Medical Case Reports and Short Reviews

CASE REPORT

A Case Report on Incidental Finding of Asymptomatic Isolated Bilateral Common Iliac Artery Dissections During Work-Up for Abdominal Pain

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Abstract

We present a case of 88-year-old woman with incidental finding of isolated bilateral iliac artery dissection. Patient presented to emergency department with diffuse epigastric abdominal pain, which ultrasound revealed uncomplicated cholestasis. Computed tomography showed dissection in the bilateral iliac arteries without aortic dissection. Patient remained asymptomatic and endorsed no signs of limb ischemia. Management was conservative and patient was discharged with beta blockers, statin and aspirin and instructed to follow-up closely to monitor the disease progression.

Keywords: Hypertension, Atherosclerosis, Iliac artery dissection, pregnancy, CT, conservative management

Introduction

Spontaneous isolated iliac artery dissection (IAD) is a rare medical condition where arterial dissection occurs in common iliac artery [1]. Only a few numbers of cases have been previously reported. Although nature of the disease can be asymptomatic, arterial dissection can impose catastrophic effects and ultimately leads to patient's death [1]. Although exact underlying etiologies of IAD are still unclear, previous studies have proposed several etiologies such as traumatic causes, hypertension, pregnancy, atherosclerosis, iliac artery catherization fibromuscular dysplasia, connective tissue disorders such as Ehlers-Danlos syndrome, Marfan syndrome, cystic medial degeneration and Erdheim-Gsell [1, 2].

Reported cases have shown that IAD could mimic arterial limb ischemia presenting with symptoms such as acute onset pain, paleness, paresthesia, pulselessness and poikilothermia [2]. Likewise, past studies have shown IAD could remain asymptomatic for years and will only be discovered incidentally during undergoing diagnostic studies for other co-existing conditions [1, 2].

Case Presentation

An 88 year-old African-American female, past-medical history of recently diagnosed stage 1 essential hypertension, presents to emergency department (ED) for an evaluation of intermittent, non-radiating mid-epigastric pain. She was diagnosed with mild acute cholecystitis, admitted to the hospital for 4 days and improved with medical management. During the hospital stay, Computed Tomography (CT) scan of abdomen and pelvis showed focal dissection in both left and right common iliac arteries (Figure 1A, B). Calcified

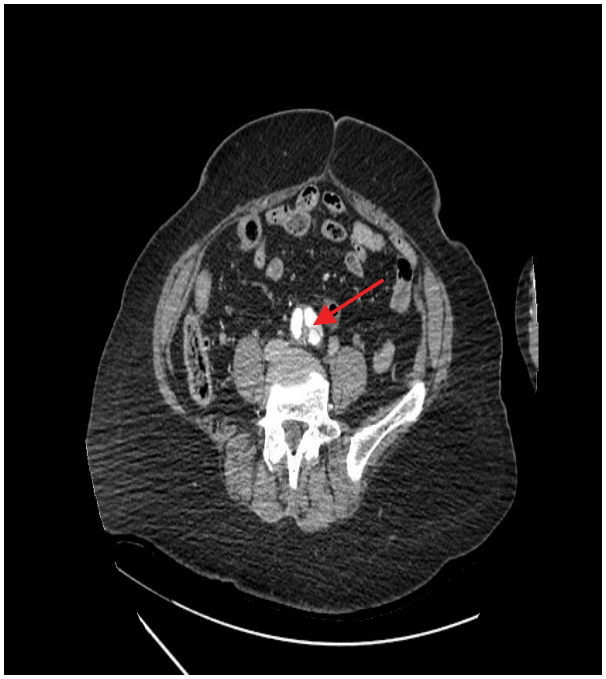

Figure 1A: Computed tomography of the dissected left common iliac artery (red arrow). The artery is dissected since proximal bifurcation from aorta.

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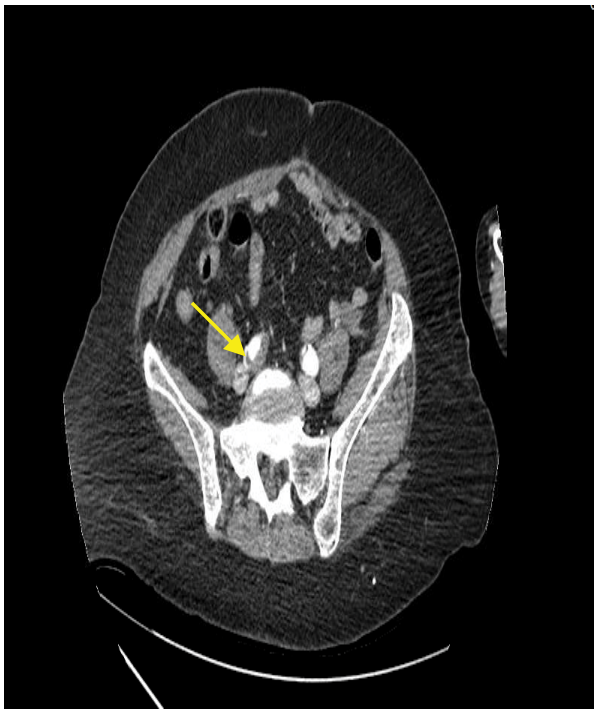

Figure 1B: Computed tomography of the dissected right common iliac artery (yellow arrow). The artery is dissected in more distal location from aorta.

