

Staggered dual kidney transplant: Patient benefit and organ utilisation without wastage in a difficult logistic situation

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Introduction

Dual kidney transplantation (DKT) allows simultaneous implantation of both organs from a donor into a single recipient, increasing nephron mass and potentially improving overall transplant function. Here we present a unique case of a dual renal transplant with implantation staggered over 12 hours.

Methods & results

Donor demographics	
Age (years)	43
BMI	38.7kg/m ²
Sex	Male
Cause of death	Intracranial thrombosis
Co-morbidities	Nil
1st renal transplant	
Knife to skin	04:14am
Total ischaemic time	43 hours
2nd renal transplant	
Knife to skin	15:00pm
Total ischaemic time	52 hours

Fig 1: Donor details and total ischaemic time for both kidneys

Both standard criteria kidneys from a donor following brain death were accepted by our unit. Due to logistical delays and long cold ischaemic time (CIT), both kidneys were placed on a hypothermic perfusion pump. The first patient proceeded with the transplant following discussion of the risks of increased CIT. While the initial patient was in recovery the second recipient refused the paired kidney. The second kidney was then offered to the first patient as a 'staggered dual transplant' to augment graft function and to avoid organ wastage, albeit with increased surgical and anaesthetic risk. Further informed consent was taken and she was transplanted with the second kidney 7 hours later.

The recipient made an excellent recovery with good symmetrical kidney function on post-operative nuclear medicine renogram and she continued to have good renal function at 10 month follow-up.

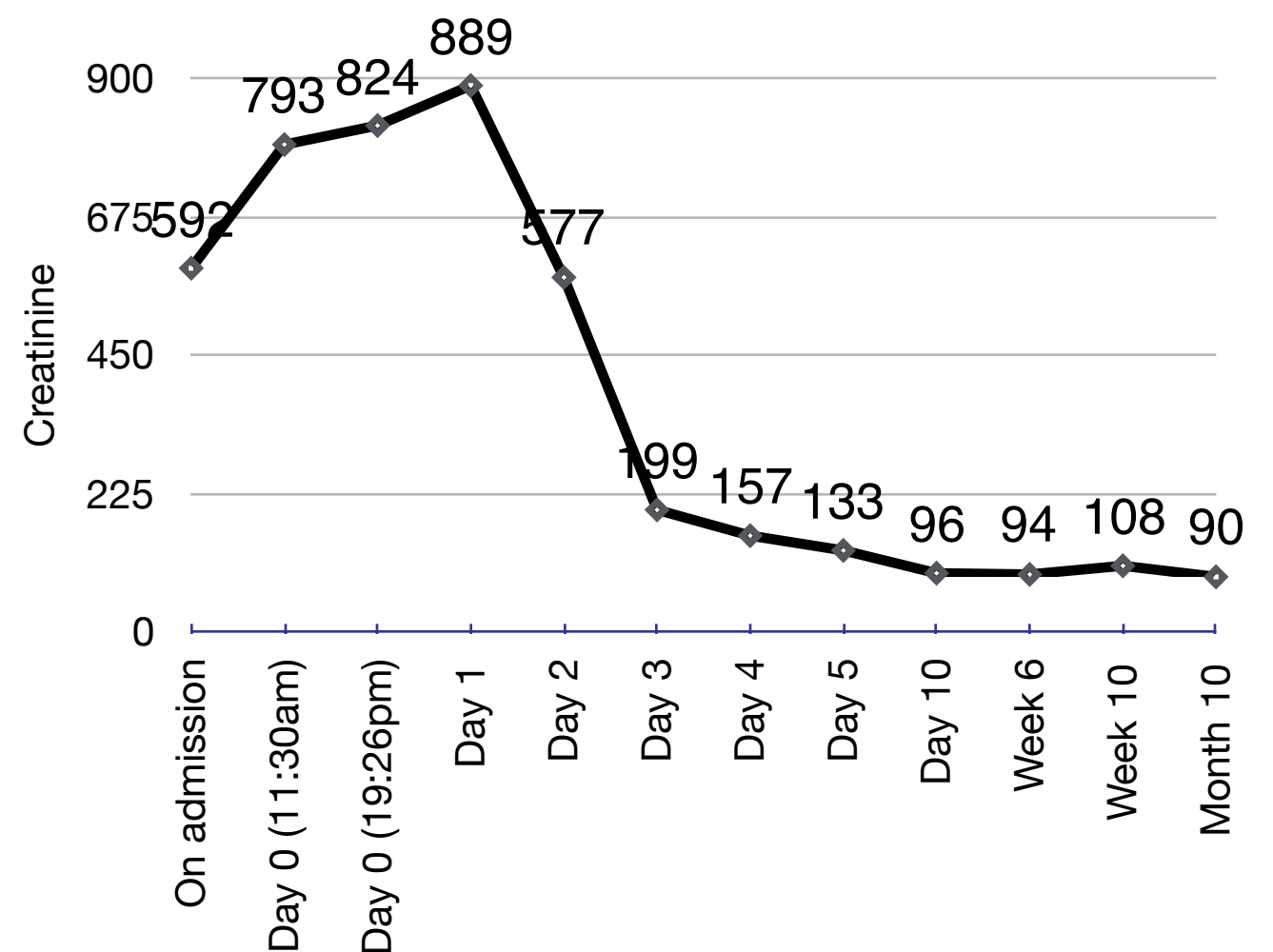


Fig 2: DKT recipient's creatinine levels from admission to 10 month post transplantation

Discussion

DKT has the ability to optimise graft function in extended criteria grafts. However, it is a major operation with potentially more morbidity than single organ transplantation. In this unique situation, the implications of a further surgical procedure within 7 hours on the recipient, as well as the potential effects of a general anaesthetic and a major operation on the primary graft were considered.

In addition, an assessment of the patients capacity to consent so soon after the initial operation and anaesthesia had to be taken in to account. There was a careful balance between ensuring that the patient had recovered sufficiently from her anaesthetic to have full capacity, while minimising CIT as much as possible. In this case a number of consultant members of the multidisciplinary team consulted with the patient and ensured that there she had fully informed consent prior to the decision for return to theatre.

We believe that implantation of the second organ had a positive effect on overall graft function and avoided organ wastage despite prolonged CIT, and that this should be considered as an option in similar situations.