

### **Living donor kidney transplantation with multiple renal arteries in the laparoscopic era**

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**Objectives:** To compare the postoperative complications and survival metrics after multiple renal arteries (MRA) and single renal artery (SRA) laparoscopically procured living donor kidney transplantation (LLDKT). MRA are the most frequently encountered anatomic variation during kidney transplantation. The long-term outcomes of LLDKT with MRA are not well characterized.

**Methods:** A retrospective review of our institution's LLDKT database was performed. All surgeries were performed at a single tertiary care academic center between June 1999 and September 2008. Patients were divided into 2 cohorts (MRA vs. SRA), and analysis was limited to patients with at least 1-year follow-up.

**Results:** Of 584 LLDKTs, 510 had at least 1-year follow-up (median: 36 months). A total of 393 grafts had an SRA, whereas 117 (23%) had MRA. When complications were stratified by the Clavien classification system, no differences were noted between groups ( $P = .5$ ). Furthermore, rates of vascular ( $P = .2$ ) and urological ( $P = .9$ ) complications were similar between groups. There was, however, a higher incidence of slow graft function in the MRA group ( $P = .01$ ), despite similar rates of delayed graft function ( $P = .9$ ) and acute rejection ( $P = .4$ ). Furthermore, allograft survival was similar between both groups with 76% of MRA and 81% of SRA grafts functioning at 5 years ( $P = .49$ ). Patient overall survival was likewise similar between groups with 88% of MRA and 86% of SRA recipients surviving at 5 years ( $P = .76$ ).

**Conclusions:** Despite a higher incidence slow graft function, MRA in LLDKT does not adversely affect long-term allograft and patient overall survival.

### **Editorial Comment**

The authors compared the postoperative complications and survival metrics after multiple renal arteries (MRA) and single renal artery (SRA) laparoscopically procured living donor kidney transplantation (LLDKT). The advances of minimally invasive surgery after the pioneer work of Kavoussi et al. transcends biases limitations that we never imagine would be possible to transpose.

The challenges of procuring a kidney with multiple renal arteries is a difficult task even to open surgeons, while laparoscopically it became a reality and this report reveals a higher incidence of slow graft function in recipients of allografts with multiple renal arteries but the multiplicity of renal arteries in laparoscopically procured living donor kidney transplantation does not adversely affect 5-year allograft and patient overall survival.

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