Rupture of Abdominal Aortic Aneurysm
with Fistula between the Aorta and the Confluence of the Left Renal Vein into the Vena Cava

A 62-year-old man emergently presented with a 2-hour history of severe right-sided abdominal pain. Abdominal ultrasonography identified a possibly ruptured abdominal aortic aneurysm (AAA). Computed tomography confirmed AAA rupture with a medium-sized retroperitoneal hematoma on the right side of the aorta. During the arterial phase of angiography, contrast medium filled the vena cava and part of the left renal vein (LRV) (Fig. 1). Because of the patient’s unstable and worsening clinical condition, complete angiography was not performed. Three-dimensional computed tomographic reconstruction showed a large aneurysm, a medium-sized hematoma, and a fistula between the aneurysm and the confluence of the LRV into the vena cava (Fig. 2).

Fig. 1 Computed tomographic angiography (transverse image) shows an abdominal aortic aneurysm with rupture into the left renal vein and vena cava.

Fig. 2 Computed tomography (3-dimensional reconstruction) shows an abdominal aortic aneurysm with rupture into the left renal vein and vena cava.
Communication between an AAA and the LRV or vena cava is extremely rare. Approximately 25 cases of fistulae between an AAA and the LRV have been reported. Aortocaval fistulae have occurred in 3% to 6% of cases of AAA rupture. In most instances of LRV fistulae, the LRV has been positioned retroaortically. This anatomic variation has a prevalence of 2% to 4% in the general population.

Adequate preoperative diagnosis with precise identification of the fistula is crucial in reducing the risk of intraoperative complications and heavy bleeding. To our knowledge, this is the first report of AAA rupture with an acutely formed fistula between the AAA and the confluence of the LRV into the vena cava.

References