

Direct Operation Resects Repair of Giant
Infrarenal Abdominal Aortic Dissecting
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Abbreviations CTA: Computed
Tomography Angiography; AAA:
Abdominal Aortic Aneurysm; AAD:
Abdominal Aortic Dissections; IAAD:
Infrarenal Abdominal Aorta Dissection

Abstract

Background: Aortic dissection commonly affects the thoracic aorta and is associated with the high morbidity and mortality. But localized dissections originating from the infrarenal abdominal aorta are extremely rare and appear to have better treatment results than those with thoracic dissections.

Case presentation: A 52-year-old female was admitted to our hospital because of a half month history of lower back pain. Computed Tomography (CT) and three-dimensional Computed Tomography Angiography (CTA) showed a saccular infrarenal Abdominal Aortic Aneurysm (AAA), maximum diameter 70 mm, with dissection from the level of left inferior renal artery to the left common iliac artery. Open surgical repair was successfully performed without any complications.

Conclusions: Operation surgical repair may be advisable in patients with acceptable operative risk because of the possibility for full intraoperative exploration to rule out coexisting intra-abdominal diseases.

Introduction

Aortic dissection commonly affects the thoracic aorta and is associated with the high morbidity and mortality. But localized dissections originating from the infrarenal abdominal aorta are extremely rare and appear to have better treatment results than those with thoracic dissections. Herein, we report a rare case of localized dissecting aneurysm originating from the infrarenal abdominal aorta in a 52-year-old female. Open surgical repair was successfully performed without any complications.

The most common diseases of the aorta are aneurysm and dissection of all aortic dissections, the majority (62% to 70%) involve the ascending aorta, another third (30% to 38%) the descending aorta [1,2]. This often catastrophic process commonly involves the thoracic aorta, and dissection limited to the infra renal abdominal aorta is extremely rare. The classifications of aortic dissection by DeBakey and Stanford omit infra renal abdominal aorta dissection (IAAD). IAAD may be classified on the basis of etiology as iatrogenic, traumatic, or spontaneous [3,6]. The natural history and treatment strategies of this disease have not been well defined. We describe a successful surgical repair of localized dissecting aneurysm originating from the infrarenal abdominal aorta in a 56-year female.

Case Presentation

A 52-year-old female complaining of a half month history of lower back pain was admitted to our hospital. He had a history of hypertension for 10 years. On admission, his blood pressure was 140/100 mm Hg and pulse rate was 64/min, regular. The body temperature is 36.7°C. A great and slightly tender abdominal mass (about 15×10cm) was palpable with normal lower extremity pulses. Laboratory tests produced the following results: leukocytes 5.8×10⁹/L, hemoglobin 13.7 g/dl, platelet 191×10⁹/L, with normal liver and renal function. Computed Tomography (CT) and three-dimensional Computed Tomography Angiography (CTA) showed a saccular infrarenal Abdominal Aortic Aneurysm (AAA), maximum diameter 70 mm, with dissection from the level of left inferior renal artery to the left common iliac artery (Figure 1). After admission, the patient was taken hypotensive drug orally (Metoprolol, 25 mg twice/day; Amlodipine, 5 mg once/day). The systolic blood pressure was controlled below 120 mmHg. The patient underwent surgical operation on day 2 following admission because of being afraid of rupture. The operation was performed by a median laparotomy. During surgery, there was no evidence of rupture and other intra-abdominal diseases. There was lightly adhesion in wall of dissecting aneurysm and the surrounding tissue. When the abdominal aorta was opened, entry site of the dissection was observed at the left lateral wall of the

