Transplantation of kidneys with small renal tumors: A novel idea?

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SUMMARY

The authors in this case series reviewed their single-center experience with transplantation of kidneys removed from patients with small (<3 cm) incidentally detected renal lesions with a presumed diagnosis of renal cell carcinoma (RCC). Between May 1996 to July 2004, 43 patients were transplanted from donors who had small renal lesions. This included three diseased donors from whom both kidneys were transplanted and 38 undergoing radical nephrectomy (RN) for a presumed RCC. The recipients were above 60 years with multiple comorbidities and a significant prospect of death without transplantation. Rigorous informed consenting was done highlighting the possibility of tumor recurrence and death due to metastatic disease. Patients opting for RN were approached after making their treatment decision to ask if these could be used for transplantation. The lesions were excised from tumor-bearing kidneys at bench, frozen section analysis to confirm a clear margin was done and subsequently these kidneys were transplanted. Histologically 25 were clear cell carcinomas, 5 papillary, 1 chromophobe, and 10 were benign. Two required re-explorations because of perinephric hematoma and calyceal fistula postoperatively. Seven had a rejection episode requiring pulse steroids. The mean follow up was 32 months. Except one all maintained graft function with serum creatinine levels of 0.09-0.31 mmol/L. Four died with functioning grafts due to unrelated causes. Follow up was done with three monthly ultrasounds, chest X-rays, and biochemical investigations. There was one tumor recurrence at nine years after transplantation in a 71-year-old man who refused any intervention for the same. The lesion increased from 1.0 cm to 1.2 cm on serial ultrasounds in 18 months of follow up.

COMMENTS

The shortage of donor organs represents the single greatest challenge in renal transplantation. Increasing the donor pool by using marginal donors, spouses, and nonheart-beating deceased donors has not been able to meet the demand for donor kidneys. This paper reviews the effects on recipients of using kidneys where the donor has had a renal mass. This study is commendable for the stringent selection criteria used. The recipients were all old with multiple comorbidities on long-term dialysis and a significant prospect of death without transplantation. The issue of transplantation was brought to the donors following a decision for RN by the treating surgeon. Intensive consenting was done to the recipients as to their chances of complications due to surgery and in follow-up. There were 43 patients, 31 had proven RCC on histology with one recurrence at 9 years of follow up. Though at the outset it seems like a good bargain for the recipient there are several concerns with this concept. Firstly, till date the biological behavior of RCC is unpredictable. Though the reported incidence of recurrence or metastasis with masses <3 cm in size is from 1-5%, there is currently no mechanism to establish the likely disease course of an incidentally detected renal tumor.[1, 2] Until the availability of biological markers it would be very difficult to substantiate transplanting such kidneys. Secondly, this study includes patients from 1996-2004, a time when RN was the accepted modality of treatment for even small presumed RCCs. The concepts in the last few years have changed and tilted the best practice recommendation toward nephron sparing surgery. This is because up to 30% of such small lesions can be benign making RN superfluous.[3] With the high sensitivity of USG/CT guided FNAC/FNAB establishment of diagnosis of malignancy is warranted before intervention. Also, patients with RCC are at an increased risk of chronic kidney disease.[4] Radical nephrectomy was proven in a study from Sloan-Kettering Memorial Cancer center to be an independent predictor of a low GFR (<60 ml/min/1.72 m²). In light of these new findings nephron sparing surgery should be offered to those in whom surgical removal of lesions is contemplated. Thirdly, there is a potential for misuse of these patients with a shift of focus from being renal tumor patients to being prospective donors. It could lead to a potential market resulting in indiscriminate RNs for financial/personal gains. Ethical considerations and

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informed consenting, especially in a country like ours, would be difficult to enforce and patient preference would be used as an excuse for such practices. Lastly, as such there is increased incidence of RCC in allograft recipients up to 100 times more than in the general population. Transplantation of kidneys with proven RCC may increase the incidence of recurrence or metastasis even more. Though there appears to be a reasonable oncological and safety profile for recipients in the present study there are overwhelming considerations of this approach of stretching the donor pool a bit too far.

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