Is Laparoscopic Living Donor Nephrectomy in Patients with Vascular Anomalies Safe and Effective?

Introduction and Objective: Laparoscopic living donor nephrectomy (LLDN) requires a challenging learning curve. In the initial part of a surgeon's experience, LLDN can potentially lead to higher morbidity and longer warm ischemia time. We assessed morbidity and outcomes of LLDN in presence of donor's vascular anomalies during the learning curve of a single surgeon.
Materials and Methods: From January 2006 to March 2011, 23 patients underwent LLDN at our centre. The left kidney was always preferred and a classic transperitoneal approach with 4 trocars was used. Preoperative, intraoperative, and postoperative variables were assessed for all patients. Morbidity and outcomes of cases with presence (group A, n=8) or absence (group B, n=15) of donor's renal vascular anomalies at preoperative CT scan were compared. Statistical analysis was performed using Mann-Whitney U and Chi-squared test as appropriate.
Results: Preoperative imaging revealed 10 left kidney vascular anomalies in 8 grafts: early main arterial branches division (n=2), double renal artery (n=6), retroaortic renal vein (n=1) and shorter left renal vein in aorto-caval transposition (n=1). The characteristics of LLDN donors and recipients are shown in Table I-II. No significant differences in intraoperative and postoperative variables as well as in the rate of complications were observed between group A and group B (Table I-II). No grafts were lost and no recipient returned to dialysis with a median follow-up of 31 months (IQR 11-46).
Conclusion: The presence of vascular anomalies does not have a significant impact on morbidity and outcomes of donors and recipients during LLDN learning curve.

	Group A	Group B	p value
No. Gender (%) male female	 2 (25) 6 (75)	 5 (33.3) 10 (66.6)	-
Median age (years)	55.5 (49.5-59)	53 (50-64)	n.s.
BMI (kg/m^2)	23.75 (22.15-25.4)	24.85(22.6-25.4)	n.s.
Median operative time (min)	227.5 (165-270)	210 (180-235)	n.s.
Median warm ischemia time (s)	140 (120-200)	145 (110-180)	n.s.
Median length of hospitalization (days)	9 (9-11.5)	8 (6-9)	<0.05
Median creatinine at the discharge (mg/dl)	1.3 (1.15-1.4)	1.2 (1-1.5)	n.s.

Table I: demographic, intraoperative and postoperative variables of donors

	Group A	Group B	p value
Median age (year)	44.5 (30-53.5)	37 (27-45)	n.s.
BMI (kg/m^2)	21.65 (20.5-23.7)	23.5 (22.8-24.1)	n.s.
Pre-allograft dialysis rate (%)	50.0	53.3	n.s.
Median postoperative crs at 1 day (mg/dl)	3.15 (2.1-5.75)	2.4 (2-5.7)	n.s.
Median postoperative crs at 3 day (mg/dl)	1.7 (1.4-3.65)	1.7 (1.5-2.9)	n.s.
Median postoperative crs at the discharge (mg/dl)	1.6 (1.35-2.05)	1.5 (1.3-2)	n.s.
Median eGFR at 6 months (ml/min)	71.0 (44-74)	63.0 (57-80)	n.s.
Median eGFR at 12 months (ml/min)	64.0 (61-74)	73.0 (56-81)	n.s.

Table II: demographic and postoperative data of recipients