Received: 7.11.2008 **Accepted: 5.3.2009**

Case Report

Acute spontaneous isolated dissection of abdominal aorta

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Abstract

Aortic dissection occurs when the layers of the aorta separate as a result of extra luminal cavity of blood through an intimal tear. Dissection limited to the abdominal aorta is rare. Unfortunately, the appropriate management of dissecting aneurysm of abdominal aorta is not documented yet. A 43 years old man was admitted to Al-zahra hospital in Isfahan with sudden onset of periumbilical abdominal pain. CT scan confirmed infrarenal dissection of abdominal aorta. Performing laparotomy, aorta was repaired using bifurcate collagen-coated Dacron graft. Surgical intervention with synthetic graft is recommended in patients with dissecting aortic aneurysm of infrarenal segments where the extent of dissection is limited and accessible.

KEYWORDS: Aneurysm, Aortic Dissection, Aortic Aneurysm Abdominal Surgery.

JRMS 2009; 14(5): 323-325

Aortic dissection occurs when layers of the aortic wall separate as a result of extra luminal entry of blood through an intimal tear. This process commonly involves the thoracic aorta. Dissections limited to the abdominal aorta are very rare.[1] If the dissection is limited to the infrarenal segment, surgical intervention has been proposed in the acute phase, whereas hypotension therapy is recommended when the dissection extends from subclavian artery to abdominal aorta (suprarenal segment) without rupture or major branch obstruction.[2]

Case Report

A 43-year-old man was admitted to a regional hospital (in Shahreza city) complaining of sudden onset of abdominal pain. Ultrasonography of abdomen and pelvis showed aneurysmal dilatation of distal part of abdominal aorta to be about 26 millimeters. The patient was sent to our hospital for further evaluation and treatment. He had pain attacks for 1-2 hours in periumbilical area radiating to all parts of abdomen. There was no relation between pain and position, eating, defecation and activity. The patient had no history of melena or limb neuromuscular dysfunction, but had a history of fever and chills for 2 days, which relieved spontaneously. The patient had no history of hypertension and diabetes mellitus but had a history of minor blunt abdominal trauma occurred 1.5 years ago. The vital signs were normal. In physical examination, no pulsatile mass was detected but a bruit was heard around the navel. Pulses in the lower extremities were normal. Chest X-ray, electrocardiography, echocardiography, complete blood count with diff and urinalysis were all normal but ESR was 65. All diagnostic tests of salmonellosis and other infectious or inflammatory diseases were negative. The patient had good urinary output. Spiral CT of abdomen and pelvis with IV contrast revealed infrarenal dissection aneurysm of abdominal aorta with extension to right common iliac artery (Figure 1) and aortography confirmed the diagnosis and revealed the treatment plan for the patient

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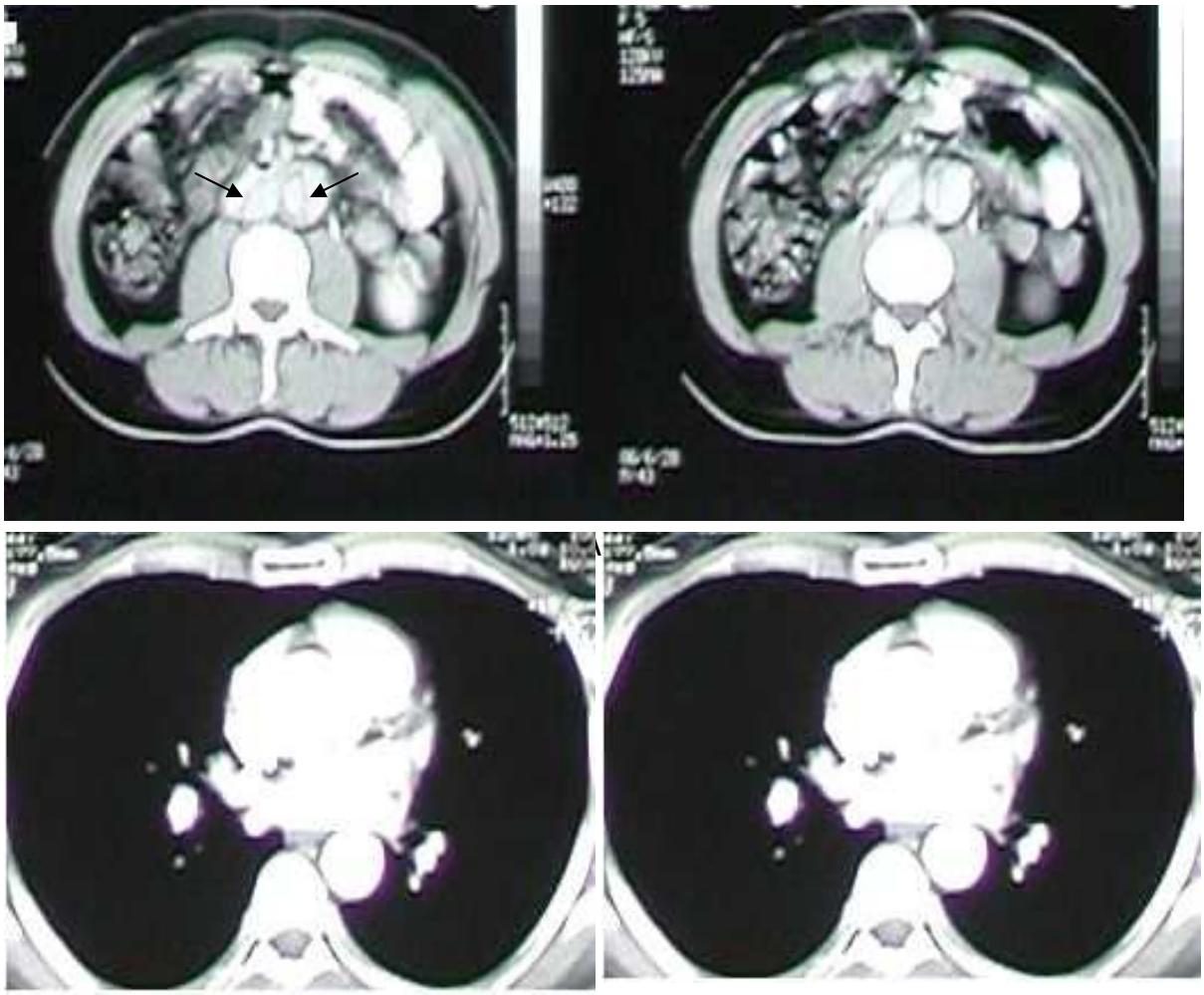

