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Transmission of synovial sarcoma by a single multiorgan donor to three solid organ transplant recipients: Initial report in China.

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Background: The increasing use of marginal donors leads to a risk of donor-derived malignancy (DM). Intrapulmonary synovial sarcoma (SS) is unsuitable for organ donation, however, sometimes it is indistinguishable from solitary fibrous tumor (SFT) at the time of donation, which is not contraindication, leading to unexpected DM. Here, we report the first rare case of donor-derived synovial sarcoma (DSS) by a single multiorgan donor in China.
Methods: All recipients were reviewed and followed up. Allograft malignancies were diagnosed by histopathology and DM was proven by DNA microsatellite.
Results: The 14-year-old female donor was died of respiratory failure caused by a big intrapulmonary tumor in October 2017, which was diagnosed with an SFT before organ procurement by biopsy. However, all of the three recipients developed DSS consecutively after organ transplantation.
Recipient 1 was a 43-year-old male who received the left kidney. 9 months after transplantation, multiple lesions in the allograft kidney were found by ultrasound and CT scan. PET-CT showed a tendency to malignancy, without metastasis. SS was initially diagnosed by biopsy and confirmed by final histopathology following allograft nephrectomy. DM was proven by DNA microsatellite. After nephrectomy, hemodialysis was resumed and immunosuppression was stopped. 4 months later, CT scan showed diffuse pulmonary metastases. He received targeted therapy with Anlotinib and metastases were reduced during follow-up.
After the warning of DM, regular tumor screening was performed for recipient 2 who was a 33-year-old male and received the right kidney. Unfortunately, he developed a single lesion in the allograft kidney 13 months after transplantation. Biopsy showed the same result with recipient 1. He received radiofrequency ablation in order to preserve the allograft function. The patient was alive without tumor recurrence or metastasis.
SS was also found in allograft liver of recipient 3, which was primarily considered to be a liver cancer recurrence and a resection of left lateral lobe of liver was performed. However, final histopathology showed the same result with allograft kidneys. Recurrence in his right lobe of allograft liver was found 11 months after partial hepatectomy. He was now alive without metastasis.
Conclusions: Intrapulmonary SS is sometimes easy to be misdiagnosed as SFT at the time of donation, leading to unexpected DM. Thus, the donor with a diagnosis of intrapulmonary SFT should be used cautiously unless emergency. Precise diagnosis of potential malignancies before organ donation is essential and final histopathology is required instead of biopsy only.

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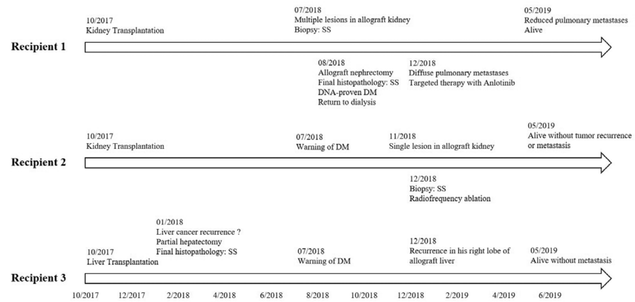
10/2017
Kidney Transplantation
07/2018
Multiple lesions in allograft kidney
Biopsy: SS
05/2019
Reduced pulmonary metastases
Alive
Recipient 1
08/2018
Allograft nephrectomy
Final histopathology: SS
DNA-proven DM
Return to dialysis
12/2018
Diffuse pulmonary metastases
Targeted therapy with Anlotinib
10/2017
Kidney Transplantation
07/2018
Warning of DM
11/2018
Single lesion in allograft kidney
05/2019
Alive without tumor recurrence or metastasis
Recipient 2
12/2018
Biopsy: SS
Radiofrequency ablation
01/2018
Liver cancer recurrence ?
Partial hepatectomy
Final histopathology: SS
10/2017
Liver Transplantation
07/2018
Warning of DM
12/2018
Recurrence in his right lobe of allograft liver
05/2019
Alive without metastasis
Recipient 3
10/2017 12/2017 2/2018 4/2018 6/2018 8/2018 10/2018 12/2018 2/2019 4/2019 6/2019