

## PSEUDOANEURYSM AT ANASTOMOTIC SITE FOLLOWING RENAL TRANSPLANTATION

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### ABBREVIATIONS

AVF Arteriovenous Fistula

MR Magnetic Resonance

### KEY WORDS

pseudoaneurysm, renal transplantation

### ABSTRACT

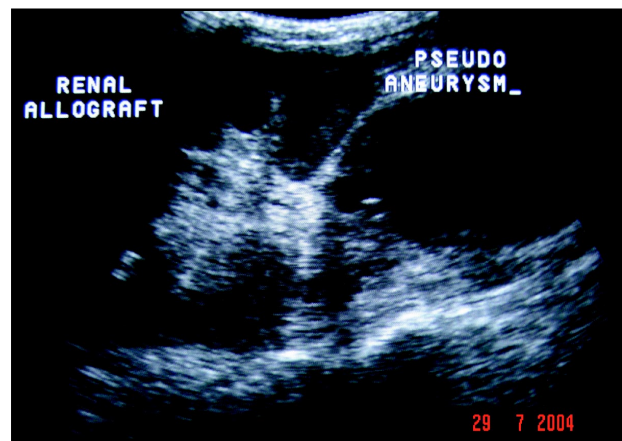
Pseudoaneurysm of iliac/ renal artery arising from the anastomotic site has been reported to occur in about 10 % of renal transplant surgeries<sup>1</sup>. Extra renal pseudo aneurysms are usually asymptomatic, found as unsuspected lesion on imaging studies, either obtained for other reasons or for routine follow up studies<sup>1</sup>. Their incidence is much less than their intra-renal counterparts and when present have worse prognosis.

We report 2 cases of extra-parenchymal pseudoaneurysms following renal transplantation.

### CASE REPORT

#### Case 1

A 32 year old male underwent renal transplantation with end-to side anastomosis between renal and internal iliac arteries on right side, on 5th September, 2000 and had uneventful postoperative period till 2003. He was normotensive and had stable, adequate graft function when he presented for routine check-up in 2003. Patient was found to have a cystic lesion near the anastomotic site on gray scale study on 21st December, 2003. Colour doppler study performed on the same day showed turbulent pulsatile flow centrally, and to and fro flow in the lesion, which confirmed the diagnosis of pseudoaneurysm. Normal blood flow was maintained in the graft. Patient underwent conventional and MR angiography on 18th January, 2004, both of which



**Figure 1** Gray Scale Image Shows Renal Allograft Along With Pseudoaneurysm at Anastomotic Site

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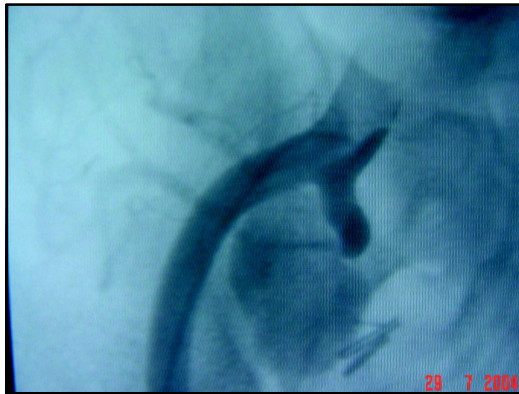
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## CASE REPORT

confirmed pseudoaneurysm arising from the anastomotic site. No surgical intervention could be performed due to patients' refusal for surgery. After 4 months, the patient presented with hypertension and raised serum creatinine levels. His blood pressure was 190/94 mm.of Hg and serum creatinine was 2.4 mg%. Colour doppler study on 26th May, 2004 revealed compromised allograft perfusion along with clot formation in the lumen of pseudoaneurysm.

Graft nephrectomy was performed to save the patient from complications secondary to the rupture of pseudoaneurysm.



**Figure 2** MR Image Showing Filling of Pseudoaneurysm by Contrast.

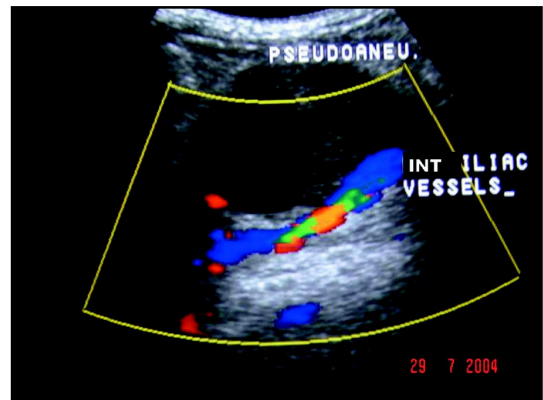
### Case 2

A 47 years old renal allograft recipient who underwent transplantation on 7th July, 2004 presented with anuria 1 month posttransplant. Ultrasound and colour doppler study of the renal allograft revealed under-perfused areas in the graft. Pseudoaneurysm with to and fro flow arising from the anastomotic site was located. The graft along with pseudoaneurysm was removed immediately under exploratory laparotomy. Postoperative recovery was uneventful and patient returned to maintenance dialysis programme.

### DISCUSSION

Vascular complications have been responsible for graft dysfunction /loss in 10% of renal transplant surgeries<sup>1</sup>. The most common complications are arterial/ venous stenosis, intra-renal/ extra-renal arterio-venous fistula (AVF) and pseudoaneurysms<sup>2</sup>. Majority of the intra-renal AVF and pseudoaneurysms are the result of injuries during percutaneous needle biopsies whereas extra-renal AVF and pseudoaneurysms are asymptomatic and accidentally discovered on imaging studies obtained for other reasons<sup>3</sup>. The most common cause of extrarenal pseudoaneurysm is an imperfect surgical vascular anastomosis followed by perigraft infection as the next common etiology<sup>2</sup>.

Extrarenal pseudoaneurysm can be diagnosed by doppler/



**Figure 3** Colour Doppler Study Shows Thrombosed Pseudoaneurysm at Anastomotic Site of Renal Allograft.

color doppler sonography and can be confirmed by angiography. On gray scale study, they appear as an-echoic, spherical, perigraft fluid collections<sup>2</sup>. Colour Doppler study is virtually diagnostic, and shows turbulent pulsatile flow centrally, with to and fro motion at the aneurysm neck. Disorganized central flow with alternating jets of forward and reverse color may be visualized<sup>2</sup>.

The most serious complication of extra-renal aneurysm is exsanguination due to spontaneous rupture of pseudoaneurysm classifying it as a clinical emergency necessitating prompt intervention. Occasionally it can cause renal dysfunction due to direct compression of the main renal artery.

This report of 2 cases of extra-renal pseudoaneurysm diagnosed after 1 year and 1 month posttransplant occurring spontaneously on colour doppler studies helped in salvaging the patients with timely surgical intervention.

### CONCLUSION

Colour doppler imaging has an excellent diagnostic value for vascular complications in renal allograft recipients. Sometimes even feeder vessel can be visualized, in cases of pseudoaneurysms and intragraft arteriovenous fistulas. Conventional and MR angiography further help by interventional procedure, embolizing the same.

### REFERENCES

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