A Young Male with Five Kidneys

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A 36-year-old male with chronic kidney disease (CKD) V (bilateral small-sized kidney) underwent ABO compatible first renal transplant from a maternal uncle in 1994 elsewhere. As a result of chronic allograft nephropathy (CAN), he lost his graft and reached end-stage kidney disease (ESKD) in 2001. He had no family history of kidney disease, and the native kidney disease is unknown.

After a short time on dialysis, he was grafted an ABO-compatible kidney with donor being maternal cousin in another hospital. He took triple immunosuppressants including cyclosporine A, mycophenolate mofetil, and prednisolone. The second allograft failed in 2021, and after a brief period on hemodialysis, he underwent a third transplant from a first cousin with us in July 2021. The graft functioned immediately, though it was a technical challenge to find a suitable vascular anastomosis. The allograft single renal artery was anastomosed at the origin of the right common iliac artery (Fig. 1).

The complement-dependent cytotoxicity (CDC), flow cytometry crossmatch, and donor-specific antibodies (DSA) were negative between donor and recipient, implying zero sensitization. He was inducted with a single dose of thymoglobulin 75 mg and other immunosuppressants such as prednisolone, tacrolimus, and mycophenolate mofetil. His discharge serum creatinine was 1.1 mg/dL, and urine examination was normal. In July 2024, serum creatinine was 0.84 mg/dL with normal routine urine examination. For immunological reasons, the first and second grafts were not removed to prevent sensitization.

A retransplant of a kidney becomes necessary when the previous graft fails. Most of the time, graft failure is due to recurrence of original disease such as IgA nephropathy, dense deposit disease, primary hyperoxaluria, calcineurin inhibitor (CNI) toxicity, noncompliance with medications, familial diseases, or *de novo* glomerulonephritis. The half-life of a graft is estimated depending upon human leukocyte antigen (HLA) matching,[1] compliance, and monitoring pharmacokinetic and pharmacodynamic properties of immunosuppressive agents. Lower urinary tract obstructions due to neurogenic bladder, transplant ureteric strictures and benign prostatic hypertrophy, or congenital abnormalities of the lower urinary tract such as urethral narrowing are not uncommon. As our patient had no sensitization issues from the previous transplants, the immunological risk was very low.

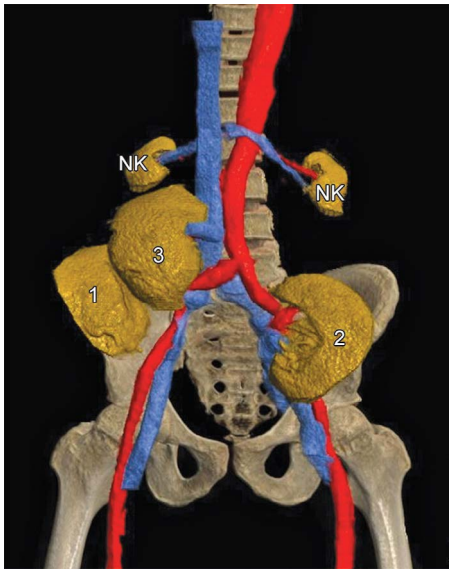

Fig. 1: Native kidneys (NK): 1, 2, and 3 are the transplanted kidneys, with 3 being the latest

Factors contributing to higher immunological risk in retransplantation are prior sensitization, HLA mismatch, acute rejection, mixed rejection, delayed graft function, positive crossmatch, and previous rejection episodes.

A pretransplant computed tomography (CT) angiogram of the lower abdomen and iliac vessels is important in choosing the site for vascular anastomosis and space for the allograft as in our case.[2]

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