INTRODUCTION

Iliac venous aneurysms are rare vascular abnormalities that have been reported as primary aneurysms with an unknown cause or have been referred to as secondary iliac venous aneurysms whenever an underlying cause can be identified. Rarely, they have also been identified with long standing distal arteriovenous fistulae (AVF).1

A wide variety of clinical presentations of venous aneurysms are reported in the literature. They may present initially as an episode of deep venous thrombosis or pulmonary embolism.1,2 Many are mistaken for soft tissue masses of the lower extremities either with or without pain.3 Venous aneurysms have also been misdiagnosed as inguinal or femoral hernias or they may be entirely asymptomatic.4

This case demonstrates an unusual complication of a long standing traumatic AVF of 20 years' duration.

CASE REPORT

A 48-year-old man presented to us with the complaints of progressive swelling, dark pigmentation and recurrent ulcers in the left leg around the ankle. The swelling started 20 years back after sustaining a bullet injury in the left lower thigh. Gradually the swelling increased involving whole of the left leg with dark pigmnetations and recurrent ulcerations around the ankle. There was also an associated dull pain in the leg. Examination revealed a palpable left femoral pulse with a thrill over both femoral artery and vein. A strong thrill was also found in the left popliteal space. Auscultation revealed a loud bruit in the popliteal space and femoral area. Dorsalis pedis and posterior tibial pulses were weak. Abdominal examination was unremarkable apart from a vague fullness in the left iliac fossa.

Apart from routine investigations and cardiac evaluation, a color Doppler ultrasound of the left leg and pelvis was carried out. Doppler study demonstrated a large AVF close to the adductor canal, with grossly dilated femoral vein upto the iliac vein associated with a saccular mass on left side of the pelvis representing a large aneurysm, obscuring the exact site of its origin. Therefore, a 64-slice computed tomographic (CT) angiography was done, which revealed a large sized AVF between the distal part of left superficial femoral artery and vein with grossly dilated femoral vein, ending in a large aneurysm of 9.2 x 9.0 cms size, arising from the left external iliac vein with no intraluminal thrombus in it. Compromised arterial flow was noticed distal to the AVF (Figures 1 and 2).

The patient was operated upon with primary repair of the AVF only. The artery was grafted with PTFE and the vein was primarily repaired, with a view that the iliac vein aneurysm will subside gradually once the high venous pressure diminishes. Postoperatively, he was kept on anticoagulation to prevent any venous thrombosis. Soon after surgery, the leg swelling and pain reduced. The ulcer was kept on daily dressing.

At 4th month follow-up visit, the ulcers were completely healed, and swelling and pigmentation resolved to a large extent. A repeat Doppler study showed complete closure of the AVF and reduction in the venous aneurysm to half its original size.

DISCUSSION

Aneurysms of the iliac veins are among the least common in the venous system. In our patient, the aneurysm of the left external iliac vein was associated with an ipsilateral AVF between the superficial femoral
artery and vein. Clinical symptoms of the iliac venous aneurysms develop secondary to the compression of pelvic structures, local thrombosis, thromboembolism or rupture of the aneurysm.5 About 60% of acquired aneurysms are associated with traumatic arteriovenous fistulas.6 These are mostly arterial in origin. Although traumatic peripheral AVF associated with arterial aneurysms, either in the same area or distant, have been extensively reviewed, cases associated with venous aneurysm distant from the fistula site are rare and there are only 7 cases reported in the international literature.5,7,8 This patient presented with chronic swelling and skin changes in the injured limb consistent with chronic venous insufficiency and the distant venous aneurysm was only discovered on further investigations.

Diagnostic procedures that are important in delineating the nature and extent of the lesion prior to initiation of treatment, include Doppler examination, duplex ultrasound, computed tomography, magnetic resonance imaging and angiography.6 Angiography is considered the gold standard diagnostic modality especially for those who are likely to undergo interventional therapy. This is an invasive procedure that has significant associated complications, including damage to the access vessel, as well as the possibility of embolizing plaque and local haematoma formation. In contrast multi-slice computed tomographic angiography is fast, non-invasive and provides high-resolution multi-planar and three-dimensional reconstructed views with less radiation exposure.9

The pathophysiology of iliac venous aneurysm formation secondary to an AVF remains unclear. According to the literature, increased arterial flow with subsequent arterial dilatation proximal to the fistula plays an important role. Arterial dilatation results in compression of the ipsilateral iliac vein leading to a haemodynamically significant outflow obstruction resulting in venous hypertension. Over time, altered venous pressure and flow may stretch the vein wall sufficiently to result in the development of an iliac venous aneurysm.5

Although the literature suggests excision and repair of all abdominal and lower extremity deep venous aneurysms,3,10 we performed a primary repair of the AVF only. The reason for this approach was that on pre-operative imaging, that is CT angiogram, the venous aneurysm did not show any intraluminal thrombus formation. The risk of thromboembolic events during or after surgery in patients with external iliac venous aneurysms associated with AVF is currently unknown. Therefore, it was decided to keep the patient on postoperative anticoagulation.

The results as judged by the patient’s outcome have been excellent so far, with reduction in the size of the venous aneurysm and no thromboembolic events.

REFERENCES


