Renal Cell Carcinoma in a Transplanted Kidney: Successful Organ-Preserving Procedure

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Key Words
Renal cell carcinoma  
Renal transplantation  
Nephron sparing surgery

Abstract
We report a case of a de novo renal cell carcinoma in a transplanted kidney, which was detected 3 years after the transplantation. The tumor was excised under hypothermia and perfusion. Immunosuppression was not stopped and the function remained excellent. Close-mesh follow-up of 45 months showed no evidence of recurrence or metastasis.

Discussion
The Cincinnati Transplant Tumor Registry (CTTR) recorded 24 de novo renal cell carcinomas (RCC) developed in a renal allograft [1], The management in that situation is controversial. The most reliable procedure is to perform a transplant nephrectomy, because the immunosuppression can be stopped subsequently. On the other hand, the patient has to return to dialysis. There are only few reports on conservative surgery on a transplant kidney tumor [2].
In case of a small tumor in a solitary kidney partial nephrectomy has become established as an effective treatment option [3,4].

In this immunosuppressed patient presenting a neoplasm in the transplanted kidney, first allograft nephrectomy was considered, but the patient refused to return to dialysis. The tumor proved to be resectable (fig. 2, 4), so an organ-preserving operation was performed. Follow-up demonstrates no recurrence up to now and a persisting excellent renal function.

Since 1954 [5], more than 350,000 renal transplantations were performed worldwide. De novo cancer in the graft occurred very rarely [1]. In 14 instances, CTTR registered renal carcinoma in a cadaver donor, which were excised or biopsied in 7 cases and subsequently transplanted nevertheless [1]. In view of the high incidence of the development of carcinoma in end-stage kidneys [6], we performed a repeated staging but did not find any evidence of a tumor in the original kidneys. In our patient de novo genesis is suggested as the donor kidney was completely macroscopically at the time of transplantation.
Fig. 1. Exophytic tumor in the renal allograft. Ultrasound findings 3 years after transplantation.
Fig. 2. CT scan showed a peripherally located tumor.
Fig. 3. Intraoperative situation after perfusion and cooling. Renal artery isolated and snared with a vessel loop.
Fig. 4. Totally resected tumor: renal cell carcinoma stage T1 G1.

References

Renal Graft Preserving Tumor Resection
Urol Int 1996;56:110-III
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