Kidney transplantation has improved the quality of life in patients with end-stage renal disease (ESRD). However, transplant patients due to the use of immunosuppressive drugs, have increased risk of malignancy. One of the devastating scenarios is donor cancer transmission because it is frequently fatal (1-4).

Short tandem repeats (STR) are repeated 2-6 base pairs DNA sequences within the genome (5). STRs are highly variable in different alleles. STR analysis is used for individual identification. We report a case of transmission to two kidney recipients proved by STR analysis.

Case Report

Donor
62-year-old male.
No past medical history of malignancy.
History of heavy smoking.
Donated both kidneys.

Recipient 1
75-year-old male.
ESRD due to systemic lupus erythematosus.
Transplanted left kidney successfully.
After 14 months, acute kidney failure occurred. Liver biopsy performed.
After 1 month, he passed away.

Recipient 2
63-year-old male.
ESRD due to diabetes.
Transplanted right kidney successfully.
Renal function improved.
After 13 months, acute kidney failure occurred. Transplant nephrectomy performed.

Donor-derived Neuroendocrine Carcinoma Transmission to Two Kidney Transplant Recipients Demonstrated by Short Tandem Repeat Analysis

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STR Analysis (Locus D5S818) for Recipient 1 Recipient 2 and Their Tumors and the Donor.
X-axis indicates number of STR units. Y-axis indicates fluorescence.

Demonstration of Cancer Transmission by STR Analysis
1. The STR of Recipient 1 (Blood) is different from that of his tumor.
2. The STR of Recipient 2 (Blood) is different from that of his tumor.
3. The STRs of the tumors in both Recipient 1 and 2 are identical to that of the Donor (Blood).

Reference

Disclosures
We have nothing to disclose.