

**Abstract Type : Oral Presentation**  
**Abstract Submission No. : F-008370**

## **Advancing Patient Care through Robotic-Assisted Donor Nephrectomy for Transplants**

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**Introduction:** Kidney transplantation significantly improves survival in end-stage renal disease patients. Living donation (LD) enhances allograft survival and recipient quality of life, but traditional open or laparoscopic donor recovery poses barriers. We present an 86-case series of robotic-assisted donor nephrectomies.

**Methods:** Prospective data from robotic-assisted left/right donor nephrectomies at the Miami Transplant Institute (October 2022 August 2023) were analyzed. Pre-operative, intra-operative, and post-operative data included patient demographics, surgical metrics, and pathology findings. Statistical analysis used Student t-test for continuous variables, chi-square for categorical ones ( $p < 0.05$ ).

**Results:** Among 86 cases, 44.2% were male, median age 38. Median BMI was 24.79 (IQR 22.729.33). 63.9% donated to relatives. Kidney anatomy: single artery/vein/ureter in 73%. 26.7% faced anatomical issues. Pfannenstiel incision was common. Median robotic console time: 45 min. Graft artery/vein/ureter sizes: 4 (3.75-4) cm, 5 (45.75) cm, 15 cm. All used robotic staplers. Foley catheter removed in OR, <24-hour stay. Procurement damage in 1.4%. Postoperative readmissions: 4 (4.6%), complications: 13 (15.1%), no surgical reinterventions. No conversions to laparoscopic/open. Immediate graft function in 72 cases; 2.3% had delayed graft function (DGF), all transplanted robotically.

**Conclusion:** Robotic-assisted donor nephrectomy is safe with minimal complications and excellent graft function. Its a preferred approach in centers with robotic capabilities, advancing living donor care and enhancing treatment quality.