CASE REPORT

Living kidney donation following nephrectomy due to pelviureteric junction obstruction

Benjamin Soukup,¹ Anil Vaidya,² David Cranston³¹Nuffield Department of Surgery, University of Oxford, Oxford, UK²Department of Transplant, Churchill Hospital, Oxford, Oxfordshire, UK³Department of Urology, Churchill Hospital, Oxford, Oxfordshire, UK**Correspondence to**Benjamin Soukup,
benjamin.soukup@nds.ox.ac.uk

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SUMMARY

A 49-year-old man presented with a 15-year history of problematic pelviureteric junction obstruction of his left kidney. Surgical management had failed to sufficiently control his symptoms and he was keen to have the kidney removed. Following preoperative discussion, the patient consented to his kidney being used for transplant. Following a total nephrectomy, the kidney was successfully transplanted into a 61-year-old woman, with a cold ischaemic time of 3 h and 22 min. There was primary function in the transplanted kidney and creatinine at 6 weeks was 60. This case highlights the potential for using organs with pelviureteric junction obstruction for living donor transplant and thereby expanding the donor pool.

BACKGROUND

Availability of organs for donation is becoming an increasingly important issue with more than 6000 people awaiting a kidney in the UK, for an average length of 3 years.¹ Expanding the criteria for living organ donation has been proposed as one possible way of increasing the organ pool. Previously, criteria such as age, body mass index and blood pressure, have been expanded.²

There have been a number of attempts to assess the feasibility of including organs with known anatomical or physical defects, for example, renal cysts, stones and vascular anomalies.³ We present a case of a living donor kidney with pelviureteric junction obstruction being successfully transplanted.

CASE PRESENTATION

A 49-year-old man presented with a 15-year history of painful pelviureteric junction obstruction affecting his left kidney confirmed by diuretic renal scans. This was initially treated with an open pyeloplasty, which provided excellent symptomatic relief for 10 years. However, the patient began to develop intermittent episodes of left flank pain. Subsequent ultrasound scans revealed moderate hydronephrosis. He had laparoscopic re-do pyeloplasty, which also failed to control his symptoms; this was followed by metal ureteric stent insertion. Over the following 2 years, he developed multiple episodes of pyelonephritis and urosepsis. Renal scans revealed ongoing pelviureteric junction obstruction and stent obstruction. This eventually resulting in the patient having a nephrostomy inserted. The repeated hospital admissions were beginning to have a major impact on his quality of life. Various management options were discussed, including endopyelotomy, nephrectomy with or

without autotransplantation, and permanent nephrostomy. He decided he had had enough of the kidney and wanted to be rid of it; however, he did ask whether it could be used by someone else as a transplant.

INVESTIGATIONS

Preoperative CT images (figure 1) showed left hydronephrosis and hydrocalycosis. Dimercaptosuccinic acid scanning demonstrated a split function of: left 52%; right 48%; the patient's creatinine was 86.

TREATMENT

The patient subsequently underwent elective open nephrectomy. The dissection of the kidney was relatively straightforward, but the dissection of the upper ureter was quite difficult due to scarring with fibrosis and solid calcification in the ureteric stent. This was followed by 'bench' surgery, where the pelviureteric junction was excised and a piece of metallic stent embedded in the pelvis was removed. The kidney was transplanted via a direct pelvi-vesical anastomosis. The transplant took place in the same centre into a 61-year-old woman who was established on haemodialysis due to a background of IgA nephropathy. She had been on the transplant waiting list for 1945 days without having a suitable offer. The cold ischaemic time was 3 h and 22 min, human leucocyte antigen mismatch was a 1-1-0, and the recipient was given induction immunosuppression with basiliximab 20 mg intravenously on the first day and a repeat dose on day four. She had tacrolimus (adoport), azathioprine and prednisolone as her maintenance immunosuppression.

OUTCOME AND FOLLOW-UP

There was primary function in the transplanted kidney with no postoperative evidence of a urinary tract infection or calcinosis. The creatinine fell to 60 and therefore no scans were ordered apart from a routine duplex on the first day.

Both patients made uncomplicated recoveries, the kidney donor was symptom free and was delighted with the successful transplant outcome.

DISCUSSION

This case demonstrates the feasibility of using organs with pelviureteric junction obstruction for living donor transplant. This finding is in keeping with a previous single case report that recounted success following living donation of a kidney with pelviureteric junction obstruction.⁴ In this report, the pelviureteric junction was excised and a direct

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Figure 1 Renal CT scan with contrast demonstrating left-sided hydronephrosis secondary to pelviureteric junction obstruction and left hydrocalycosis.

pelvi-vesical anastomosis formed, whereas the previous report described an Anderson-Hynes pyeloplasty, anastomosing the kidney to the recipient ureter.

Although the incidence of nephrectomy for a kidney with good function due to pelviureteric junction obstruction is low, this case illustrates that successful transplant is possible and worth bearing in mind.

Learning points

- ▶ Although a benign disease, pelviureteric junction obstruction can be very problematic to manage and can cause a reduction in quality of life.
- ▶ Total nephrectomy represents an end-stage management option for pelviureteric junction obstruction. However, it may provide a dramatic increase in quality of life.
- ▶ Following careful assessment, one should consider the use of kidneys with symptomatic pelviureteric junction obstruction for living donor transplant, thereby expanding the organ donor pool.

Contributors BS prepared the manuscript. AV and DC performed the surgery and helped prepare the manuscript.

Competing interests None declared.

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