

CASE REPORT

Occult Donor Malignancy in Pancreas Transplantation

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Tumor of the pancreas allograft is extremely rare. We report a case of an occult donor malignant undifferentiated tumor arising in a pancreas allograft. A 42-year-old female with Type 1 diabetes received a macroscopically normal pancreas allograft. The donor was a 22-year-old male who died of spontaneous intracerebral hemorrhage. She underwent transplant pancreatectomy, the histology of the pancreas allograft demonstrated a tumor measuring 5 mm in diameter, and a diagnosis of malignant undifferentiated tumor was made. In a different transplant center, the recipient of the left kidney transplant from the same donor had a nephrectomy, and the recipient of the liver transplant died of metastatic disease. Microscopic examination of the liver and kidney allografts subsequently revealed histological features identical to the pancreas tumor. Tumor transmission in transplantation may occur from an organ that contains metastatic cells or, less commonly, from the transmission of an unrecognized or occult primary tumor. A report from the United Network for Organs Sharing transplant data 1997–2002 is illustrated and discussed. This case illustrates the difficulties associated with identifying donors with occult primary tumor or metastases.

Keywords pancreas, transplant, malignant undifferentiated tumor, transmission

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Tumor of the pancreas allograft is extremely rare. Roza et al. first reported a pancreas adenocarcinoma arising in a pancreas allograft.^[1] Tumors may be transmitted from a donor to a transplant recipient.^[2–4] We report a case of an occult donor malignant undifferentiated tumor (MUT) arising in a pancreas allograft.

In June 2002, a 42-year-old female with Type 1 diabetes received a macroscopically normal pancreas allograft. The donor was a 22-year-old male who died of spontaneous intracerebral hemorrhage. She underwent transplant pancreatectomy 12 hours after transplantation due to excessive hemorrhage. The histology of the pancreas allograft demonstrated a tumor measuring 5 mm in diameter, and a diagnosis of malignant undifferentiated tumor was made due to the lack of specificity of CD117 immunostaining. Two and one-half years later, she remains well with no evidence of neoplasia. In a different transplant center, the recipient of the left kidney transplant from the same donor had a nephrectomy in 2003, when a mass was detected on ultrasound. However, the recipient of the liver transplant died of metastatic disease. Microscopic examination of the liver and kidney allografts subsequently revealed histological features identical to the pancreas tumor.

Tumor transmission in transplantation may occur from an organ that contains metastatic cells or, less commonly, from transmission of an unrecognized or occult primary tumor.^[5] United Network for Organs Sharing (UNOS) transplant data 1997–2002 illustrated that in 21,249 donors in heart/lung, heart, intestine, kidney/

Table 1
UNOS post-transplant donor related malignancies reported at any follow-up, January 1, 1997–December 31, 2002

Number of transplants	Percentage of transplants		
Heart/lung	264	0	0.0%
Heart	13,187	0	0.0%
Intestine	198	0	0.0%
Kidney	78,557	9	0.0%
Kidney/pancreas	5,459	0	0.0%
Liver	27,846	10	0.0%
Lung	5,746	5	0.1%
Pancreas	2,141	0	0.0%
Total	133,398	24	0.0%

Based on OPTN data of June 29, 2004.

pancreas, and pancreas transplantation, there was no evidence of donor related malignancy (see Table 1).

However, there were 24 cases of donor related malignancy out of 112,149 isolated kidney, liver, and lung transplantations. The highest donor related malignancy was 0.1%, seen in the lung transplant recipients.

At the procurement of the donor organs, routine inspection and palpation revealed no abnormalities. The immunosuppression may have accelerated the tumor growth or metastasis in the kidney and liver recipient. This case illustrates the difficulties associated with identifying donors with occult primary tumor or metastases. Although the risk is seemingly minute, the case illustrates the very real potential for occult malignant carcinoma transmission in solid organ transplantation, seen even in low-risk donors with devastating effects. This case poses some interesting ethical and clinical dilemmas. Is there more we could or should be doing to attempt to identify occult malignancy in organ donors? An approach of radiological screening or autopsy^[3] in all potential organ allograft is unlikely to be cost-effective, given the small numbers so far recorded above. However, we look forward to the results of the Emilia-Romagna screening protocol for all

multiorgan donors at the national level in Italy^[6] to clarify the issue. The management of recipients with potential donor transmitted malignancy is difficult.^[3,4] This case highlights the importance of prompt communication between transplant centers when a donor transmitted malignancy is discovered in one of the organs. Early removal of allograft may be the safest option.

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