Paradoxical embolism of the right kidney

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Case presentation: A 40-year-old man presented with shortness of breath, pleuritic chest pain and tachycardia. Five weeks before, the patient was admitted to the hospital due to the fracture of the fifth metatarsal bone of the left foot. The patient was put in a cast for 4 weeks. Pulmonary embolism (PE) was confirmed by a ventilation/perfusion lung scan. Immediately after admission, the patient started to complain about a sharp pain in his right lumbar region. Echocardiography revealed a dilated right ventricle and pulmonary hypertension of 70 mmHg (**Figure 1**). A CT-angio scan confirmed a massive PE and showed an infarction of the right kidney (**Figure 2**). Thrombosis of the left popliteal vein was confirmed by ultrasound. Transesophageal echocardiography revealed a patent foramen ovale (**Figure 1**). After the initial treatment with low molecular weight heparin,

the patient became hypotensive and elevated levels of troponin were registered. The patient was transferred to the Coronary Care Unit and treated with alteplase. After the treatment, a normalisation in the both right ventricle diameter and right ventricular systolic pressure was noted. The patient was hemodynamically stable with full regression of his symptoms. A postprocedural Doppler ultrasound showed recanalisation of the right renal artery.

Conclusion: Paradoxical embolism and intracardiac shunt should be immediately considered when PE and systemic arterial embolism co-occur. Treatment mainly consists of thrombectomy or thrombolysis.

KEYWORDS: paradoxical embolism, patent foramen ovale.

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Figure 1. Showing clockwise from top left: distention of the right ventricle, pulmonary hypertension, flow across the pulmonary valve (transthoracic echocardiogram) and patent foramen ovale (transesophageal echocardiography).

Figure 2. Contrast enhanced computed tomography showing clockwise from top left: emboli in the both pulmonary arteries, distention of the right ventricle, infarction of the right kidney, emboli in both pulmonary arteries.

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Literature

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