**Introduction**

Brachial artery aneurysms have a prevalence of 0.5%.\(^1\) They are usually false aneurysms secondary to trauma or previous surgery (arteriovenous fistulae)\(^2\) and associated with type 1 neurofibromatosis and Behcet’s disease. True brachial artery aneurysms are rare, and we present such a case.

**Case Study**

The patient, a 71-year-old man with hypertension, renal failure and a functioning kidney transplant, had a failed arteriovenous fistula at the left wrist but no surgical procedures had been performed at the left antecubital fossa. He was an ex-smoker and retired pottery worker. During a follow-up transplant consultation at a peripheral District General Hospital, a large pulsatile swelling in his left antecubital fossa was noted. A duplex scan identified a 3.2-cm aneurysm of the distal brachial artery, largely thrombosed, extending to the brachial bifurcation. He was initially asymptomatic, but developed ischaemic symptoms in his left hand for which he was referred to the vascular unit at our teaching institution. There was a delay in referral to our vascular unit. The initial investigations were conducted in December 2010 and the patient referred in March 2011.

He was seen with critical ischaemia, cold left hand and rest pain in his fingers. He underwent angiography (Fig. 1). This confirmed the findings of a left brachial artery aneurysm with the radial artery occluded distally, approximately 3 cm from the wrist. The dorsal intersosseous and ulnar arteries were patent but were of poor calibre. No comment was made regarding flow within the sac. It was felt that the aneurysm was a true aneurysm, and it was unclear whether the occlusion of the distal radial artery was embolic or related to previous arteriovenous fistula surgery. There was concern regarding the poor runoff; however, ischaemic symptoms warranted urgent intervention. The basilic was widely patent (4.6 mm diameter) on duplex. The decision to harvest the basilic vein for a conduit using one operative field was made.

A lazy ‘S’ incision was made extending from above the elbow to the mid-forearm. The aneurysmal segment was 10-cm long and 5-cm wide. It was dissected (Fig. 2) and controlled. The macroscopic appearances were that of a true aneurysm. The basilic vein was harvested and reversed. The aneurysm was incised, thrombus evacuated and interposition vein graft repair was performed with the distal end incorporating the ulnar and intersosseous orifices.

Postoperatively, a good ulnar pulse was palpable, which was present at 2-month follow-up both clinically and with a hand-held Doppler. A duplex scan confirmed graft patency, and the patient remained asymptomatic.
Discussion

There have been very few reports on the rare true brachial artery aneurysms that threaten the extremities through distal embolisation. Prompt diagnosis and treatment become a necessity.3 A case of true brachial artery aneurysm reported by Tetik et al. (2010) was a 50-year-old lady with a right-sided 4-cm aneurysm, with no history of trauma. At surgery, a saccular aneurysm was identified and bypassed using a long saphenous vein (LSV) graft.2 A true aneurysm was reported by Hudorović et al. (2010) in a 77-year-old female, repaired using a LSV graft with no complications.4 Gray et al. (1998) reports a case series of true brachial and distal artery aneurysms. Thrombo-embolic complications were seen but did not correlate with the size or the presence of intramural thrombus. They concluded that surgical repair should be routine management due to associated minimal morbidity.5

Our patient would have benefitted from a prompt referral. Implementation of vascular networks and multidisciplinary team meetings might mitigate delays in referral. Expeditious repair is warranted to prevent associated complications of hand ischaemia secondary to embolisation or occlusion. Surgical repair using autologous vein is the treatment of choice.

Conflict of Interest/Funding

None.

References