Medicina Universitaria. 2017;19(77):189–193

MEDICINA UNIVERSITARIA

www.elsevier.es/rmuanl

SCIENTIFIC LETTER

Open repair of abdominal aortic dissection. Case report

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Received 26 September 2017; accepted 23 October 2017
Available online 1 February 2018

KEYWORDS
Surgery;
Aorta;
Dissection

Abstract
Introduction: Aortic dissection occurs when the layers of the aortic wall separate as the result of an entrance of blood through a tear in the intima. The mean frequency reported for primary dissection of the abdominal aorta is less than 2%, compared with the ascending aorta (70%), the descending aorta (20%), and the aortic arch (7%).
Clinical case: A 74-year-old man begins his illness with sudden and intense lumbar and abdominal pain. An angiotomography showed an infrarenal abdominal aortic dissection extending to both primitive iliac arteries just before their bifurcation. An aortobifemoral bypass was performed with a bifurcated Dacron graft with a good postoperative result.
Conclusion: Primary abdominal aortic dissection is a rare pathology that in symptomatic patients can be treated with an open or endovascular repair. If the open technique is decided on, excision plus an aortobifemoral bypass can be carried out with good results as in this case.

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https://doi.org/10.1016/j.rmu.2017.10.007

Introduction

Aortic dissection occurs when the layers of the aortic wall separate as the result of an entrance of blood through a tear in the intima. This catastrophic process sometimes involves the thoracic aorta; thus, a limited dissection of the abdominal aorta is rare.[1] The mean frequency reported for primary dissection of the abdominal aorta is less than 2%, compared with that of the ascending aorta (70%), the descending aorta (20%), and the aortic arch (7%).[2] Causes of dissection may be spontaneous, traumatic or iatrogenic. Its clinical presentation may be either acute with a sudden onset of the symptoms, or chronic (over 14 days). Natural history and treatment options are not well established; its description in the literature is mainly based on case reports and series with a few cases. Strategies for its treatment are conservative for asymptomatic cases with a non-dilated aorta, and for symptomatic patients, repair through the placement of a stent. The latter is the technique of choice for open surgery.[3] Hereunder we report a case of primary dissection of the abdominal aorta, its clinical presentation and a review of the literature about this pathology.

Clinical case

A 74-year-old man with a history of systemic high blood pressure and benign prostatic hyperplasia in treatment begins his illness 24 h prior to his hospital admission with sudden and intense lumbar and abdominal pain. Hence, he attends a private clinic where he gets an abdominal CT scan showing a dilation of the infrarenal abdominal aorta. Therefore he is taken to a public third level hospital in order to continue tests. At the moment of admittance, his vital signs were: blood pressure 130/80 mmHg, heart rate of 92, respiratory rate of 12, body temperature of 36.6 °C. During physical examination, the abdomen was tender and depressible, painless to palpation, with a pulsatile mass of about 5 cm, poorly defined, with a negative deBakey maneuver and with no data of acute abdomen. Lower limbs were euthermic, with preserved mobility and sensitivity, with distal arterial integrity, with biphasic flows audible with a Doppler probe, with a capillary refill of 2–3 s, without any data of hypoperfusion. Lab work data reported hemoglobin 13.3 g/dL, hematocrit 43%, leukocytes 7100/mm^3, glucose 100 mg/dL, urea nitrogen 16 mg/dL, creatinine 0.9 mg/dL, phosphokinase creatine 63 UI/L, and MB fraction of phosphokinase creatine 9 UI/L. The patient underwent a thoracoabdominal angiography of the iliac vessels, where an infrarenal abdominal aortic dissection is evident, going from the intimal flap and extending to both primitive iliac arteries just before their bifurcation. Also an aortic dilation of up to 56 mm at an infrarenal level with the output of the inferior mesenteric artery of true vessel lumen (Figs. 1 and 2). Given the angiographic findings and the patient's clinical picture, he is admittedto complete pre-surgical protocol and definitive therapeutic planning.

An aortobifemoral bypass with a bifurcated Dacron graft was performed. As a transoperative finding, we discovered an infrarenal aortic dilation of 5.5 cm with an extension of the dissection from 1 cm under the left renal artery up to just before the bifurcation of both primitive iliac arteries

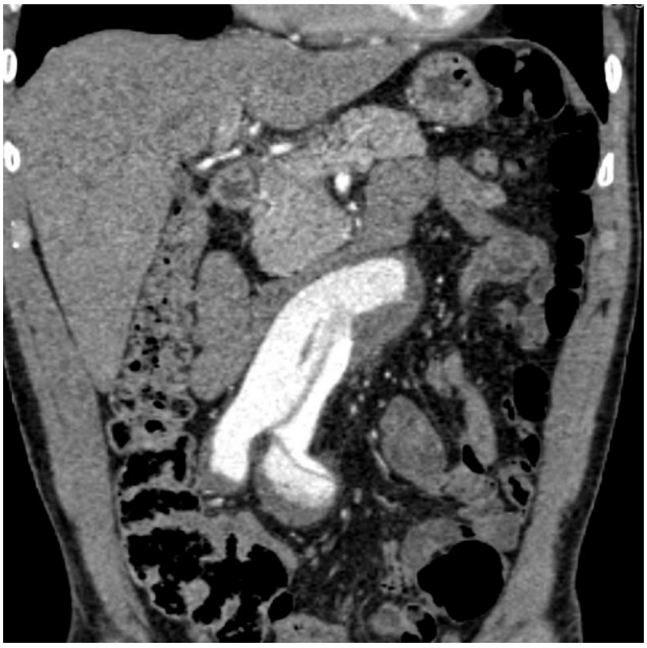

Figure 1 Coronal section of angiotomography with dissection of the abdominal aorta involving the left common iliac artery with dilatation of its wall.

(Fig. 3). The dissection flap involved the left hypogastric artery to 1 cm after its emergence, both ectatic common iliac arteries and thin walls without atherosclerotic plaque. The surgery was performed without complications. After surgery, the patient was taken to the postsurgical care unit for monitoring and, 72 h later, was transferred to a room where he was monitored for 48 h. An ankle-brachial index test was conducted, the results of which were 0.9 on the right side and 1.0 on the left side, proving that there was a good distal arterial perfusion. Moreover, in the control lab work, results did not show elevation of urea nitrogen, hepatic enzymes or lactate. Hence we considered a proper visceral perfusion. With clinical improvement and a positive evolution, the patient was sent home.

Discussion

There are less than 100 reported cases of primary aortic dissection in the literature.[4] In less than half of the cases, dissection extends to the common iliac artery, and in rare cases, it extends to the visceral arteries. Over a third of primary abdominal aorta dissections are accompanied by abdominal aortic aneurysms. Between 51% and 78% of patients have systemic arterial hypertension, and most present acute abdominal aortic symptoms. These symptoms include abdominal pain (47%), lumbar pain (23%), claudication or critical ischemia of lower limbs (17%), paraplegia (3%) and are asymptomatic in only 17%.[5]

Graham et al. found that 70% of these dissections are spontaneous, followed by trauma and iatrogenic causes, each one with a 15% rate of occurrence. The real prevalence of this pathology is unknown due to the fact that