

Platinum Priority

Reply from Authors re: Eric Lechevallier. Laparoscopic Living-Donor Nephrectomy: Is It Really Better? *Eur Urol* 2010;58:510–1

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In the half century that has passed since the first successful procedure, living-donor renal transplantation has shown superiority over cadaveric-donor renal transplantation. Living-donor renal transplantation has several advantages. First, cold ischaemia time is significantly shorter than in cadaveric-donor kidney transplantation, and thus there is an almost complete absence of ischaemic injury to the transplanted kidney. This results in a relative insensitivity to poor tissue matching and better long-term function. Second, kidneys harvested from living donors represent perfect organs from perfectly healthy donors, ensuring a better graft and recipient survival compared with human leukocyte antigen-matched cadaveric transplants. Third, living-donor nephrectomy reduces the waiting time for the recipient and therefore allows renal transplantation earlier with the recipient still in better general condition and health [1,2].

Since the 1990s, laparoscopy has presented an important development in urology as well as in other surgical areas. At present, the period of euphoria, which has occurred with the introduction of nearly every new medical discovery, has been replaced by a more sober approach to the evaluation of the real advantages this relatively new technique offers to the patient.

Because laparoscopy is generally less invasive than an open surgical technique, laparoscopy may be preferable if it can be demonstrated to achieve the same result, with the same safety for the patient, with less operative trauma. Nevertheless, this difference remains the object of a controversial debate.

Laparoscopic living-donor nephrectomy (LLDN) has revolutionised kidney transplantation, allowing laparoscopy into the delicate medical area of transplantation. This surgical technique, introduced in 1995, has become an accepted method of kidney harvest for transplantation [1]. Although pure laparoscopic donor nephrectomy is feasible, some surgeons for reasons of safety prefer hand-assisted laparoscopy for living-donor nephrectomy (LDN), which appears to have the same donor and recipient complication rate as standard laparoscopy but offers substantial advantages in terms of shortened operative and warm ischaemia time as well as decreased intraoperative bleeding [3].

In the 1990s, when LLDN was becoming established, there was a relatively high complication rate, with ureteral injuries and loss of organs resulting from the laparoscopic extraction. Such complications have been reduced to a very low level today, after the initial learning curve that accompanies every new surgical technique [4]. Actually, the reported donor complication rate is not significantly different between open and laparoscopic techniques [2].

Nevertheless, >15 yr after the first LLDN, there is still debate about the best technique for LDN: the “traditional” open living-donor nephrectomy (OLDN) or the minimal invasive laparoscopic techniques.

As stated by Lechevallier [5], in the literature we find numerous comparative studies, review articles, and meta-analyses concerning the different surgical approaches for LDN, making it difficult to endorse one surgical procedure as the gold standard. Not surprisingly, most evidence in this field comes from case series, and most of them are retrospective. Although this constitutes a drawback, it is evident that prospective randomised trials are extremely difficult to perform in this field.

In 2007, Shokeir [6] found that according to the published literature, underreporting of donor mortality and graft losses following laparoscopic donor nephrectomy was serious and mostly omitted when the techniques were assessed in review articles. In his literature review of data published up until October 2006, he found 11 perioperative donor deaths for laparoscopic and 10 for open donor nephrectomies and concluded there may be underreporting of donor mortality. Nevertheless, in 69 selected papers, there were only 7 randomised controlled trials and 5 prospective nonrandomised studies. The remaining were retrospective studies and case reports.

In contrast, in a meta-analysis including 73 studies and 6594 patients, Nanidis et al. [7] concluded that laparoscopic nephrectomy in living-donor transplantation is a safe alternative to the open technique and that, although open nephrectomy may be associated with shorter operative and warm ischaemia times, patients undergoing laparoscopic nephrectomy may benefit from a shorter hospital stay and faster return to work without compromising graft function.

The development and introduction of new approaches for LDN, like the laparoendoscopic single-site (LESS)–LLDN, has further complicated the decision regarding the standard surgical procedure for LDN. Canes et al. [8], in their preliminary studies, proved that LESS–LLDN shortens convalescence, time off work, and time to resolution of physical symptoms but increases the warm ischaemia time. These are the first conclusions concerning LESS–LLDN; its safety and its implications for renal function at long-term follow-up have to be investigated in other prospective studies.

The rising numbers of terminally ill patients with renal insufficiency in Central Europe, long waiting times for kidney transplants, and organ shortages have all led to an

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increase in the proportion of living-donor nephrectomies in Europe [9].

Laparoscopic techniques of donor nephrectomy have reported disadvantages in terms of longer operative time and longer warm ischaemia time. However, the available evidence suggests that the longer warm ischaemia times do not result in reduced graft function or survival with the caveat that follow-up for transplantations following laparoscopic donor nephrectomy is still considerably shorter than for the open-donor techniques.

Moreover, by shortening hospitalisation time, LLDN results in reduced social costs and allows donors to return to normal functional activities and to work quickly, improving quality of life [10]. Based on the evidence, both LLDN and OLDN can be considered standard of care in experienced hands. A well-established kidney transplant centre must have mastery over both operative techniques and be able to offer both to patients.

Conflicts of interest: The authors have nothing to disclose.

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