External Iliac Artery Pseudoaneurysm Complicating Renal Transplantation

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Abstract
Pseudoaneurysms at donor renal-external iliac artery anastomosis is rare, multifactorial and more often leads to transplant nephrectomy. The incidence of such false aneurysms is less than 1%. With a few series of case reports in literature, the management, aetiology and indications for repair always remain very controversial and debatable.

Introduction
Pseudoaneurysms at donor renal-external iliac artery anastomosis is a potentially life-threatening complication. We present a patient with this rare complication and share our experience and difficulties we faced in managing such case.

Case Report
A 42 year old female, known case of hypertension, chronic kidney disease, post allograft right renal transplant two months ago presented with complaint of low grade fever, vomiting and tenderness at graft site since two days. She was on immunosuppression with tacrolimus, mycophenolate mofetil and steroids. She was evaluated in an outside hospital for acute graft rejection where she underwent a renal biopsy which revealed acute ischaemic tubular necrosis (ATN). She was subjected to an ultrasound doppler of abdomen and MR angiogram (Figure 1) for renal arteries which had revealed 3.7 cm pseudoaneurysm at the site of anastomosis of right external iliac and right renal artery with a compromised flow to the right kidney. At our institute, an amplatzer vascular plug 4 device was deployed across the pseudoaneurysm neck, but were only able to achieve a partial temporary closure which soon gave away. The graft status was followed up with resistive index (RI), the value of which was above 0.8 suggesting a deterioration in the functional status of the graft. Due to her rising creatinine trend she was started on haemodialysis. Patient was on low dose trimethoprim-sulphamethoxazole combination (80/400 mg) for prophylaxis against Pneumocystis jirovecii pneumonia and urinary tract infection. She was receiving intravenous(iv) amphotericin B (1 mg/kg/day) infusion as an antifungal agent. The total leucocyte count(TLC) showed an increasing trend and patient was started on intravenous antibiotics after withdrawing three sets of blood cultures. She was started on iv piperacillin –tazobactum 2.25 gram iv thrice daily and iv levofloxacin 250 mg once daily dose according to creatinine clearance which was changed over to inj. meropenem 500 mg iv thrice daily on fifth day after all sets of cultures were negative and TLC showed a further rising trend. Antifungal agent was changed from inj. amphotericin B to Inj. capsofungin acetate (70 mg loading iv infusion followed by 50 mg/day) which she was continued upon.

Inspite of the above management, the size of pseudoaneurysm was found to be
increasing on ultrasound Doppler (Figure 2) and TLC kept on rising but the cultures remained negative; Patient had to undergo surgical pseudoaneurysm repair and removal of (possibly) infected transplanted right kidney with follow up on haemodialysis. Unfortunately, the microscopy of the removed graft and vessel did not yield any positive results in this particular case. Patient was discharged on inj. Meropenem 500 mg iv thrice daily and inj.capsofungin acetate 50 mg iv once daily along with oral antifungal mouth paint, erythropoietin (4000 iu subcutaneous twice weekly), antihypertensive and statins for lipid management.

**Conclusion**

External iliac artery pseudoaneurysms following renal transplantation are uncommon with an incidence rate of < 1%. These pseudoaneurysms are usually asymptomatic yet can cause fever and anaemia, compression of adjacent structures, renal dysfunction and graft loss or can precipitate a life threatening heamorrhage due to acute rupture. The possible aetiology for this kind of complication are faulty suture technique, instrumentation injury during perfusion, kinking of renal artery, hyperlipidaemia, traction injury to renal artery during harvesting, immunological mechanisms and hypertension.1,2 The gradual deterioration of renal function may be due to microemboli arising from the aneurysm and presence of hypertension. Therapeutic options include conventional open repair (OR), endovascular repair (EVR) and more recently ultrasound guided percutaneous thrombin injection (USG-PT).

**References**