Images in Rheumatology

An Unusual Cause of Loin Pain in a Patient with Systemic Lupus Erythematosus

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Acute loin pain is commonly attributed to pyelonephritis or renal calculi. We describe a patient with systemic lupus erythematosus (SLE) who presented with an uncommon cause of acute loin pain due to renal infarction as the first presentation of the antiphospholipid syndrome (APS).

A 42-year-old Chinese woman presented with a 5 day history of acute left loin pain, dysuria, nausea, and fever, but no hematuria. She had a history of SLE for 10 years with skin, renal, and joint involvement, and was taking prednisolone and azathioprine. She had no history of miscarriages or previous thrombotic episodes. Examination revealed a blood pressure of 160/100 mm Hg, and severe left loin tenderness with a positive renal punch. Plain radiograph of the abdomen was unremarkable. Ultrasound of the kidneys showed normal echo texture and size, with no focal mass lesion or hydronephrosis. Doppler ultrasound of the renal veins showed normal flow bilaterally. Computer tomography (CT) of the abdomen showed a hypodense left kidney due to infarction and thrombosis of the left renal artery (Figure 1). Magnetic resonance angiography (MRA) of the abdominal aorta showed that the left renal artery was completely occluded. There was also a focal filling defect in the aorta just below the origin of the right renal artery (Figure 2). A 2 dimensional echocardiogram of the heart showed no intracardiac thrombus. Lupus anticoagulant and anticardiolipin IgM were negative, but anticardiolipin IgG was elevated, 19 GPLU/ml (normal < 13.5), and anti-$ß_2$ glycoprotein I IgA was 67 standardized arbitrary units (normal < 20). She started anticoagulation therapy and the loin pain resolved. Her renal function remained stable with creatinine 130 µmol/l.

Antiphospholipid antibodies occur in 30–40% of patients with SLE and are strongly associated with recurrent thrombosis in various organs. Abdominal visceral manifestations of APS are less commonly reported compared to neurological, obstetric, and peripheral thromboembolic or ischemic events. In the kidney, thromboses can involve the renal veins, arteri-

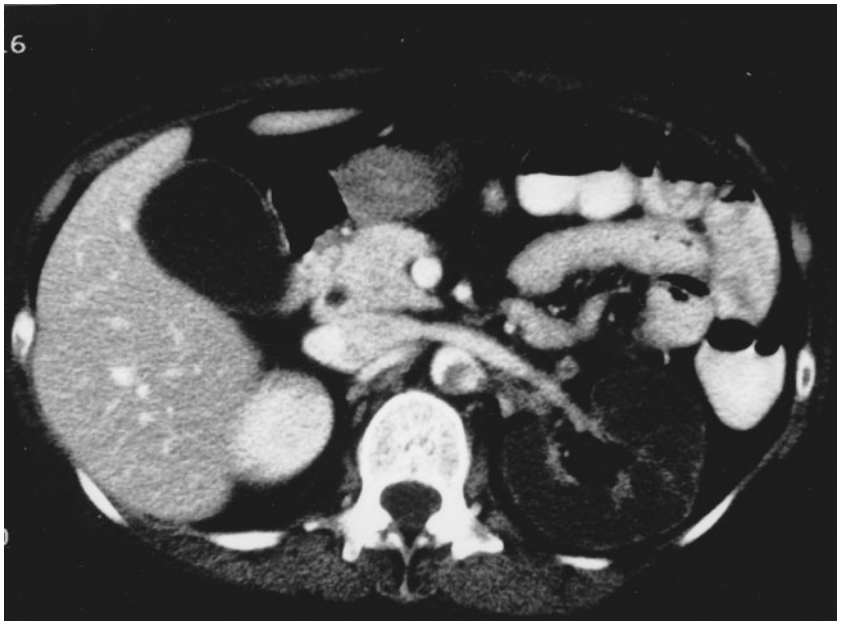

Figure 1. Contrast CT of the abdomen shows a non-enhancing ischemic left kidney due to infarction, with thin cortical rim enhancement related to collateral capsular supply. Thromboembolus within the left renal artery is seen projecting into the lumen of the adjacent abdominal aorta.

Figure 2A and 2B. Coronal MRA of the abdominal aorta performed after rapid injection of intravenous gadolinium DTPA reveals that the left renal artery is completely occluded. There is no perfusion of the left kidney at all, hence the left renal vein is not seen. The right renal artery is patent and the right renal vein appeared normal. There is also a focal filling defect in the aorta just below the origin of the right renal artery representing part of the thromboembolus.

oles, and glomerular capillaries, and uncommonly the renal artery. Although renal infarction in APS has been reported in few cases[1-6], a recent radiological series in 42 patients with APS showed that 86% had abdominal visceral ischemia on abdominal CT, resulting in renal infarction in 52% of patients[7]. The presentation of renal infarction may be silent, as an incidental finding on abdominal CT, or as acute abdominal or loin pain as in this patient. Sometimes it can occur in the setting of catastrophic APS or, rarely, present with malignant hypertension due to bilateral renal artery occlusion[4,5]. CT is the most useful modality in detection of renal infarction and can also identify other visceral ischemia or infarcts such as hepatosplenic and bowel infarcts and pancreatic ischemia, including major vascular thrombosis[7]. Advanced MR imaging with 3D gadolinium enhanced MRA for evaluation of renal, aorta, and visceral arteries has provided superior spatial resolution and insight into the effect of anatomical vessel abnormalities on organ perfusion, and is also free from potentially nephrotoxic iodinated contrast that is required in conventional and CT angiography[8]. It also permits clear distinction between high signal intensity patent lumen and low signal intensity thrombosed lumen. As well, coronal or sagittal MR images are useful to confirm the level and extent of the occlusion[9].

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