ankle-brachial index on the left was found to be 0.7, and angiography was planned. Digital subtraction angiography demonstrated dissection of both external iliac arteries (Figs. 1 and 2). A dynamic enhanced computed tomography scan (CT) and echocardiography demonstrated no evidence of dissection or aneurysm of the thoracic and abdominal aorta.

Patient was managed with medical treatment including low molecular weight heparin and β blocker. One week later, patient complained of rest pain. Ankle-brachial index was found to be 0.5 on the left, and 0.8 on the right. The second angiography revealed that the dissection has progressed to common femoral artery on the left side (Fig. 3). Endovascular treatment was not deemed appropriate since the dissection involved long segments of both arteries. The patient

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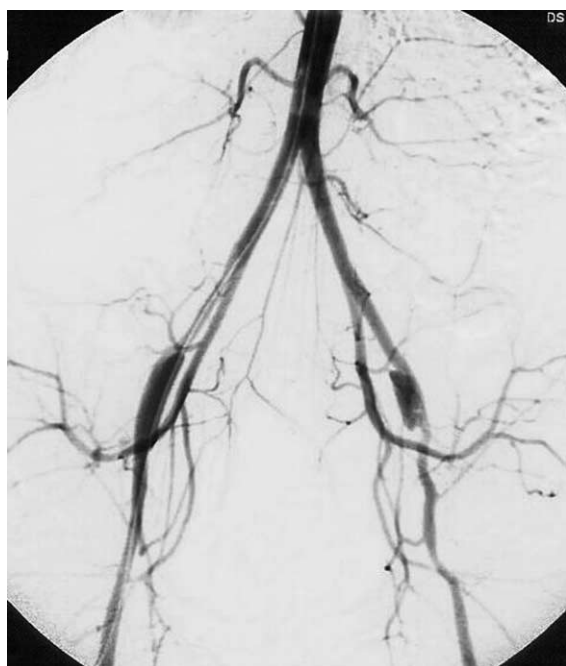


Fig. 1. Digital subtraction angiography showing bilateral external iliac artery dissection.

underwent aortobifemoral bypass by using a Dacron Y graft. Proximal end of the graft was anastomosed to the aorta in an end-to-side fashion, and the distal ends were anastomosed to the common femoral arteries just proximal to the orifice of deep femoral artery in an end-to-end fashion. Both common femoral arteries



Fig. 2. Digital subtraction angiography showing external iliac artery flap caused by dissection.

were ligated proximal to the anastomotic sites to prevent distal progression of dissection (Fig. 4). No other intervention was performed for the open dissected segments. Postoperatively, palpable pedal pulses, and ankle-brachial index of 1.0 on the left and 1.1 on the right side were obtained. The patient made an uneventful recovery and was discharged home 7 days after the operation. Patient remained free of symptoms with good distal pulses 2 months after surgery. Patient will be followed to detect possible development of iliac artery dilatation or aneurysm.

Discussion

The etiology of spontaneous dissection of iliac arteries is usually related to connective tissue disorders, fibromuscular dysplasia or atherosclerosis. De Gallo and associates reported a highly trained biker, who presented with a dissecting aneurysm of the external iliac artery.⁴ Similarly, Cook and associates reported³ a series of highly trained athletes who presented with dissection of the external iliac artery. These authors proposed repetitive trauma secondary to hypertrophic muscles or adaptive hypertension of vigorous exercise to be a possible explanation for this condition. The relationship between spontaneous iliac dissection and fibromuscular dysplasia is well documented in the case reports of Luck, Patel and Burri.⁵⁻⁷

In this case, the patient had no history of arterial intervention, trauma or excessive training. Therefore, iatrogenic and traumatic injury was excluded as the etiology of the dissection. We believe that atherosclerosis did not play a role as an etiologic factor, since the operative and the angiographic findings did not reveal any evidence of atherosclerotic involvement. Finally, our patient had no signs or symptoms suggestive of connective tissue disorders. Pathologic and immunologic examinations were nondiagnostic in our case. Histopathological examination of biopsy specimen obtained from the common femoral artery did not reveal any findings consistent with either inflammation, infection or atherosclerosis.

The natural history of this condition is not well known. Patients can remain asymptomatic,⁸ present with intermittent claudication or ischemia as in this case, or develop aneurysmal dilatation of the involved segment. Of note, one of the most frequent symptoms is groin pain as in our patient.^{9,10}

The best treatment of this condition is not clear. Spontaneous healing of a traumatic iliac artery dissection has been reported in an asymptomatic patient.¹¹ Cook and associates reported a highly trained athlete with bilateral external iliac artery



Fig. 3. Second digital subtraction angiography showing the progression of dissection.

dissection who was treated conservatively. Asymptomatic patients with normal iliac artery size and ankle-brachial index may be treated conservatively. Surgical treatment, including bypass and interposition grafting, is currently the preferred approach. Endovascular approach with stent placement is an evolving treatment option, however, its long term durability is still unknown.



Fig. 4. Intraoperative view of dissected femoral artery at the level of distal anastomosis.

The reason for surgical intervention was limb ischemia causing rest pain in this case. Although the sizes of dissected iliac arteries were normal in our case and no enlargement was observed within 1 week, residual dissected segments carry the risk of aneurysmal dilatation and rupture. Therefore, β blockers should be given and the patient should be closely followed-up with special attention on the size of the iliac artery by means of ultrasonography or CT scan.

Spontaneous dissection of the iliac artery is a very rare condition and should be considered in the differential diagnosis of young patients presenting with ischemic symptoms and groin pain who are otherwise healthy. Treatment should be individualized until a consensus could be achieved in the future by the review of reported cases.

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