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LETTER TO THE EDITORS

# Renal Transplantation with grafts affected by tumors: learning from a 'near miss' case

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Dear Editors,

It is common sense that one of the major problems for renal transplantation – and transplantation in general – is the discrepancy between the donor and recipient numbers with far less donor than recipients. As a consequence, patients with renal failure have to wait for a long time before they can be offered an allograft.

In this frame of universal shortage of organs, efforts have been made to overcome it by exploring new sources of grafts by taking various measures including the use of marginal donors to increase the donor pool along with measures to improve and prolong graft function and survival.

An additional potential area, first described by Penn [1], has been to transplant kidneys after *ex vivo* resection of small tumors. This was a very radical idea, because firstly, there has been evidence of transmission of donor-derived malignancy into recipient [2]. Surprisingly, outcomes of the patients described in Penn's series were not as bad as could have been anticipated.

Literature stands equivocal upon these donors with many centers, suggesting using these grafts under specific indications [2–5] and others supports its full rejection [6]. We have presented our experience on the issue by the first and only case of donor-origin malignancy in Greek national registry, when incidentally, the contralateral kidney of a donor with a 1.8 cm lesion with type-2 papillary renal cell carcinoma (PRCC) was successfully implanted to a recipient [7]. The aim of this report is to further discuss the rationale behind using this kind of grafts under the angle of a novel case.

A 58-year-old woman deceased donor offered two kidneys in two recipients in our renal transplant center. The patient had no personal or family medical history of malignancies. The cause of her death was subarachnoid hemorrhage. She was on antihypertensive drugs. The left kidney presented with a solid red-cortical nodule of the outer surface with a maximum diameter of 2.5 cm, during the back-table procedure, which was completely excised with wide and free margins and sent for frozen section (FS). This finding was not described in the renal ultrasound examination that was made to the donor before the harvesting of the organs. The results were positive for malignancy. Thus, the surgical team found this graft as inappropriate and decided not to proceed to its implantation. It was sent to the Pathology Laboratory for its final histological examination. The final report of the left kidney revealed clear cell renal cell carcinoma (CCRCC), Fuhrman 2 (pT1a).

The right kidney graft was also procured without any obvious lesions as far as its anatomy and morphology are concerned. The patients who were candidates for renal transplantation for the contralateral (right) kidney were objectively and meticulously informed about the results of the histological report of the left kidney, and none of them gave informed consent to proceed to the transplantation. Then, the graft was offered to the other transplantation units of the country, but none of them agreed to implant it. After these procedures and as the cold-ischemia time exceeded 72 h, this graft was also thought as inappropriate and was sent to Pathology for final histological examination, which revealed a 0.8 cm lesion with type-1 PRCC, Fuhrman 2 (pT1a).

To our knowledge, this is the first case of concomitant different types of RCC in kidneys offered for transplantation. Normal practice when confronted with a tumor of kidney on procurement is to have an excision biopsy and histological confirmation of clear margins before any of the organs can be transplanted [8]. The incidence of RCC in the deceased donors was estimated at 0.9% [9]. In these cases, some authors also believe that the contralateral kidney cannot be used as well because of the concerns of micro-metastasis and bilaterality of some of the RCCs [8]. If one kidney is found to have a tumor, it is important that the other kidney is closely followed up. It is easier in the live donor setting, but in deceased donation, there has to be a central database for tracking the contralateral kidney which might be transplanted into a recipient in a different unit. It is of major interest as the transplantation of contralateral healthy kidneys from deceased donors is associated with a relatively high cancer



 

recurrence rate at 4.8% [10]. Bilateral synchronous renal cancer is potential source for cancer dissemination and recurrence after transplantation of the contralateral kidney from deceased donors with unilateral renal cancer [10].

All in all, usage of such organs is still in its infancy and more large studies should be conducted in order to draw specific guidelines. Clinical alertness and multidisciplinary involvement of transplant surgeons and pathologists is imperative.

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## Conflicts of interest

The authors have no potential conflicts of interest.

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