

Case	(325) The importance of doppler ultrasound: diagnostic key of aortoiliac fistula in a patient with acute renal failure.
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CASE PRESENTATION

A 65-year-old man was admitted at our Emergency Department referring asthenia and anuria for 2 days with sudden back pain. Creatinine value was 5,7 mg/dl. Ultrasound examination was performed to rule out post-renal acute renal failure (ARF). An abdominal aortic aneurysm (AAA) was identified.

Color Doppler showed turbulent flow in inferior vena cava (IVC) and Pulsed Doppler showed pulsatile flow in suprahepatic, portal and renal veins. Main renal arteries were not identified.

Because of these findings, contrast-enhanced computed tomography (CT) was performed, confirming aortoiliac fistula secondary to AAA rupture. The patient underwent emergency laparotomy with aortic aneurysm reparation.

DISCUSSION

AAA rupture into IVC or iliac vein is uncommon (3% to 4% of all ruptured abdominal aneurysms).

Typical symptoms, including abdominal or back pain, pulsatile mass, and abdominal bruit, may be found in less than half of the patients, leading to diagnostic delay. Aortocaval fistula causes hemodynamic disturbances due to venous volume increase and high cardiac output, leading to cardiac failure. Lower limb edema and hematuria or rectal bleeding may appear due to venous congestion and rupture of pelvic venous plexus.

ARF appears because of decreased renal perfusion pressure secondary to venous hypertension and decreased arterial flow. It has also been described the presence of paradoxical pulmonary embolisms due to thrombotic material crossing from the aneurysmatic sac into vena cava through the fistula or clots developed from venous stasis secondary to cava compression.

The imaging technique of choice is contrast-enhanced CT. Imaging findings are early detection of IV contrast in the IVC, which is dilated, with aortic aneurysm associated, and loss of normal space between the aorta and the cava or iliac vein.

However, Doppler ultrasound may be helpful in diagnosis: AAA with a high-volume, pulsatile flow in IVC, suprahepatic, portal and renal veins and decreased flow in renal arteries can be seen. The prognosis depends on an early diagnosis. Usual treatment is aneurysm replacement with an endovascular stent graft.

CONCLUSION

Aortoiliac fistula is a rare complication of abdominal aortic aneurysm rupture. Lower limb edema, hematuria, rectal bleeding or ARF in a patient with AAA can make us suspect. Contrast-enhanced CT is imaging modality of choice but Doppler ultrasound can give us the diagnostic key.

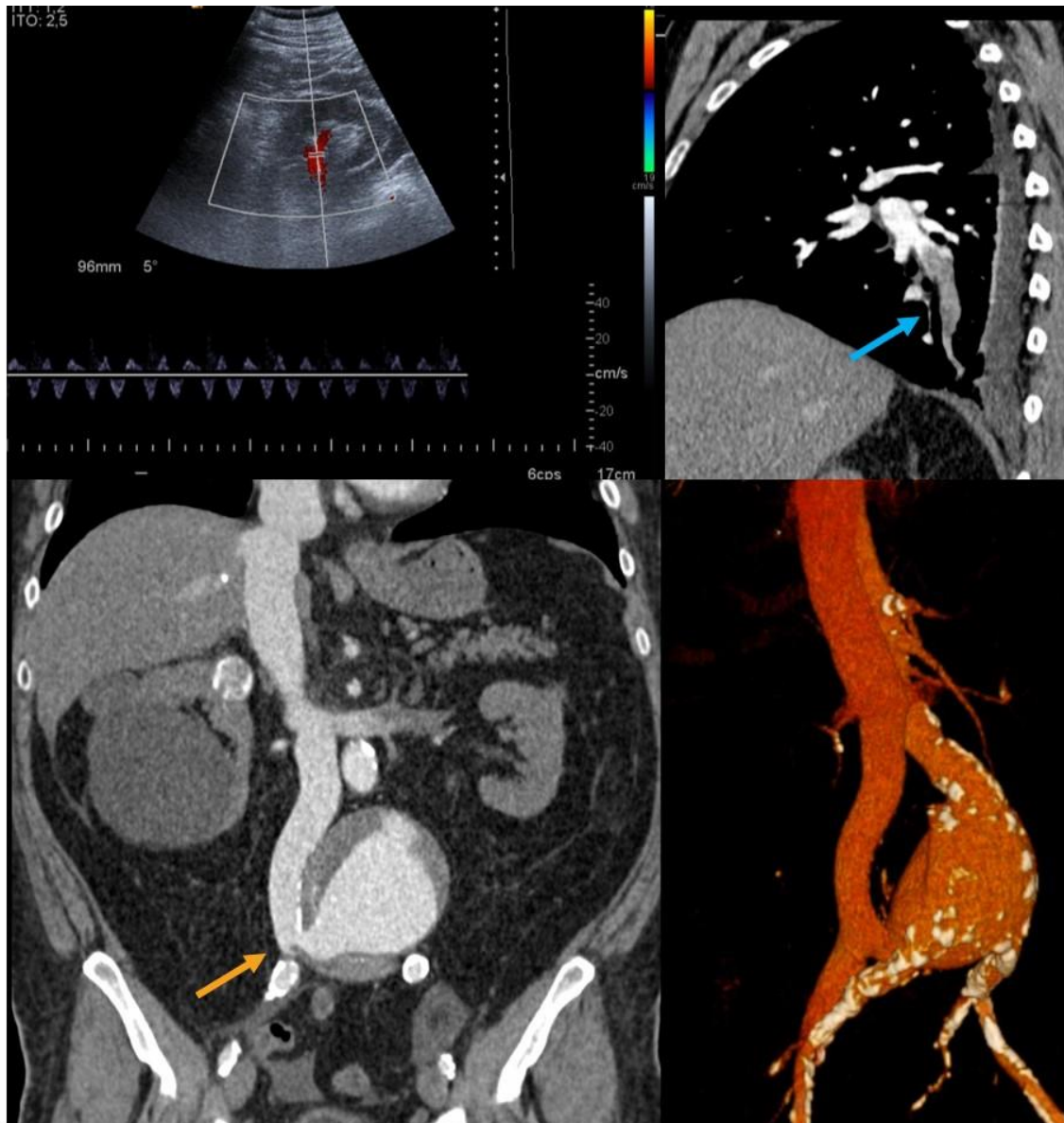


Image 1. A. Pulsed Doppler shows pulsatile flow in left renal vein. B. Segmental pulmonary embolism on contrast-enhanced computed tomography (CT) (blue arrow). C. Aortoiliac fistula with direct communication between the aorta and the vein (yellow arrow). D. 3-D CT reconstruction.

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