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Comparative Analysis of Right and Left Retroperitoneoscopic Donor Nephrectomies

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Introduction:

For living donor kidney transplantation, left kidney is recommended to be procured because of the anatomical reason. However, there are situations where the right kidney must be used, such as cases of kidney function asymmetry, right kidney tumors, or other specific reasons. This study aims to compare the right and left donor nephrectomy.

Methods:

We retrospectively analyzed the 230 retroperitoneoscopic donor nephrectomies (RDN) performed at our institution from 2021 to May 2023. We compared the graft anatomical data, the donor perioperative outcomes, and graft and recipient outcomes of right-RDN with those of left-RDN.

Results: Right-RDN was performed in 31 (13.4) donors. As expected, right graft renal vein was significantly shorter than that of left one ($18.3\pm 5.7\text{mm}$ vs. $23.8\pm 5.8\text{mm}$, $p<0.001$). Although the operation time for right-RDN was significantly longer than that of left-RDN ($253\pm 69\text{min}$ vs. $219\pm 63\text{min}$, $p=0.006$), there was no statistically significant difference in donor and recipient surgical complication and donor post-operative stay between the groups. The graft survival of right-RDN group was also comparable to that of left-RDN.

Conclusion:

Despite the longer operation time required and the shorter length of the right graft renal vein compared to the left, both right-RDN and left-RDN demonstrated similar safety and graft outcomes in living donor kidney transplantation. Therefore, right-RDN should be considered when necessary.