



Ureteric Stricture following Pediatric Dual En-Bloc Renal Transplantation

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Abstract

This is a case report examining a urine leak and ureteric stricture following pediatric dual en-bloc renal transplantation. Despite intraoperative ureteric stenting, and post-operative nephrostomy, urinary leak continued. Both grafts grew in size from 5 cm at implantation, to 9.5 cm within 3 months. Ureteric reconstruction would expose the patient to unacceptable risk of losing both grafts, thanks to the close proximity of the ureters. A transplant nephrectomy of the obstructed graft was therefore undertaken. Transplant nephrectomy of 1 obstructed graft could also be a viable option following an en-bloc transplantation, where the remaining kidney can still provide sufficient renal replacement therapy.

Keywords

En bloc, Kidney, Pediatric, Transplantation, Ureteric stricture.

Introduction

Ureteric stenosis is that the commonest non-immunological complication following renal transplantation, affecting 0.5-6% of patients [1]. This is most commonly associated with watershed ischemia of the distal ureter but may be due to BK viral infection in up to 3% of cases [2,3]. Urinary leak, usually from the vesicoureteric anastomosis, occurs in 3.5% of patients [4]. A meta-analysis [5] examining seven randomized control trials found that major urological complications

were reduced by universal prophylactic ureteric stenting following renal transplantation (RR 0.24, 95% CI 0.07-0.77, $p = 0.02$). Ureteric stents are therefore routinely used by many surgeons [6]. We report, for the primary time within the literature, the presentation and management of a pediatric dual en-bloc renal transplant complicated by urinary leak and ureteric stricture, from one graft. This was managed by nephrectomy of the affected graft, with preservation of the other. Case Report A 26-year-old female with end-stage renal disease of unknown etiology, received an en-bloc dual renal transplant from a 1 year and 9-months-old donor after brain death (DBD). The HLA mis-match was 1-0-1. Prior to implantation, the main right renal artery, which had been injured at the retrieval, was identified and re-anastomosed on the backbench to the donor aorta. There was also a little accessory right lower polar arteria renalis present, in continuity with the aorta. Both kidneys were approximately 5 cm in length at implantation. The right and left kidneys were transplanted en-bloc with the donor aorta and inferior vena cava (IVC). The donor aorta was anastomosed end-to-end onto the proper internal arteria iliaca. The donor IVC was anastomosed end-to-side onto the proper external vena iliaca. The right kidney lay superio-medially in relation to the left kidney, which lay laterally (Figure 1). Both kidneys perfused well after a chilly ischemic time (CIT) of 20 hours and an implantation time of 28 minutes.



The donor ureters were anastomosed separately to the recipient's bladder employing a modified Lich-Gregoir technique. Ureteric stents were left in-situ. Post-operatively, the patient had delayed graft function and initially required hemodialysis. Urine output improved, and therefore the patient was discharged on the 11th postoperative day with a serum creatinine of 96 $\mu\text{mol/L}$. She was readmitted three days later with clear fluid discharging through the wound, associated with pyrexia and a CRP of 212 mg/L. CT scanning demonstrated a 3.6 \times 3 \times 7 cm collection between the kidneys, representing a urinoma, despite adequate position of both ureteric stents (Figure 2). A urinary catheter was re-inserted, and a cystogram confirmed the presence of a urinary leak from the vesico-ureteric anastomosis associated with the superior-medial kidney.

References

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