中文題目：左心室動脈瘤血栓合併左腎臟梗塞與 wafarin 引發之急性腎損傷

英文題目：Mural thrombus in left ventricular aneurysm complicated with left kidney infarction and warfarin-related acute kidney injury

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Case presentation

A 60-year-old male was admitted to our hospital from the emergent department because of severe lower abdominal pain associated with gross hematuria.

The patient had been well with chronic diseases including hypertrophic cardiomyopathy, hypertension, hyperlipidemia, hepatitis B carrier, and gout. He also had left ventricular (LV) apical aneurysm which was diagnosed by echocardiography and heart CT scan during his stay in Canada about 3 years ago. For mural thrombus in the LV aneurysm, he had received anti-coagulant treatment with apixaban from December 2013 to November 2016 when apixaban was stopped due to worse hematuria. Since April 2015, he had been followed-up at our Urology outpatient department for hematuria. Unfortunately, about two months after the anticoagulant was discontinued, left kidney infarction attacked in January 2017 with presentation of severe lower abdominal pain associated with hematuria.

On evaluation in the emergent department, the abdominal CT revealed wedge-shaped low-density lesion in the upper pole of left kidney without enhancement during contrast phase and suggested the diagnosis of acute kidney infarction. He had no fever, vomiting, or dysuria. Parenteral infusion of heparin was administered and 2 days later warfarin was initiated. During the hospitalization, the anti-hypertensive agent valsartan was discontinued because slight elevation of creatinine level from 1.24 to 1.45 mg/dL was noted. Only amlodipine was continued for his blood pressure control. His blood pressure was relatively stable during the ward care and was around 127/84 mmHg, with pulse rate was 78- 93/ min. After the INR value 1.12 was reached, heparin was discontinued and he was discharged from the ward. During his Cardiology outpatient department follow-up, warfarin was continued with monitoring of INR, which was between the values of 1.09 and 2.61. Nevertheless, deterioration of renal function was noted after 3 months of warfarin treatment. Nephrologist was consulted and wafarin-related acute kidney injury was impressed. Therefore, warfarin was gradually tapered down, and shifted to apixaban at 2.5mg twice daily. The creatinine level was stationary and stayed around 2.25 mg/mL after warfarin was discontinued.

To differential diagnose the etiology of his acute kidney injury, the renal cortical scintigraphy (Tc99m (III) DMSA) was performed and the findings suggested obstructive nephropathy over right

kidney and infarct avidity in the left upper central cortex. The patient refused to receive the kidney biopsy. In June 2017, another abdominal CT with enhancement was performed and suggested urothelial tumor at the right upper calyx and right UV junction after biopsy. At the meantime, Tc99m DTPA renal scintigraphy with a diuretic protocol indicated asymmetrically reduced right renal function and moderately reduced left renal function (left GFR: 29.4 ml/min; right GFR: 15.4 ml/min). Right kidney function impairment was most likely related to the suspected malignancy, and left kidney function impairment was suggested partially related to previous infarction. The contribution of warfarin-induced injury to both kidneys cannot be excluded.

The latest echocardiography in September 2017 revealed a persistent mural thrombus in the LV aneurysm, therefore the apixaban was resumed. His renal function, although with impairment, was stationary. The malignancy of right kidney was proved by pathology as high grade infiltrating urothelial carcinoma by the retrograde cystoscope biopsy in June 2017. The patient was still hesitating about the advice therapeutic plans including surgical intervention and chemotherapy. There had been no detectable, recurrent thromboembolism event until the time of this documentation.

Discussion

Several learning issues about this presented case will be review and discussed. First, what is the actual risk for a mural thrombus in LV apical aneurysm to be complicated with systemic thromboembolism such as kidney infarction? Second, what is the pathogenesis for warfarin-induced kidney injury? And is there any predictor for warfarin-induced kidney injury? Third, is there any contributing role of the patient’s urethral carcinoma to his previous kidney infarction? Finally, is there any evidence-based guideline for managing the cases of the mural thrombus in LV aneurysm before and after it is complicated with a systemic thromboembolic event?