Figure 1. Infrarenal dissection of abdominal aorta (arrows). Thoracic aorta is intact.

(Figure 2). The size of the aorta was more than 5 cm in ultrasonography and CT scan performed in our center. In chest spiral CT, no dissection or aneurysm of thoracic aorta was detected (Figure 1). Because of the severe abdominal pain (possibility of visceral ischemia) and large size of the aorta, midline laparotomy was done and a bifurcate collagen-coated Dacron graft was interposed between abdominal aorta and left common iliac artery and right common femoral artery (because the aneurysm was extended to the distal of right external artery). The patient was discharged after one week hospitalization and had no problems in 6 months follow-up.

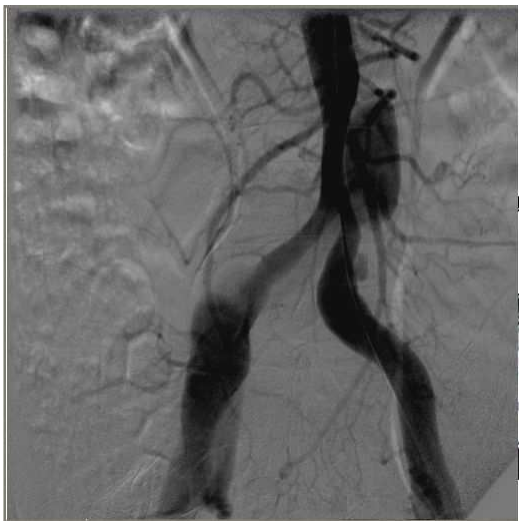

Figure 2. Angiography of the patient reveals the exact level of dissection and aneurysm of abdominal aorta.

Discussion

Acute spontaneous isolated dissection of abdominal aorta is rare and in Dubost's classification places in "Group D" aortic dissections and has estimated incidence of 2-4%.[3,4] In review of articles up to 2007, 41 cases were recorded with mean age of 58 years and 62% of then were hypertensive. More than 3/4 of patients were symptomatic and 3 patients died before treatment.[5] Clinical presentation of this disease is often unspecific including sudden abdominal pain or low back pain or ischemic of lower extremities.[6] Evaluation of thoracic aorta is necessary to rule out the extension of dissection of thoracic aorta to abdominal aorta. Angiography is the only procedure that shows perfusion of lower extremities or abdominal viscera and is necessary to reveal exact location of intimal tear and the kind of operation. It is recommended by many vascular surgeons. It should be emphasized that angiography should be done through arteries of upper extremity. The cause of this disease is not defined yet, but it is usually related to HTN and is seen in 54% of patients. Furthermore, atherosclerosis also presents in 76% of patients.[5] We didn't find any identified source for the disease in our patient, except for history of blunt abdominal trauma (1.5 years before admission), which was not assumed to be the cause of disease. Primary dissection of abdominal aorta is classified into two types: suprarenal and infrarenal. Most of the patients had infrarenal type. Medical treatment with rest and hypertension control is recommended in uncomplicated cases and suprarenal type and surgical treatment is recommended in patients with the infrarenal type. In any event, patients with persistent pain, arterial insufficiency or post dissection aneurysmal development are eligible for surgery. Since, the disease is rare and its course is unknown, the most appropriate management has not been well defined, however rupture or vascular insufficiency requires emergency repair and has a poor prognosis. For this reason, early surgical intervention is recommended especially in patients with infrarenal dissection. The choice of surgical intervention is to replace synthetic graft and previously reported cases showed good results. Using endovascular stent-graft in treatment of this disease is controversy. The advantages of this technique are related to the absence of surgical exposure of the aorta and avoidance of aortic clamping but leakage of blood between the endograft and the aneurysm sac (endoleak) has been reported in about 10% of cases, and if untreated, it may result in expansion and rupture of the aneurysm.[2]

Conflict of Interest

Authors have no conflict of interests.

Authors' Contributions

AAB carried out the design and coordinated the study, participated in most of the experiment. RES provided assistance in the design, participated in most of the experiment and prepared the manuscript. All authors have read and approved the content of manuscript.

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