

Are there still surgical limits to kidney transplantation?

Letter to editor

Kidney transplantation (KT) is the best treatment for end-stage renal disease today. The surgical technique used until nowadays was described by Kuss in 1951. We have the feeling that surgeons are seeing fewer and fewer limits in performing KT. Indeed, when we began our training, KT was indicated only in young and healthy patients with no major medical history. Most of the time it was the first time KT, exceptionally a second one.

Nowadays, it is common to perform KT in elderly patients. A recent review¹ concluded that there are no clear guidelines for selecting elderly candidates to transplant. With no formal age limit, in addition to the routine analyses older candidates for transplantation should be screened for frailty, comorbidity and adherence to prescriptions.

Obesity is also not a contraindication

Even if surgical complications are higher than in general population, overall survival in obese kidney recipients is better than in obese dialyzed patients with a body mass index up to 35.² Moreover, third and fourth KT is becoming commonplace.³ Surgical techniques are various in the literature. Some authors use a trans-peritoneal midline incision others use a retroperitoneal heterotopic approach. The overall surgical complications rate is about 25% without graft loss reported. Now we have come to fifth KT in patients whose life expectancy lengthens and in whom the progress of immunosuppression allows re-transplantation.⁴

The vascular contraindications have almost disappeared

when the iliac arteries are not usable, we perform KT on a vascular bypass, sometimes as exotic as an axillofemoral bypass⁵ or an orthotopic KT.⁶ In end-stage renal disease patients with severe atherosclerosis in the aortoiliac region, vascular reconstruction allows kidney transplantation. However series of kidney transplantation implanted on a vascular bypass are often small and is described as technically challenging. Authors describe arterial reconstruction before or at the same time as the renal transplantation with good outcomes in both cases.⁷ In the same way, in patients with iliac or inferior vena cava thrombosis, venous bypass or anastomosis with the mesenteric system can be performed.⁸

Ureteral anastomoses are usually performed into the bladder, recipient's ureter or kidney graft pelvis. However if there is no bladder or a lower urinary tract abnormality, KT can be performed into an ileal conduit, a bladder augmentation, an ureterocystoplasty or an orthotopic neobladder.⁹ Some authors concluded that a two-stage procedure consisting of reconstruction of the lower urinary tract followed by renal transplantation is a safe and efficient approach which achieves similar results to those in transplanted patient with a normal lower urinary tract. The graft survival for patients undergoing reconstruction was comparable to that in recipients with a normal urinary tract.

Volume 2 Issue 1 - 2015

Arnaud Doerfler, Xavier Tillou

Urology and Transplantation department, University Hospital, France

Correspondence: Arnaud Doerfler, Urology and Transplantation department, CHU Cote de Nacre, Avenue de Cote de Nacre, 14033 Caen, France, Tel +33 231064844, Fax +33 231064957, Email arnauddoerfler@yahoo.fr

Received: January 05, 2015 | **Published:** February 04, 2015

There is a similar trend with procured grafts

We speak now of "marginal donor kidney" or "kidney from expanded criteria donors," but the main change is that when the transplant is not deemed "good enough" to be transplanted singly, we are led to perform dual KT to increase nephron numbers and thus obtain a better renal function.¹⁰

To improve functional outcomes and to push the limits of usable renal transplants, we are using now machine perfusion instead of cold storage. Moers clearly demonstrated an improvement of delayed graft function and graft survival at one and 3years after transplantation of brain dead donors' renal grafts.¹¹

Finally, in the era of minimally invasive surgery, transplantation also follows the trend. Laparoscopic donor nephrectomy has been considered the gold standard in most KT centers for several years: laparoscopic KT was first described in 2006 and now series with more than 40 cases in the last two years are published with good results. Recently a preliminary study of robot-assisted KT has been published which indicates its feasibility without any major complications.¹²

The question about "surgical limits in KT" is due to be asked. Part of the answer will probably come one day from the first report on laparoscopic fifth KT in the elderly with a medical history of vascular bypass and cystectomy. Who can tell?

Acknowledgements

None.

Conflict of interest

The author declares no conflict of interest.

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