

Simultaneous Robotic-Assisted Bilateral Native Nephrectomy and Kidney Transplantation for Polycystic Kidney Disease

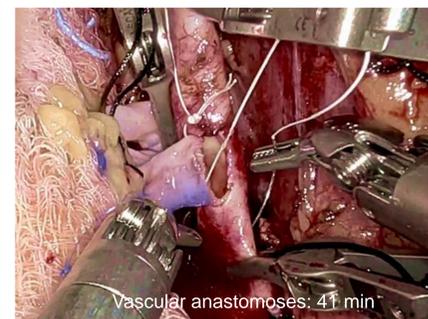
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Background

Simultaneous bilateral native nephrectomy and kidney transplantation is the preferred treatment for patients with end-stage renal disease (ESRD) due to polycystic kidney disease (PKD). To reduce risks of wound infection and morbidity in obese patients, a robotic-assisted approach has been recently introduced. We thought to extend this approach to patients with PKD and ERD in need of a bilateral nephrectomy and kidney transplantation.

Methods

We present the case of 52 yo male affected by end-stage renal disease (ESRD) due to PKD (creatinine: 8.86 mg/dL; GFR: 8 ml/min per 1.73 m²) who received a pre-emptive living-donor kidney. The massive size of the kidneys were preventing allograft placement, causing discomfort and early satiety.



Results

The robotic-assisted bilateral native nephrectomy was started first, and once the kidneys were fully mobilized, the renal vein and artery stapled bilaterally. The robotic-assisted donor nephrectomy was then started. In the meantime, recipient's native kidneys were extracted through a 7-cm periumbilical incision. Once both kidneys were out, the recipient was placed in Trendelenburg position, steroid and Alentuzumab induction was given, and a robotic-assisted kidney transplant (RKT) was performed in the right iliac fossa. The retroperitoneal plain was opened and the kidney was placed in a standard retroperitoneal position at the conclusion of the case. The total surgical time was 403 min, 174min for the bilateral nephrectomy (skin cut to kidneys out), and 206 minutes for the RKT with 41 minutes of anastomosis time. The estimated blood loss was 50 ml in the donor and 300 ml in the recipient. Cold ischemia time was 2.6h. The kidney started to produce urine intra-operatively with a rate of >500 cc/h, a routine post-transplant ultrasound showed patent vessel with no immediate complication. The patient started ambulating and taking oral intake on post-operative day 1. PCA was used per our standard protocol but no oral narcotics were required. There were no postoperative complications, and the patient was discharged from the hospital on postoperative day 4 with a creatinine of 1.57 mg/dL.

Conclusions

We present a transperitoneal simultaneous robot-assisted bilateral native nephrectomy and pre-emptive kidney transplantation. This approach has the potential to decrease incision-related complications of open surgery, reduce hospital stay, and offer enhanced visualization for vascular anastomosis.

