downstream IgA interaction with mesangial cells, but its exact role has yet to be well defined. The dissociation between rheumatological symptoms and renal manifestations observed in our patient after anti-TNFα therapy suggests that the role of TNFα in IgA nephropathy is not prominent, and that blocking the TNFα pathway is not sufficient to prevent renal IgA deposition and this nephropathy.

Conclusion

The anti-TNFα agent infliximab is effective in treating rheumatological symptoms of AS, but does not necessarily control associated IgA nephropathy, suggesting that the mechanisms involved in AS and the development of AS-associated IgA nephropathy are different. Thus, IgA nephropathy can occur although AS seems well controlled by infliximab, which is contrary to AA amyloidosis.

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References


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Enormous brachio-cephalic arteriovenous fistula aneurysm after renal transplantation: case report and review of the literature

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Abstract

Creation of arteriovenous fistulae provides readily available vascular access for haemodialysis in patients with end-stage renal disease. However, it is associated with various potentially serious complications if left unattended.

We report a case of a 73-year-old male presenting with an enormous brachio-cephalic fistula aneurysm measuring 70–5.4 cm 20 years after successful renal transplantation. Despite attending regular renal outpatient clinic follow-up, this was only noticed as an incidental finding when the patient attended the emergency department after a fall that severely bruised his access. The patient subsequently underwent ligation with complete removal of the aneurismal fistula and discharged to a rehabilitation unit 3 days postoperatively.

Systematic closure of an arteriovenous fistula should be considered in all patients after successful renal transplantation to avoid potentially catastrophic complications of an arteriovenous fistula. In patients in whom the closure of vascular access is contraindicated, it is crucial to regularly

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assess the status of any arteriovenous fistula when following up patients after renal transplantation.

**Keywords:** aneurysm; aneurysm ligation; arteriovenous fistula; dialysis; transplant

### Introduction

After successful renal transplantation, the value of keeping a patent arteriovenous fistula remains controversial. Should the renal graft function deteriorate, creation of a new vascular access will be required if the original functioning arteriovenous fistula access has been ligated and destroyed. On the other hand, an arteriovenous fistula carries various complications including steal syndrome, thrombus formation, limb oedema, traumatic bleeding, poor cosmetic appearance and high-output cardiac failure [1]. Surgical closure of an arteriovenous fistula should therefore be considered in patients with good graft function without any evidence of rejection after a successful renal transplantation and after a time that has been agreed by the multidisciplinary team.

We here describe a case, in which a patent arteriovenous fistula was left unattended for a long period of time after a successful renal transplantation, despite being followed up in the transplant clinic for 20 years since his surgery. This has led to the formation of a dangerously enormous, symptomatic arteriovenous fistula aneurysm. Although aneurysms are a well-known potential complication of an arteriovenous fistula, there has only been one case report on a large, localized aneurysm of a radio-cephalic arteriovenous fistula presenting as an acute swelling in the forearm, treated by prompt surgical closure [2]. To our knowledge, no such extensive and enormous chronic arteriovenous access fistula aneurysm has been reported.

### Case report

A 73-year-old male was admitted to Accident and Emergency following a mechanical fall in the community. The patient had a history of end-stage renal disease secondary to focal and segmental glomerular sclerosis (FSGS). He required haemodialysis therapy via his left-sided brachio-cephalic arterio-venous fistula for 6 consecutive years prior to his successful cadaveric renal transplant 20 years ago. The patient has been followed up in the renal transplant clinic since. He had an excellent post-transplant renal graft function with no episodes of transplant kidney rejection. His arteriovenous fistula was not ligated and remained patent post-transplantation. His other past medical histories included left ventricular hypertrophy and atrial fibrillation.

During his admission, an incidental finding of a very bruised grossly dilated and pulsatile fistula was identified, extending from his left mid-forearm to his left upper arm just distal to his axilla (Figures 1 and 2). This was associated with significant surrounding oedematous changes, moderate discomfort and decreased range of movement of his left arm. Ultrasonographic imaging confirmed the presence of an extensive aneurismal arteriovenous fistula, with the maximum diameter of \( \sim 5 \text{ cm} \).

The patient was at high risk of deteriorating cardiac function and catastrophic rupture of the enormous arteriovenous fistula since it was badly bruised. The left brachio-cephalic aneurismal arterio-venous fistula was explored under general anaesthesia (Figure 3). It was ligated at the anastomotic junction, and at the junction between the proximal aneurysmal site and normal cephalic vein, before it was completely excised (Figure 4). The ligated fistula was measured 70 cm in length, while its maximum diameter was measured 5.4 cm. The brachial artery was reconstructed with an end-to-end arterial anastomosis before skin plasty and closure. The estimated blood loss was 1750 ml and the patient required 4 units of whole blood transfusion.

The patient had an uneventful post-operative recovery. Excellent radial arterial signal was detected by a Doppler ultrasound scan. The abnormal appearance of his left arm caused by the ligated brachio-cephalic fistula and its associated oedema improved significantly, and the patient reported improvement of his symptoms shortly after his operation. He was transferred to a rehabilitation unit 3 days post-operatively prior to his discharge to the community.
to outweigh that of its benefits. In addition, the chronic volume overload induced by the arteriovenous fistula may induce structural and functional cardiac changes, leading to left ventricular remodelling [3]. The left ventricular hypertrophy and the subsequent development of atrial fibrillation in our patient may be related to long-term high-output cardiac failure secondary to the large patent aneurismal arteriovenous fistula. Various previous reports have suggested high-output cardiac failure subsiding after arteriovenous fistula closure [4].

Some surgeons and physicians prefer to have a patent arteriovenous fistula post-transplantation, and should the renal graft deteriorate and graft loss occur, a ready-to-use vascular access is available for an immediate return to haemodialysis therapy if required. In few selected patients, poor graft function, significant proteinuria, history of severe or multiple acute rejection episodes, signs of recurrence of diseases or poor peripheral vascular status may prompt surgeons not to ligate the existing arteriovenous fistula [5], as a patient has a high chance of returning to haemodialysis therapy in the near future.

Our case highlights the importance of a follow-up that includes a strict monitoring during the follow-up of the transplant and a timely closure of arteriovenous fistulae in patients with a successful renal transplantation and good post-transplantation renal function. If closure of the fistula is to be considered, good renal graft function should have been established with potential for further access if dialysis is necessary in the future. However, if a fistula is to be left patent, it is essential to keep it under surveillance with regular clinical examination while patient attends his regular routine transplant follow-up clinics.

In conclusion, systematic closure of arteriovenous fistulae should be considered after a reasonable delay in all patients successfully transplanted to avoid potentially catastrophic complications. Regular clinical assessment of the fistula should therefore be carried out routinely in all patients attending the renal outpatient follow-up clinic if the fistula is still patent.

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