

Aorto-caval Fistula Mimicking Clinical Signs of Renal Colic

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A 71-year-old male came to the emergency room complaining of weakness, nausea and pain in the left flank and groin irradiating into his left hemiscrotum. Clinical examination revealed arterial hypotension and tachycardia. Because of the patient's history of urolithiasis in the past, left renal colic was suspected and non-enhanced computed tomography (CT) was requested. The CT scan confirmed nephrolithiasis, but the crucial finding was an aneurysm of the abdominal aorta measuring 95 mm in diameter. Furthermore, the dorsal wall of the aorta was in direct contact with the spine, creating a "draped aorta sign" (**Figure 1a**). There were hyperdense bands along the aorta, the psoas muscles and the Gerota's fascia corresponding to retroperitoneal hematoma (**Figure 2b**)⁽¹⁾. The CT finding was immediately reviewed and CT angiography was promptly performed to evaluate the suspected acute aortic rupture. Contrast-enhanced angiography confirmed an aortic rupture with fistula to the inferior vena

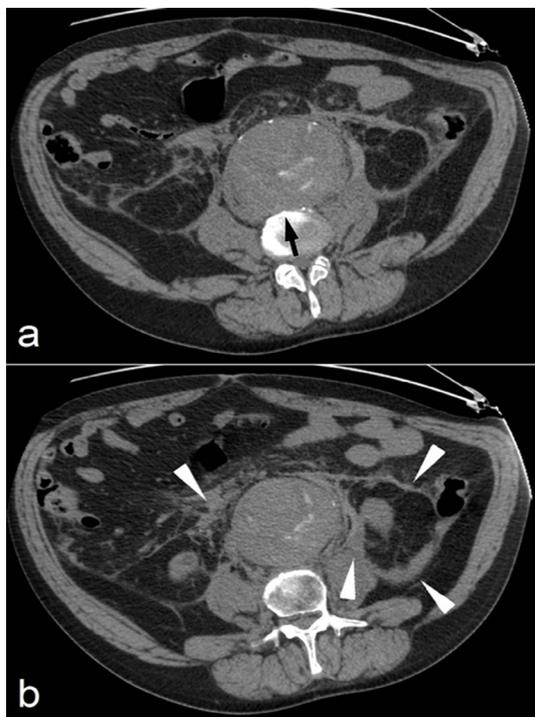


Figure 1. Non-enhanced computed tomography initially performed to confirm suspected left renal colic. A) displays abdominal aorta aneurysm and the disappearance of fat plane between the aorta and the spine and the merging of the contours of the two structures, thus creating a "draped aorta sign" (arrows), which is considered a sign of impending aortic rupture. B) displays hyperdense bands along the aorta, the psoas muscles and the Gerota's fascia (arrows), corresponding to retroperitoneal hematoma as a sign of acute aortic rupture.



Figure 2. Contrast-enhanced CT angiography performed to evaluate the extent of the suspected aortic rupture. Images in A) the axial and B) the coronal plane offer direct evidence of aortic rupture with 5-mm-wide fistula to the inferior vena cava (arrows).

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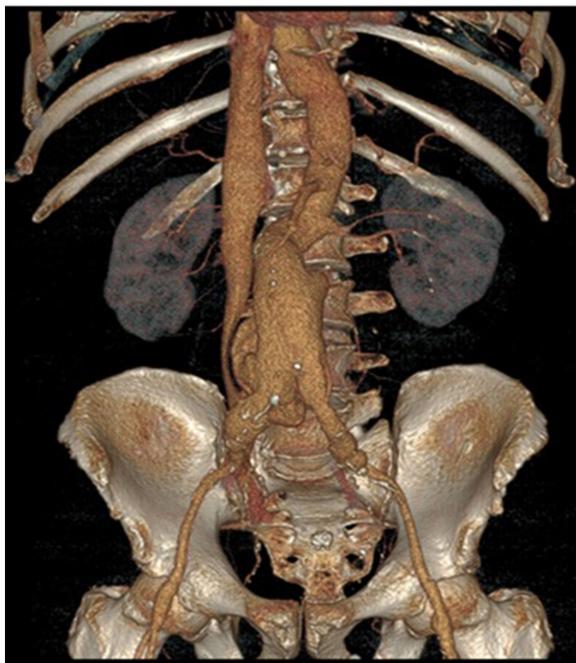


Figure 3. Volume rendering reconstruction of CT angiography. Contrast filling of the inferior vena cava in arterial phase is clearly seen.

cava (**Figure 2**), and the lumen of the vein was homogeneously enhanced in arterial phase (**Figure 3**). The patient underwent urgent surgery with partial resection of the aneurysm and implantation of an aorto-iliac bypass graft. This case illustrates the broad and tricky differential diagnosis of renal colic and also the diagnostic capabilities of non-enhanced CT.

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