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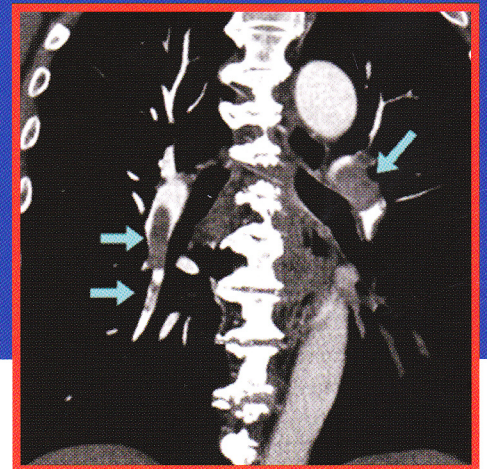
ISSN 0919-8172

INTERNATIONAL JOURNAL OF **UROLOGY**

Volume 19

Number 3

March 2012



**WILEY-
BLACKWELL**

Letter to the Editor**Pulmonary embolism caused by spontaneous migration of tumor thrombus of renal cell carcinoma: A report of two cases**

Herein, we report two cases of tumor embolism caused by spontaneous migration of tumor thrombus from renal cell carcinoma (RCC).

Case 1

A 66-year-old man was admitted to Tohoku University Hospital in Sendai, Japan, complaining of low-grade fever and weight loss of 11 kg over a period of 8 months. Chest and abdominal computed tomography (CT) showed a large left renal tumor extending into the inferior vena cava (IVC) at the level of the infrahepatic vein with regional lymph node, but no distant metastases (Fig. 1a). While he was awaiting surgery, sudden chest pain and shortness of breath occurred. There was a drop in his blood pressure of

approximately 30 mmHg (95/56 mmHg) and oxygen saturation showed 92%. Chest CT showed massive pulmonary emboli in both pulmonary arteries (Fig. 1b), and a portion of the IVC tumor thrombus had disappeared. Emergency pulmonary embolectomy of both pulmonary arteries was carried out under cardiopulmonary bypass. The emboli were almost completely excised under direct vision. After pulmonary and cardiac functions recovered 24 days later, a left nephrectomy with caval thrombectomy was carried out. A pathological review showed RCC in samples from both the kidney and pulmonary artery. The patient was discharged uneventfully 38 days after embolectomy. He received adjuvant immunotherapy 1 month after nephrectomy (interferon alpha, 3 million units, 3 times per week), but died 9 months later as a result of respiratory failure caused by lung metastasis.