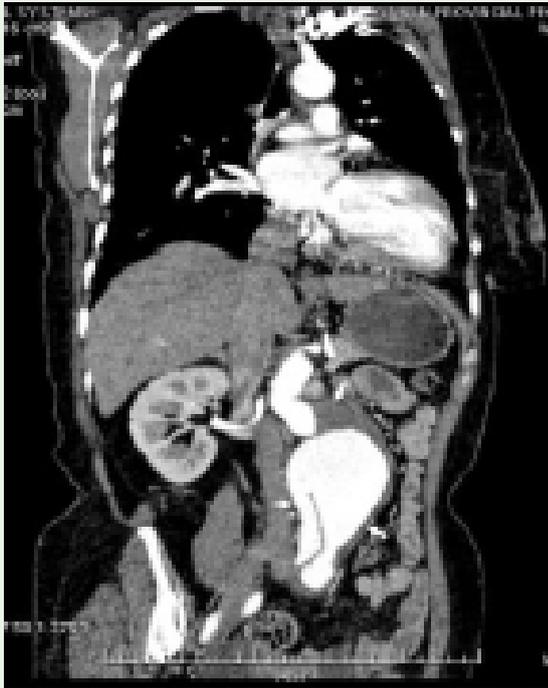


Figure 1: Preoperation: Computed tomography angiography maximum intensity projections in coronal initial coronal arterial-enhanced-phase showed a 4-cm round mass. Initial coronal arterial-phase contrast enhanced CT showed that a saccular infrarenal Abdominal Aortic Aneurysm (AAA), maximum diameter 70 mm (display white arrow), with dissection from the level of left inferior renal artery to the left common iliac artery.



Figure 2: Postoperation: CTA showed that the prosthetic graft was patent with no residual dissection. The white arrows show the anastomosis.

abdominal aorta located at the level of 4cm below renal artery. It was confirmed that the dissection was extended from the level of renal artery to the left common iliac artery with reentry of the false lumen at that point. The lumbar arteries were sutured and the dissecting AAA and the bilateral common iliac arteries were replaced with a knitted PTFE bifurcated graft (16×8 mm, TERUMO company). There was no evidence of malignancy or other inflammation. The postoperative course was uneventful. Postoperative CTA showed that the prosthetic graft was patent with no residual dissection (Figure 2). He was discharged on postoperative day 14 without any complications.

Discussion

Isolated infrarenal abdominal aortic dissecting aneurysm is an uncommon vascular disease that is related to hypertension, hyperlipidemia, and atherosclerosis and may be associated with infrarenal AAA formation [7]. It has been reported only 10 cases (2.5%) that were limited to the abdominal aorta in a collective review of 398 patients with aortic dissection. More recently, Roberts reported that only 1% were noted to have dissection limited to the abdominal aorta in an autopsy study of 182 patients with spontaneous aortic dissection [2].

In the literature, it appears that Abdominal Aortic Dissections (AAD) were predominately a spontaneous event (77% to 89%), while traumatic dissection accounted for 17% and iatrogenic dissection 6% to 11%. Road accidents resulting in direct compression of the aorta against the spine were the most frequent cause of traumatic AAD; iatrogenic dissection was often associated with complicated cardiac

catheterization in patients with irregular calcifications in the aortic intima [1,8,9-12].

The most common symptom of IAAD is acute abdominal and/or back pain and limb ischemia. Other symptoms include chronic abdominal pain, hematuria, melena, and shock. However, a significant number of patients are asymptomatic. If an aortic dissection is suspected, immediate diagnostic investigations should be performed. Although ultrasound is fast and inexpensive, the examination of choice for initial evaluation is CTA [13,14]. The CTA study should include evaluation of the thoracic aorta to rule out possible abdominal extension of a thoracic aortic dissection.

Intervention for localized dissecting aneurysm of the infrarenal abdominal aorta has included open surgical and endovascular repair of the aorta [15]. Open surgical repair may be advisable in patients with acceptable operative risk because of the possibility for full intraoperative exploration to rule out coexisting intra-abdominal diseases.

In conclusion, we reported a rare case of localized dissecting aneurysm originating from the giant infrarenal abdominal aorta. Open surgical repair is thought to be a safe and optimal treatment for this condition. The presence of dissection does not appear to increase the risk of complication or mortality for repair of concomitant aneurysm or for treatment of stenosis

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