Case Report

Renal artery embolization after back massage in a patient with aortic occlusion

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Introduction

Renal infarction due to acute embolic occlusion is rarely diagnosed and less frequently treated. There is considerable discussion in the literature as to whether retrograde progression of clot can occur from aortic occlusion [1–4]. We present a case of renal artery branch occlusion secondary to retrograde embolization from an infrarenal aortic graft thrombosis after back massage.

Case report

A 59-year-old man was admitted with abdominal pain. Earlier that day he had complained of mild low back pain after lifting a refrigerator. His wife tried to relieve the pain by massage which involved walking on his back while he was in the prone position. Later that afternoon he experienced severe left loin pain radiating to the groin and vomited twice.

Eighteen months prior to this episode he had had an end-to-side aortobifemoral bypass graft performed at his local hospital for severe claudication at 50 yards due to aortic occlusion. The improvement lasted for only 6 weeks when he reverted to short-distance claudication, suggesting that the graft had occluded. He had no past history of myocardial infarction or cerebrovascular disease and was not known to be diabetic or hypertensive but smoked 40 cigarettes a day.

On examination he had a tender left renal angle and both femoral pulses were absent. There was no evidence of acute ischaemia in his legs. The plasma creatinine was 123 μmol/l and the aspartate transaminase was elevated at twice and lactate dehydrogenase at five times the normal limit. An ultrasound showed occlusion of both limbs of the aortobifemoral graft. A CT scan of the abdomen showed no evidence of retroperitoneal bleed but the aorta below the level of the right renal artery was thrombosed as was the aortobifemoral graft. There was a single right renal artery which was patent. The left kidney showed a non enhancing defect in the upper pole (Figure 1). An aortogram showed complete occlusion of the aorta below the level of the renal arteries, which were patent, (Figure 2). This was not felt suitable for thrombolysis of the graft. There was no stenosis in either renal artery. A DMSA nuclear medicine scan showed a subsegmental perfusion defect in the upper pole of the left kidney matching the defect shown on the CT scan. An echocardiogram showed no evidence of intracardiac thrombus.

A diagnosis of embolus to the left kidney from aortic thrombus following back trauma was made. The plasma creatinine was 123 μmol/l on admission and did not rise through the hospital stay. The patient was anticoagulated and 6 weeks later had an exploration of the abdominal aorta at this hospital. At operation the aorta was completely occluded below the level of the right renal artery and the aortobifemoral graft occluded because of neointimal hyperplasia at its distal ends. A new aortobifemoral graft was inserted.

The patient was discharged home 7 days later with
a plasma creatinine of 124 μmol/l and all lower limb pulses were present. A repeat abdominal CT scan 4 months after presentation showed no defect in the left kidney (Figure 3), and a CT scan of the thoracic aorta showed no evidence of a thoracic aneurysm.

Discussion

Renal artery occlusion can occur as a result of embolization from a central thrombus in atrial fibrillation, valvular heart disease, myocardial infarction, ventricular aneurysm or dilated cardiomyopathy. Renal artery occlusion can occur with trauma either directly to the kidneys or through a deceleration injury. It is controversial whether aortic occlusion can lead to retrograde thrombosis of the renal arteries. Starrett and Stoney [1] reported a series of patients with aortic occlusion where this occurred in six of 13 patients who were not operated upon. Reilly et al. [2], however, found no evidence of retrograde propagation of thrombus after surgical aortic interruption. Others have found an association of renal artery thrombosis and axillofemoral grafts for aortic occlusion [4], suggesting possible retrograde thrombosis. It has been suggested that due to the large flow rate in the renal arteries, proximal propagation may be uncommon in the absence of renal artery stenosis [2].

In the present case the aortobifemoral graft occluded over a year before admission but the loin symptoms only appeared after the massage. We presume that in this case in the presence of normal renal arteries the physical trauma led to dislodgement of thrombus from the infrarenal aortic occlusion or from the occluded aortobifemoral graft. The other controversial issue is whether in renal embolization thrombolysis is indicated [5]. In this patient anticoagulation alone led to resolution of the CT abnormalities. Braun et al. [6] reported a case of spontaneous aortic occlusion and renal artery thrombosis where anticoagulation stopped the progression of a renal infarct. However, the area of hypoperfusion on the CT scan did not resolve as in this case.

This report illustrates a case where renal embolization occurred in the presence of aortic occlusion but absence of renal artery stenosis. In view of the temporal association with ‘massage’ it would appear that renal embolization can occur from aortic occlusion in the presence of external trauma. This was probably made more likely by the presence of thrombus in the occluded aorta and thrombus sitting anterior to the aorta in the occluded aortobifemoral graft. Renal function was not compromised, and subsequent CT scans showed complete resolution of the lesion after anticoagulation.

References


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