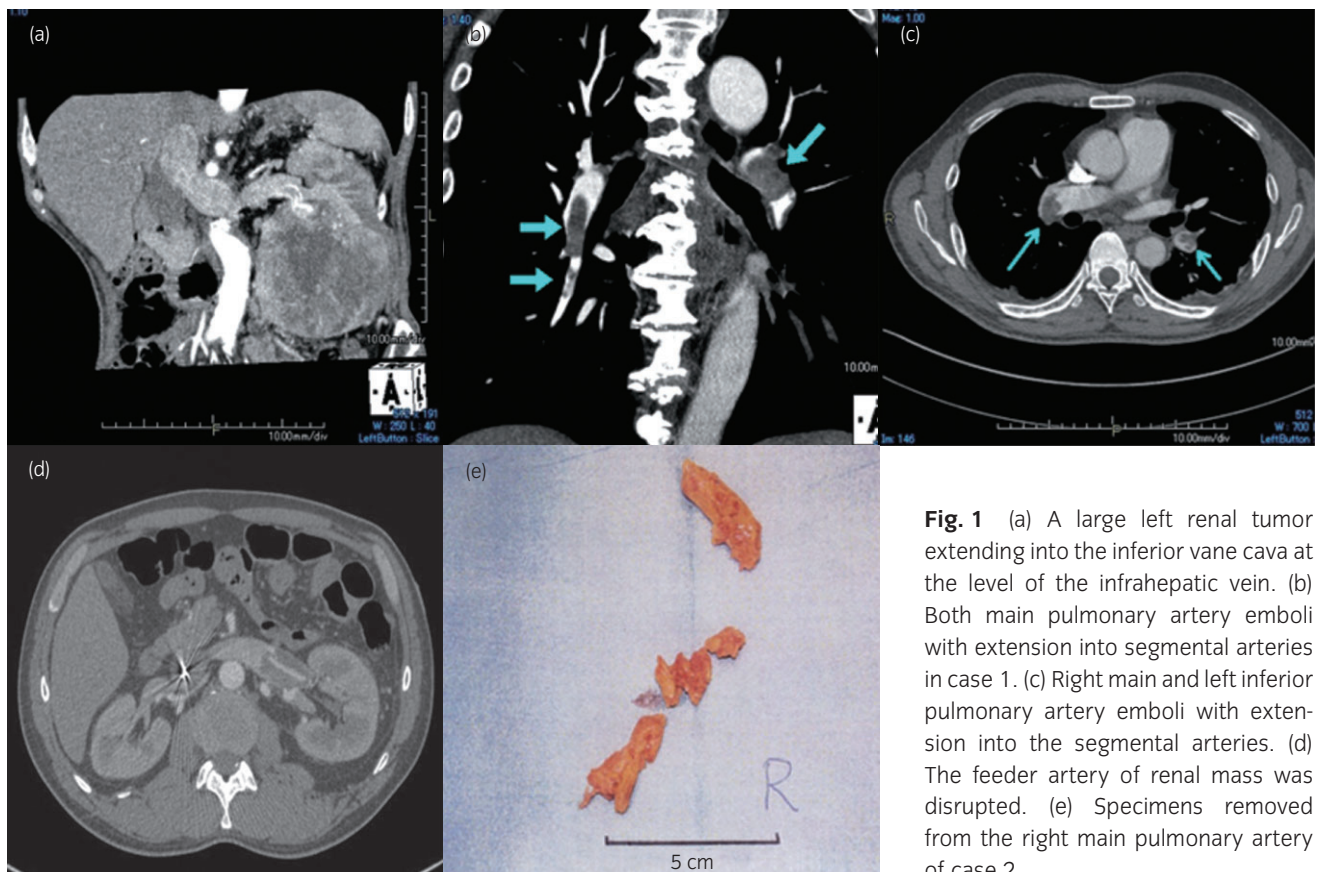


Fig. 1 (a) A large left renal tumor extending into the inferior vane cava at the level of the infrahepatic vein. (b) Both main pulmonary artery emboli with extension into segmental arteries in case 1. (c) Right main and left inferior pulmonary artery emboli with extension into the segmental arteries. (d) The feeder artery of renal mass was disrupted. (e) Specimens removed from the right main pulmonary artery of case 2.

Case 2

A 56-year-old man suffered from sudden shortness of breath and loss of consciousness during a soccer game, and was brought to the emergency medical care center. He was intubated, temporarily placed on a ventilator and percutaneous inferior vena cava filter. A CT scan showed massive obstruction of the right main and left lower pulmonary arteries (Fig. 1c), and there was a left renal tumor extending into the renal vein. The feeder artery of the renal vein tumor thrombus was disrupted (Fig. 1d), showing that the pulmonary embolism was probably caused by the spontaneous migration of the tumor thrombus. As initial anticoagulant therapy with 15 000 units of heparin was not effective, surgical embolectomy of the both pulmonary artery was carried out. A few of the emboli could not be removed because of fixation to the vessel wall (Fig. 1e). A total of 15 days after embolectomy, a left nephrectomy and renal thrombectomy were carried out. The patient was discharged uneventfully from our hospital and is undergoing follow up in an outpatient clinic without recurrence.

Generally, treatment of clinically insignificant pulmonary tumor embolism is directed at the primary tumor. However, pulmonary embolectomy is necessary in patients when there is migration of the tumor thrombus to the large, central pulmonary arteries.¹ Interestingly, tumor emboli do not necessarily develop into pulmonary metastasis.² Furthermore, metastasis of tumor emboli would occur

slowly over time. Successful removal of pulmonary emboli secondary to RCC has been reported in 13 cases, including our two cases, and favorable short-term survival has been documented. These severe cases require surgical pulmonary embolectomy with or followed by nephrectomy as soon as possible to reduce fatal events of massive pulmonary tumor embolism.

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Conflict of interest

None declared.

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