Long-Term Outcome of Reusing a Kidney Allograft Retrieved From a Living Recipient and Retransplanted Into a Second Recipient

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Abstract

This case report shows that the 5-year outcome of a reused kidney from live-kidney allograft recipients because of intractable recurrence of thrombotic microangiopathy was excellent.

Key words: *Retransplant, Reuse, Long-term, Outcome*

Dear Editor,

Few cases of dealing with the reuse of kidney allografts have been reported. Tariel and associates in 2003,[1] and Celik and associates in 2007,[2] each reported 1 case of reusing a kidney transplant from a brain-dead kidney transplant recipient. In 2008, we reported the first case of reusing a kidney transplant from a live-kidney transplant recipient with intractable recurrent thrombotic microangiopathy.[3] Recently, Gallon and associates reported the successful reuse of a kidney allograft from a live-kidney transplant recipient with severe focal segmental glomerulosclerosis.[4] Almost no data regarding the long-term outcomes of reused kidney allografts exist. We describe the 5-year outcome of the recipient of a reused kidney allograft.

A 34-year-old kidney allograft recipient developed intractable severe recurrent idiopathic thrombotic microangiopathy in the allograft within a few weeks of the transplant. This was despite intensive plasma exchanges, and steroid and rituximab therapies. Eculizumab was not used; hence, at 8 weeks after transplant, we performed a nephrectomy. The kidney allograft was considered to be functioning well (serum creatinine 120 μmol/L, microalbuminuria 1.2 g/d). After having given written, informed consent, a 54-year-old non–HLA-sensitized hemodialysis woman, whose kidneys failed because of polycystic kidney disease, received a reused kidney allograft. The surgical procedure was difficult but uneventful. The second recipient received an induction therapy of antilymphocyte globulins, followed by tacrolimus, mycophenolate mofetil, and low-dose steroids. The posttransplant phase was uneventful, and the patient returned to work within 1 year after transplant. After retransplant, she did not present with delayed graft function. At 6 months after retransplant, her serum creatinine was 97 μmol/L, estimated Modification of Diet in Renal Disease glomerular filtration rate was 60 mL/min, and albuminuria was 0.5 g/d. At 5 years after the transplant, her serum creatinine was 79 μmol/L, estimated glomerular filtration rate was 70 mL/min, and albuminuria was < 0.5 g/d (Figure 1A).

A kidney-edge biopsy performed before retransplant showed 1 normal artery and 30 glomeruli: 1 contained microthrombi, 2 had widening of the subendothelial space, but the others were normal. A second biopsy performed 45 days after the retransplant showed mild glomerular lesions (Banff t0,i0,g1, ptc0,v0,aah1,cg0,ci1,ct1,cv0,mm0, and negative C4d staining). Another biopsy performed at 2 years after the transplant found almost normal renal parenchyma, 1 histologically normal arteriole, and 12 almost histologically normal glomeruli

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(Banff t0,i0,g0,v0,ptc0,aah0,cg0,ci0,ct1,cv1,mm0, and negative C4d staining) (Figure 1B).

Figure 1A. Outcome of Estimated Glomerular Filtration Rate After Kidney-Allograft Retransplant

1A

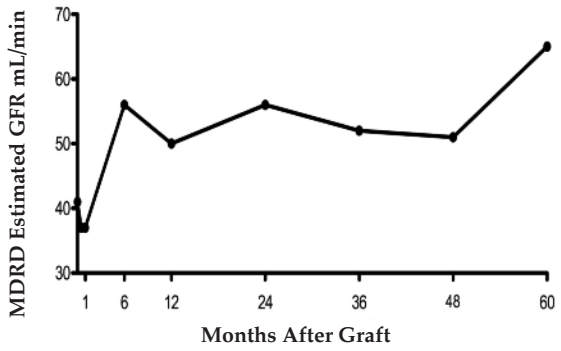
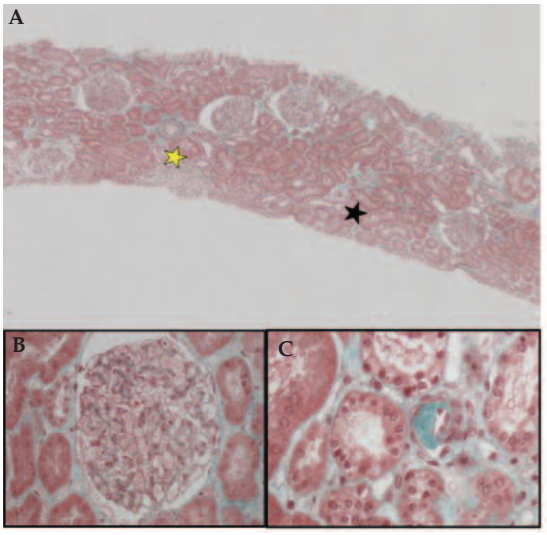


Figure 1B. Masson's Trichrome Light Green

1B



(A) No significant lesion (×400). Focal interstitial fibrosis (black star) and mild arterial intimal fibrosis (white star). **(B)** Arteriolar hyalinosis (×400). **(C)** Normal glomeruli (×400)

Hence, the 5-year outcome of the reused kidney was excellent. This case report highlights that the reuse of kidney allografts from live-kidney allograft recipients in cases of intractable recurrence of the initial disease, such as thrombotic microangiopathy, is possible, safe, and is associated with a good long-term outcome.

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