Invited comment

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Kidney transplantation in patients previously treated for renal carcinomas

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When a carcinoma of the kidney has been totally eradicated, no recurrence should occur, no matter when transplantation is subsequently performed or what immunosuppressive agents are used. However, when residual cancer cells are left behind, either locally or distantly as micrometastases, they will eventually become clinically evident. This process may be accelerated by immunosuppressive therapy, which hinders the host's immune attack on the malignant cells. Because we often cannot be certain that every cancer cell has been eliminated, a waiting period is desirable, so that recurrences can be detected and precious kidney allografts will not be wasted on patients with a poor long-term prognosis. How long should this waiting period be? In some favorable cases, no waiting period may be necessary. No recurrences were observed in 66 patients with asymptomatic renal carcinomas that were discovered fortuitously, either when the patients were worked up for some unrelated condition or when the patient's own diseased kidneys were removed for some indication, such as severe hypertension [3, 4]. Fifty-nine of these patients had been treated from 56 months before transplantation to the time of transplantation and seven had been treated after transplantation. Most of these tumors were probably small when discovered and had a good prognosis. Studies have shown that the incidence of metastases is related to the size of a renal carcinoma, with small tumors unlikely to cause metastases [1]. In the past, small tumors (< 3 cm in diameter), even though histologically malignant, were arbitrarily labelled as renal "adenomas" [2]. Wiggins et al's case 1 would fit into this category.

The experience with symptomatic renal carcinomas (excluding Wilm's tumors), cited by the authors in references 4 and 5, has now been extended to encompass 169 patients, many of whom have been treated in the cyclosporin era [3, 4]. A retrospective study showed that in 51 patients who developed recurrences, 31 (61%) had been treated less than 2 years before transplantation, 17 (33%) between 2 and 5 years before transplantation, and 3 (6%) more than 5 years before transplantation. Twenty-six (51%) of these 51 patients had had bilateral tumors treated pre-transplantation [4]. Theoretically, a 5-year wait between treatment of the cancer and transplantation would have eliminated 94% of the patients who were destined to develop recurrences or metastases. Such a long waiting period on dialysis is often not practicable, and a 2-year waiting period was, therefore, recommended. At least this would have eliminated 61% of the patients who were destined to develop recurrences from consideration for transplantation. Wiggins et al. believe that they can detect recurrences much earlier by the use of CAT scans and NMR. However, these tests are not infallible. On several occasions I have, at laparotomy, discovered 1-cm sized flat surface metastases in the livers of patients who had been previously treated for carcinomas of the colon or breast and who had had negative CAT scans. Similarly, laparoscopy has shown metastases missed by CAT or NMR scanning. Routine CAT or NMR scans cannot detect lesions smaller than 5–10 mm in diameter. Furthermore, some recurrences may grow very slowly. For example, a patient who had a renal carcinoma treated 13 months before transplantation did not have any recurrence detected until 39.5 months after transplantation.

Careful selection of potential renal transplant recipients who have been treated for renal carcinomas is necessary. I firmly believe that a 2-year waiting period for patients with symptomatic renal carcinomas is reasonable for most patients.

Reference

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2. Bennington JL (1973) Cancer of the kidney – etiology, epidemiology, and pathology. Cancer 32: 1017–1029
3. Penn I (1992) The effect of renal transplantation in patients with a history of curative cancer therapy. In: Stewart THM, Wheelock EF (eds) Cellular immune mechanisms and tumor dormancy. CRC Press, Boca Raton, pp 239–260
4. Penn I (1993) Effects of immunosuppression on pre-existing cancers. Transplantation (in press)