

Commentary on Transperitoneal laparoscopic left versus right live donor nephrectomy: Comparison of outcomes

While individual centers' small experiences may show right sided grafts' outcome similar to those retrieved from left side, larger retrospective study using national registry data show that right sided donor nephrectomy, regardless of open or laparoscopic approach, has been associated with increased risk of allograft failure.^[1] With the iliac artery anatomically located lateral to iliac vein, one would need a longer vein in the graft to enable the graft placement in the iliac fossa, its final location. Most renal transplant surgeons would intuitively prefer to implant a graft harvested from the left side. The right kidney has a simpler anatomy for retrieval, with no adrenal or lumbar veins to tackle. However, a long artery and short vein make this kidney's anatomy skewed for grafting. The authors' observation of similar vessel length on two sides is surprising. Studies on cadavers have shown significantly shorter right renal vein length (average 13.7%) on the right side.^[2] With its weak posterior wall, there is an added risk of tear of the right renal vein if there is tension during anastomosis. Overzealous maneuvers and stretching of a short vein during retrieval, or handling during allografting may also risk intimal damage, a possible etiology for some early reports of right grafts lost to renal vein thrombosis following laparoscopic harvest. The authors, too, report one graft loss due to renal vein thrombosis, though the side of retrieval has not been specified.

The standard technique to retrieve right renal vein during open donor nephrectomy has been to include an inferior vena cava (IVC) cuff. A small IVC cuff gives additional length to the vein, and, in addition, its thick edge ensures a secure anastomosis. Few minimally invasive surgeons harvesting a right kidney for transplant would bother to dissect around the renal vein termination to get the IVC cuff, which is so important for a successful right grafting. The authors do point out the importance of renal flip during right donor nephrectomy, something that is never required on the left side, to get behind the renal vein and IVC to dissect the renal artery proximal to its division and get a common stump in cases with early arterial branching. This step is also useful to dissect the right renal artery hidden behind a short renal vein, even in the absence of early branching. What the authors missed highlighting is that this maneuver frees up the

posterior surface of IVC behind the renal vein and enables the posterior blade of the stapler to slip behind the IVC to get an IVC cuff in cases with a short renal vein. It may sometimes be necessary to take care of some right lumbar veins opening directly into the IVC to enable freeing up its posterior surface close to the renal vein termination. The use of single line of staples fired only on the donor's side also helps retrieve those few important extra millimeters. In doubtful cases, it would be worthwhile retrieving the right kidney via a subcostal incision instead, enabling use of a standard Satinsky clamp for proper harvest.

The authors have justified using a single Hem-o-lok® clip on the artery and vein citing their own experience, as well as some studies from the literature. The donor's safety, however, is paramount. We cannot disregard donor deaths attributed to dislodged Hemo-o-lok® clips, documented in the literature^[3] and the Food and Drug Administration warning.^[4] If clips are being used to secure vessels, it should be mandatory to use multiple clips, similar or in combination with titanium clips, for safe donor outcome.

There are many ways to tackle a short renal vein while allografting, either primarily or while re-anastomosing after failed first attempt. Apart from inverted kidney position, as reported by Simforoosh *et al.* and quoted by authors, re-routing of renal vein by transposition behind the iliac artery successfully decreases the distance between renal hilum and external iliac vein.^[5] The use of a gonadal vein graft may increase renal vein length by as much as 2-4.5 cm,^[6] similar to what could be achieved by clam-shell technique of incorporating IVC patch in cadavers. We have also used homologous pericardial patch, available with most cardiac units, to repair and give shoulder to a badly damaged right renal vein on bench as a salvage procedure before successful allografting.

Often, the donor and recipient surgeons have different perspectives on the selection of kidney for donation. What is logical for one, may prove difficult for other. While maintaining the donor's safety, a donor surgeon has to make all attempts to provide a common arterial stump and sufficient vein length, with or without added IVC cuff, to ensure best recipient surgical outcome. The recipient surgeon, on the other hand, has to use all means including local mobilization and use of autologous or homologous material to ensure tension free anastomosis. While developing robotic kidney transplant technique lately,^[7] we realized that one could anastomose small renal vein lengths easily and securely without tension, with the graft resting in the pelvic hollow

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and the vessels facing laterally, since this brought the renal and external iliac veins right next to each other.

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