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## Simultaneous kidney transplantation and ipsilateral native nephrectomy in patients with autosomal dominant polycystic kidney disease

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### Abstract

The simultaneous kidney transplantation and ipsilateral native nephrectomy for autosomal dominant polycystic kidney disease does not seem to be associated with increased rates of comorbidity and complications. This outcome can efficiently be achieved when the indication and surgical approach of native nephrectomy are properly justified.

**Key Words:** Autosomal dominant polycystic kidney disease; Kidney transplantation; Native nephrectomy; Retroperitoneal approach; Surgical complications

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**Core Tip:** The current results showed that simultaneous kidney transplantation (KT) and ipsilateral native nephrectomy for autosomal dominant polycystic kidney disease is not associated with higher rates of comorbidity and complications. However, the indications should be justified to include forming a sufficient surgical space, such as with huge kidneys, alleviating symptoms, such as with infected cysts and accessing preemptive KT. On the other hand, the retroperitoneal surgical approach of the native nephrectomy should be employed, despite the anatomical challenges of approaching the native kidney from the same approach as the transplantation procedure.

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## TO THE EDITOR

We read with interest the article by Darius *et al*[1], who studied the effect of the simultaneous ipsilateral native nephrectomy and kidney transplantation (KTIN) in a cohort of 154 patients with autosomal dominant polycystic kidney disease (ADPKD). This procedure was performed in 77 patients who were compared with another 77 patients who had KT alone. The authors addressed certain points in this issue such as the indications, preoperative and perioperative variables and complications. They concluded that KTIN is a safe strategy without a negative impact on the rates of surgical comorbidity, complications and graft survival.

We agree with the authors' conclusions that generally KTIN for ADPKD may not increase the rates of comorbidity and complications of KT. Also, we believe that this surgical strategy has very important practical implications on the field of KT, proving the surgical feasibility and safety of one-stage surgery, non-affected graft survival and a high patient satisfaction. Despite the numerous studies that have reported these outcomes, there are many unresolved controversies that still warrant further studying due to the insufficient evidence-based proofs in the literature[2-5].

In light of the results of this study, relevant literature status and our own experience, we will address some practical points that are crucially relevant to this subject. These points may contribute to the verification of the advantageous implications of KTIN on the KT practice, especially the living donor KT. Although our routine policy is to perform KTIN for ADPKD patients, we have encountered a few serious comorbidities and complications in those patients. We present this brief experience in the purpose of strengthening the focus and attention to the unfavorable sequels of KTIN to avoid them, but not to argue against the results reported by the authors or the growing evidence of the advantages of this strategy in the literature[5].

The authors addressed the common indications of KTIN in the symptomatic patients and they were similar to those indications reviewed and mentioned in the literature without much controversy. They included creating a surgical space for the graft as a cardinal indication, intractable renal pain, significant hematuria, intra cyst infections and hemorrhage, gastrointestinal symptoms such as early satiety, recurrent kidney stones, risk of malignancy and preemptive KT strategy[1,2,5]. Similarly, the current results revealed that the rate of KTIN was higher in patients who had preemptive KT[1]. The latter KT strategy is now an important issue in the literature representing a prominent indication of KTIN in patients with ADPKD, especially with the living donor KT. In regards to the asymptomatic patients who have a possibility of accessing preemptive KT, the number of surgeries can be reduced and the residual kidney functions and diuresis can be preserved until the time of KT surgery[4].

As the authors stated in their methods, the retroperitoneal surgical approach should be used to avoid the involvement of the peritoneal cavity and its contents. In the case of transperitoneal nephrectomy, lymphorrhea and hypoalbuminemia may represent serious complications, threatening the graft and patient survival. We had a serious experience with 2 cases of transperitoneal bilateral KTIN for ADPKD. The indications of the transperitoneal approach were the need of bilateral native nephrectomy and a history of previous surgery on the native kidneys. Prolonged lymphorrhea and hypoalbuminemia represented serious challenges in the management of one of our patients. Also, a very rare incident of pathology in the form of concomitant ADPKD and primary oxalosis was confirmed in the other patient. Both patients died with septicemia after a consecutive series of comorbidity and complications that were empowered by the transperitoneal approach. Hence, we may mention that the safety of KTIN is not absolute, especially when another major pathology coexists. In concordance, many drawbacks have been reported, including the prolongation of the time of surgery, increased need of blood transfusion and increased rates of early urinary tract infections[3]. On the other hand, bilateral native nephrectomy may have advantages when approached *via* the laparoscopic and robotic-assisted techniques in these cases, but the challenges and outcomes of these techniques are still controversial[6-8]. In any case, all of these unfavorable effects warrant proper surgical planning and prompt management of the medical and surgical sequels evolving during the perioperative period which may have a great effect on the whole of KT outcomes.

A recent systematic review by Xu *et al*[5] reached similar conclusions in regards to the vascular complications and safety of KTIN. This meta-analysis revealed that there was no evidence to support that the KTIN procedure increases the rates of the perioperative mortality and complications[5]. Finally, we believe that this study can be considered a step forward in providing cumulative strong evidence for the superiority of KTIN against the staged surgery. Accordingly, we should recommend a critical justification of the indications and timing of the native nephrectomy in patients with ADPKD

undergoing KT. Also, the retroperitoneal approach should be strictly used in these cases. Finally, efficient and meticulous hemostasis and ligation of the renal lymphatics should be performed.

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## FOOTNOTES

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