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VENOUS RECONSTRUCTION OF PEDIATRIC EN-BLOC KIDNEYS FOR TRANSPLANTATION[1]

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Even though cadaveric kidneys are a scarce resource, pediatric kidneys are frequently discarded because of the small size of the organs or because of damage to the specimen during the procurement. In the latter circumstance, backtable reconstruction can be used (1). We report here the successful use of a set of 6-antigen-matched pediatric kidneys that had sustained a major procurement injury.

The recipient was a 24-year-old woman with endstage renal disease secondary to insulin-dependent diabetes mellitus. Her HLA type was $A_{2,30}$ $B_{28,62}$ $DR_{3,4}$. A 6-antigen-matched set of pediatric en-bloc kidneys from a three-year-old donor was offered for her and accepted. When the kidneys were examined, it was noted that the vena cava had been split in half and was unusable (Fig. 1). A segment of fresh iliac vein graft from an adult cadaveric donor of the same blood type was taken from the refrigerator (Fig. 2). A Carrel patch of vena cava was left on each renal vein, and anastomosed end-to-side to the iliac vein graft with running 8–0 Novafil (Fig. 3). The superior end of the vein graft was closed with running 6–0 prolene. The donor aorta was prepared in the usual way, ligating the lumbar and other branches, and oversewing the aorta superiorly. The reconstructed kidneys were revascularized after a cold ischemia interval of 30 h and 29 min. Separate ureteroneocystostomies were performed. The kidneys functioned immediately and the patient was discharged 12 days later with a creatinine of 1.3 mg/dl. She remains well 13 months postoperatively with a creatinine of 1.1 mg/dl.

Although arterial and venous reconstruction with stored vessel grafts often has been used successfully to salvage damaged kidneys (1), the type of problem described here with en-bloc kidneys had not been previously encountered. The kind of reconstruction used requires meticulous technique but is not particularly difficult. Magnification with surgical loupes is an invaluable aid. This salvage technique should be useful, albeit in a small way, to help increase the number of organs available for transplantation. Wengerter et al. (2) have emphasized that pediatric kidneys, which are often discarded because of their small size, can be used for adults.

References

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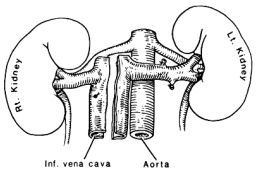

Figure 1.
Pediatric en bloc kidneys with divided inferior vena cava.

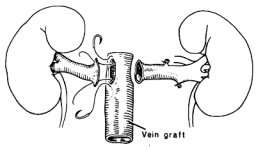

Figure 2.
Vein graft interposition.

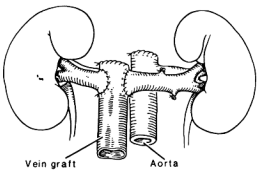

Figure 3.
After reconstruction.