

Extensive type B aortic dissection involving femoral arteries: clinical image

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ABSTRACT

Background: Type B aortic can be a life-threatening emergency, with a 10-year survival rate ranging from 30% to 60%.

Case Presentation: A 58-year-old man with a history of hypertension presented with intense abdominal pain lasting for 2 hours. Computed tomographic angiography of the thorax and abdomen revealed extensive type B aortic dissection. Despite intensive medical therapy, blood pressure remained uncontrolled, motivating a thoracic endovascular aortic repair, with clinical improvement.

Conclusion: History of arterial hypertension and/or the use of drugs followed by severe chest or back pain without evidence of myocardial ischemia is highly suggestive of acute aortic dissection. The goals of treatment are to control pain and maintain organ perfusion. Patients with type B aortic dissection tend to be older and are generally managed medically. However, recent papers have shown an increasing interest to consider thoracic endovascular aortic repair in patients with acute uncomplicated disease in order to prevent later complications.

Keywords: Aortic dissection, thoracic endovascular aortic repair, type B dissection, case report.

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Background

Type B aortic dissection has an incidence of 2 to 3 cases per 100,000 persons/year and can be a life-threatening emergency. Hypertension is the most frequent risk factor, present in more than 70% of the patients. Drug abuse as well as connective tissue diseases are also prevalent in these patients [1,2]. History of arterial hypertension and/or the use of drugs (cocaine or amphetamines) followed by severe chest or back pain without evidence of myocardial ischemia is highly suggestive of acute aortic dissection [1,2]. The signs and symptoms of acute aortic dissection depend upon its extension and the affected cardiovascular structures. Over 90% of patients report severe pain, most commonly chest (Stanford's type A dissections) or back (Stanford's type B dissections) pain.

Case Presentation

A 58-year-old man presented to the emergency department with intense abdominal pain lasting for 2 hours. He had a history of hypertension, smoking, and previous cocaine abuse. On observation, he was hypertensive (185/88 mmHg), other vital signs were stable. Physical examination was otherwise unremarkable. Computed tomographic (CT) angiography of the thorax and abdomen revealed type B aortic dissection extending from the left subclavian artery to both femoral arteries (Figures 1 and 2). There were no signs of malperfusion, thus the patient was medically managed.

One week later, despite using five different classes of anti-hypertensive drugs (angiotensin converting enzyme inhibitor, calcium channel blocker, diuretic, beta blocker, and vasodilator—isosorbide dinitrate), blood pressure remained uncontrolled, motivating a thoracic endovascular aortic repair (TEVAR), with clinical improvement.

Discussion

We describe a case of extensive aortic dissection, a rare situation that often presents in the acute setting as a catastrophic illness.

Diagnosis shall be suspected clinically but cardiovascular imaging is required for confirmation. CT is the gold standard for confirming the diagnosis of aortic dissection due to its speed and high sensitivity [1,2]. Multiplanar

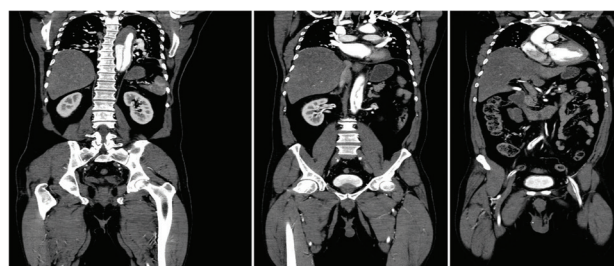


Figure 1. Aortic dissection extending from left subclavian artery to femoral arteries (coronal plane).

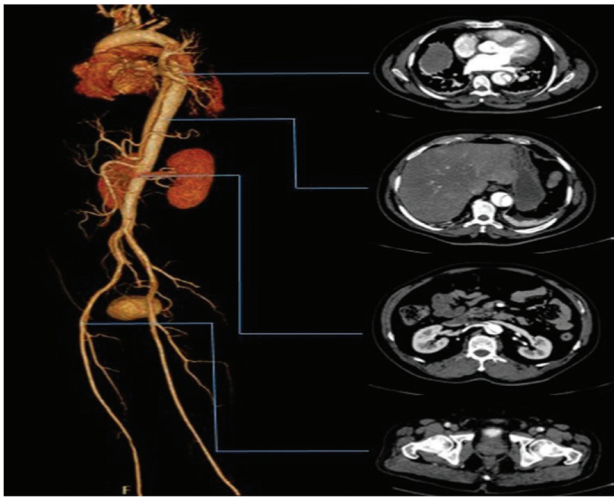


Figure 2. CT three-dimensional reconstruction of aortic dissection extending from left subclavian artery to femoral arteries (lateral incidence and four transverse plane sections).

reconstruction images provide a complementary role in determining the extent of involvement [1].

The goals of treatment are to control pain and maintain organ perfusion. Patients with type B aortic dissection tend to be older and are generally managed medically, with TEVAR and surgery reserved for those who develop complications (persistent severe hypertension or pain, malperfusion, aortic expansion, or rupture) [1–3].

However, recent papers have shown an increasing interest to consider TEVAR in patients with acute uncomplicated disease in order to prevent later complications [4]. Risk factors that predict poor outcomes in this subset of patients include anatomical complexity of the dissection, largest aortic diameter, size of partial lumen, and size and location of the entry tear [4].

Current literature recommends medical therapy to be considered as the first-line treatment option for acute uncomplicated aortic dissection. Risk stratification should, however, be taken into account to define the subgroup of patients who would benefit the most from TEVAR since it appears to be associated with lower aortic rupture rates, although this was not clearly associated with a lower mortality over the follow-up period of the studies [4].

The 10-year survival of patients with acute dissection ranges from 30% to 60%, which highlights the need of a high index of suspicion to obtain a timely diagnosis such that appropriate initial therapy can be instituted promptly [2].

List of Abbreviations

CT Computed tomography
TEVAR Thoracic endovascular aortic repair

Consent for publication

A written informed consent to publish this case was obtained from the patient.

Ethical approval

Ethical approval is not required by our institution to publish an anonymous case report.

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