A Rare Case of Type A Aortic Dissection Presenting as Acute Lower Limb Ischaemia

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Introduction

The case of a young adult presenting with an acutely ischaemic left lower limb following a low impact road traffic accident is presented here. Diagnostic imaging revealed a Type A aortic dissection extending to the left common femoral artery. An emergency combined procedure was undertaken to first revascularise the lower limb and then repair the ascending aorta. Whilst cases of lower limb ischaemia following acute aortic dissection have been reported, this type of clinical presentation is rare.

Case Report

A 34-year-old male sustained a collision, as the restrained driver of a car, with a stationary vehicle at approximately 20 mph. He remained conscious and oriented throughout the episode. He self referred soon after to the emergency department of another hospital with paraesthesia of the left leg. At that time he had absent pulses in the left leg and a cold foot but denied any chest pain. He was noted to have a history of hypertension and chronic renal failure for which he was receiving continuous ambulatory peritoneal dialysis (CAPD). He was referred to our unit where the diagnosis of aortic dissection was suspected; therefore, a contrast CT scan was performed. This revealed an extensive dissection flap from the aortic root throughout the length of the aorta, terminating in the proximal common iliac artery on the right but extending as far as the common femoral artery on the left. Trans-oesophageal echocardiogram confirmed the diagnosis of aortic dissection. The patient underwent emergency surgery in the form of a right to left femoral–femoral crossover graft with four compartment fasciotomies, followed by repair of the ascending aorta. The aortic wall showed no evidence of chronic degenerative change, revealing only an acute dissection. He made an uncomplicated post-operative recovery with no residual neurovascular deficit (Figs. 1 and 2).

Discussion

Exclusion of aortic transection is of vital importance at the outset and all traumatic aortic injuries should be regarded as such until appropriate imaging studies are undertaken. Aortic dissections are defined by either the Stanford (Type A or B) or the DeBakey (Types I, II or III) classification systems.1 The management of type B dissection is predominantly blood pressure control whilst type A dissection requires urgent surgical intervention. The reported mortality rate associated with type A dissection is approximately 1% per hour for the first 48 h.2 Dissection is more common in those with pre-existing disease states, notably hypertension and connective tissue disorders in which aortic media damage occurs. Various modalities of imaging may be employed; a contrast CT scan provides accurate and relatively quick diagnosis with a sensitivity of 83–94%
and a specificity of 87–100%, although spiral CT claims higher detection rates.⁴ Trans-oesophageal echocardiogram provides 97–99% sensitivity and 97–100% specificity and is a useful adjunct.⁴

There are reports of associated lower limb ischaemia in the presence of both type A and B aortic dissection,⁵–⁷ with the classical presentation of severe chest pain radiating to the back and haemodynamic compromise, however, in this case the patient was young and his only complaint was that of a unilateral lower limb paraesthesia. Larger studies have shown an older age group to be at risk, notably over 60 years of age.¹ Lower limb ischaemia may be treated either with a cross-over graft or endoluminal fenestration.

In conclusion, acute aortic dissection must be suspected in the young patient with atypical presentation of acute lower limb ischaemia, particularly in the presence of co-morbid conditions such as chronic renal failure, hypertension or connective tissue disorders. Imaging is necessary to exclude either an aortic dissection or transection. Close collaboration between cardiothoracic and vascular surgeons is necessary for early, successful operative intervention.

References


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