

Clinical Imaging

Urolithiasis mimic: isolated spontaneous renal artery dissection in the emergency department

A 40-year-old man, with no relevant medical or family history, presented with acute onset left flank pain radiating to his lower back.

He was hypertensive (168/75 mmHg); however, his other vital signs were normal. No costovertebral angle knocking pain or abdominal tenderness was elicited. At onset, he complained of left flank pain and subsequently at presentation, he complained of moderate abdominal pain in the lower left quadrant.

Laboratory results were normal. Abdominal ultrasound and non-contrast computed tomography (CT) ruled out renal abnormalities, including hydronephrosis or hydroureters (Fig. 1A). However, we undertook contrast-enhanced CT based on a high index of clinical suspicion for vascular lesions because of his persistent abdominal pain. This revealed left-sided non-communicating isolated renal artery dissection (Fig. 1B,C).

Spontaneous renal artery dissection (SRAD) is rare. Ultrasonography and urinalysis are useful in distinguishing between urolithiasis and SRAD.¹ SRAD can cause renal infarction or renovascular hypertension.² Treatment options consist of blood pressure control, anticoagulant drugs, endovascular therapy, and open surgery.³

The absence of urolithiasis and hydronephrosis on non-contrast CT and of hematuria on urinalysis in patients with severe flank pain normally necessitates contrast-enhanced CT to investigate the vascular system for diseases, such as SRAD or acute renal infarction.

DISCLOSURE

Approval of the research protocol: N/A.

Informed consent: Written informed consent was obtained from the patient.

Registry and registration no. of the study/trial: N/A.

Animal studies: N/A.

Conflict of interest: None.

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Fig. 1. Computed tomography (CT) scans of a 40-year-old man with spontaneous renal artery dissection. A, Non-contrast-enhanced CT without any vascular or urinary tract abnormalities. B, C, Contrast-enhanced CT showing isolated left renal artery dissection (non-communicating type) (arrows) on axial and coronal views.