An active 60-year-old man presented with a 3-month history of palpitations and a sudden discomfort in the right foot with subsequent coolness and numbness of the right toes. The patient was in atrial flutter with a ventricular rate of 136 beats/min. An echocardiogram showed moderate to severe left ventricular (LV) systolic dysfunction with an ejection fraction of 30%. A spherical echo density measuring 2.2 cm was noted in the LV apex. This mass was suggestive of an LV thrombus. The patient was admitted to the hospital for anticoagulation using warfarin, enoxaparin, and aspirin. A cardiothoracic surgical consult was obtained to discuss the option of surgical removal of the thrombus or a course of anticoagulants, and a cardiovascular magnetic resonance imaging study was requested for tissue characterization of the mass.

The cardiovascular magnetic resonance examination was started at 1:43 PM. Routine cine short and long axis views were obtained using real-time imaging due to the arrhythmia. Global LV systolic function was severely decreased with diffuse hypokinesis. A mobile mass measuring 2.6×1.3×1.4 cm in size was seen attached to the LV apex by a thin, thread-like stalk (Figure 1). At 2:01 PM, only 2 minutes after the thrombus had last been visualized, the mass was no longer seen in the short axis apical view. This was confirmed on the 4-chamber view (Figure 2). On inquiry, the patient reported mild right-sided back pain that he attributed to lying supine. The patient had no symptoms of slurred speech, headache, blurred vision, or extremity pain or weakness, and he was hemodynamically stable. Limited additional imaging was performed to confirm the absence of intracardiac mass, and the examination was terminated to allow for rapid transfer of the patient back to the floor and close monitoring of hemodynamic and neurological status.

A computed tomography scan of the thorax, abdomen, and pelvis was performed at 4:39 PM. The computed tomography scan showed multiple bilateral renal emboli (Figure 3). As an incidental finding, the patient was noted to have bilateral dual renal arteries. Because of the patient’s clinically stable condition, the anticoagulation regimen was continued, and no additional medical or surgical measures were pursued. By the time of discharge, the patient’s atrial flutter was rate controlled with escalating doses of metoprolol, digoxin, and diltiazem. His renal function was essentially unchanged from admission to discharge and at 1-month and 3-month follow-ups, with serum creatinine levels of 1.3 to 1.4 mg/dL.

On a follow-up cardiovascular magnetic resonance study performed 3 months later, the arrhythmia had resolved and the LV systolic function had markedly improved, with an ejection fraction of 55%. There was no recurrence of intracardiac thrombus.

Cardiac thrombi occur in 8 to 14% of patients with atrial fibrillation and 10% to 20% of patients with nonischemic cardiomyopathy. The cause of this patient’s LV apical thrombus was presumably related to uncontrolled atrial flutter...
with a tachycardia-induced cardiomyopathy. Peripheral embolization reportedly occurs in 1.6% to 12%1,4 with the higher end attributed to a nonischemic cardiomyopathy. It is possible that the actual embolic rate is higher; however, many of the events are subclinical, as demonstrated in the present case, and may go undetected. Certainly, had our patient not been in the magnetic resonance imaging scanner at the time of embolization, this thromboembolic event might not have been discovered. There is no reason to suspect that the cardiovascular magnetic resonance scan itself precipitated the thromboembolic event. More likely, the timing of the scan was coincidental in documenting the event.

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Disclosures
None.

References

Figure 3. Contrast-enhanced computed tomography scan shows a large infarction of the lower pole and multiple wedge-shaped hypoenhanced regions within the mid and upper poles of the right kidney consistent with emboli. The left kidney had hypoenhancement in the mid pole. Arrows indicate the hypoenhanced regions within the kidneys that are consistent with infarction.
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