atherosclerotic changes of aorta and coronary arteries were also noted. This finding was completely incidental. She is G2P2, who underwent normal uncomplicated deliveries in her 30s. She was not on any medications. There had been no history of trauma or falls. No bruits were present. Signs of Marfan syndrome and Ehlers Danlos syndrome were also not present. Her other review of systems was negative, including leg pain. Lipid panel was within normal limits. Asides from mild cholestasis on abdominal ultrasound, Electrocardiogram (ECG), exercise stress testing, myocardial perfusion imaging (MPI) SPECT study showed no abnormal findings. Vascular surgery was consulted and whether to endorse endovascular stent placement was debated, however, as findings were absolutely asymptomatic and benefits do not appear to outweigh the risks, conservative management with beta-blockers, aspirin and statin were incorporated in patient's management and patient was recommended to routinely follow-up at vascular clinic upon discharge.

Discussion

Cases presenting with isolated iliac artery dissection (IAD) have been very rarely reported in medical literature. We present a case of arterial dissections in both right and left common iliac arteries, which were accidentally found in computed tomography. IAD is rarely diagnosed as nature of presentation can remain asymptomatic for long period of time and unlike in other major vessels such as aorta or carotid arteries, location of iliac artery itself is not being heavily prone for injury and subsequent dissection to occur. Definitive etiologies are still idiopathic; however, some identified causes include trauma, previous endovascular surgeries, connective tissue diseases such as Marfan's syndrome, Ehlers Danlos syndrome and other vascular disorders [3, 4]. Also, patients with multiple pregnancies, history of hypertension, hyperlipidemia, and atherosclerosis tend to be more susceptible to acquire IAD [1, 5]. History should be focused on previous trauma or exertion levels through exercise or occupational related activities, history connective tissue disorders and vascular disorders in order to generate differentials that can be contributory to the condition [6].

Present case is one of the extremely rare cases reported in the literature that iliac artery dissection is accidentally discovered in both right and left common iliac arteries with a vague initial presentation of abdominal pain, which may not be directly related to the dissection itself. Some etiologies from current patient's history that could predispose to her iliac artery dissection could include multiple pregnancies, underlying hypertension and formally undiagnosed atherosclerosis. We believe patient's underlying chronic untreated hypertension and atherosclerosis could be most probable etiologies of dissection in her iliac arteries. Accumulation of fatty plaques in vascular walls and consequent susceptibility to various oxidative and mechanical stress could put the patient at risk for arterial dissection [7]. Especially given patient had never taken lipid lowering agents and antihypertensive drugs in her lifetime, this could further put her at risk for IAD.

Both atherosclerotic and non-atherosclerotic conditions such as fibromuscular dysplasia (FMD) have been shown in past case reports to have association with arterial stenosis, occlusion, aneurysm and dissection [8, 9]. Common presenting signs could include acute onset pain, paleness, paresthesia, pulselessness and poikilothermia [2]. Unpredictable nature of spontaneous IAD can lead to various outcomes ranging from spontaneous resolution without any specific treatments to progression of forming aneurysm, enlargement of false lumen and ultimately rupture [1, 3]. Primary management goal of IAD is to prevent rupture by limiting further dissection and maximizing blood flow to true lumen [1]. Conservative management such as pain management, blood pressure control and anticoagulation are proven to be beneficial for asymptomatic presentations with no signs of vascular compromise [9]. In presence of severe limb ischemia or aneurysm formation, endovascular intervention can be considered and if signs of arterial rupture are present, surgical repair will be ultimate resort [9, 10].

In present case, patient demonstrates no signs of vascular compromise such as pain, paresthesias or pulselessness as well as due to patient's old age, conservative management with aspirin, statin and beta blockers was implemented as surgical or endovascular most likely would not show morbidity and mortality benefits. Past studies have shown benefits to conservative management which would prevent worsening of the dissection. For example, Liang et al. (2017) conducts retrospective study on 11 patients with spontaneous isolated IAD (asymptomatic in 8 patients and symptomatic

in 3 patients) focusing on various risk factors and study demonstrated that conservative treatment with no endovascular or surgical intervention results in no recurrence of symptoms, partial improvement of dissection or no further worsening of existing dissection [1].

In contrary, if needed, endovascular approach would be implemented especially in patients with vascular compromising symptoms of the dissection. Novotny et al. (2019) presented a case where patient presented with unilateral right leg pain along with paresthesias and pulselessness. As this patient displayed signs of vascular compromise, endovascular treatment via stenting in common iliac artery dissection was implemented and the outcome was uneventful [2]. Patients with younger age and those that lack other comorbidities tend to be candidates for thrombendarterectomy with guide wire as well as stent placement [9]. Whether stent placement would prevent recurrence of dissection is still inconclusive, therefore, frequent initial close monitoring with duplex ultrasound in post-procedure patients would be appropriate [9]. Similarly, patients who receive noninvasive treatment as present patient would also visit the vascular clinic regularly for close monitoring.

Conclusion

Antiplatelet therapy and beta blockers along with close follow-up at vascular clinic was implemented for this patient due to patient's old age and asymptomatic nature of the condition. We believe this noninvasive management would be the most sustainable option for this patient.

Conflicts of interest

The authors have no conflicts of interest to be disclosed.

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