Aortocaval fistula is a rare but life-threatening complication of ruptured abdominal aortic aneurysm. We present a case of an aortocaval fistula with acute right heart failure. The condition was accurately diagnosed before operation by physical examination, echo, and especially by computed tomography (CT), thereby enabling proper planning of the operative strategy. At surgery, not only the infrarenal aorta and common iliac arteries on both sides but the inferior vena cava and iliac veins on both sides were also controlled to avoid massive venous bleeding through the fistula. Aortocaval fistula repair was easy, and conventional bifurcated Dacron graft replacement for abdominal aortic aneurysm was successfully performed. Innovative CT images give us prompt preoperative diagnoses and elaborate surgical strategies.

Keywords: aortocaval fistula, abdominal aortic aneurysm, computed tomography
infrarenal AAA. After the aorta and common iliac arteries on both sides were controlled, the IVC and right common iliac vein were controlled using a rubber tourniquet. Subsequently, the AAA was opened longitudinally. The fistula was located seen in the right lateral wall of the AAA. Vigorous venous bleeding through the ACF was observed (Fig. 3). Sponge-stick compression of the left common iliac vein decreased the bleeding. The size of the fistula was approximately 1.0 cm. The fistula was closed using running 3-0 polypropylene sutures and covered using a fibrin-coated collagen fleece (TachoSil™; Nycomed, Copenhagen, Denmark). A Dacron bifurcated graft (18 × 9 mm) was proximally anastomosed to the aorta and distally to the common iliac arteries on both sides (Fig. 4). The level of CVP reduced to 4 cmH2O after surgery. Renal function returned to normal on postoperative day 2. The patient recovered uneventfully from surgery and was discharged from the hospital on postoperative day 13.
Discussion

The preoperative diagnosis of ACF is difficult and often delayed or even missed because of the rare frequency and absence of the classic symptoms, including a pulsatile abdominal mass with bruit and high-output heart failure. Salo and his associates\(^2\) reported that only half of the patients showed the classic symptoms; however, hematuria was a common finding in all patients. After the diagnosis is established, operative repair is indicated in all cases.\(^4\) The preoperative accurate diagnosis of ACF is of paramount importance because patients with ACF may have heavy intraoperative blood loss through the fistula.\(^5\) Although catheter angiogram used to be the best modality to diagnose ACF, it is no longer the diagnostic modality of choice and should be used only when CT or magnetic resonance imaging (MRI) is unable to clearly demonstrate the lesion.\(^6\) With the development of CT and MRI, the diagnosis of ACF can be established noninvasively. However, compared to CT, MRI is too time-consuming. Accordingly, we believe that CT is the best modality for diagnosis of ACF. In our case, preoperative abdominal echo showed the mosaic flow between the AAA and IVC, and CT revealed dilatation of the IVC in contact with AAA. Consequently, diagnosis of this condition was established enabling the surgeon to carefully plan and prepare for surgery. The site of ACF demonstrated in the CT image coincided with the operative finding. Massive venous bleeding through the fistula was avoided because not only the infrarenal aorta and common iliac arteries on both sides, but the IVC and common iliac veins on both sides were also controlled when the ACF was closed using running 3-0 polypropylene sutures. Moreover, hemostasis was reinforced by using TachoSil\(^3\). TachoSil\(^3\) consists of a collagen matrix coated with lyophilized human fibrinogen and bovine thrombin, and it has been reported to be effective in achieving hemostasis.\(^7\) ACF is rarely observed as a complication of AAA, and it shows high mortality. Our case report illustrates that spiral CT permits quick and accurate preoperative diagnosis achieving minute planning and preparation for surgery.

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References