

CASE REPORT

# Spontaneous aortocaval fistula complicating abdominal aortic aneurysm

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ABSTRACT

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Primary aortocaval fistula is a rare, and in most cases, a lethal complication of an abdominal aortic aneurysm even though it involves less than 1% of all abdominal aortic aneurysms. A 60-year-old man was transferred to the emergency department complaining of acute abdominal pain and vomiting. A contrast-enhanced computed tomography showed a ruptured abdominal infrarenal aortic aneurysm (10cm) complicated by an aortocaval fistula. The patient survived after undergoing emergency synthetic vascular graft placement.

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MANUSCRIPT

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A 60-year-old man was transferred to the emergency department of our hospital due to acute abdominal pain and vomiting. He had a history of heavy smoking and arterial hypertension. Physical examination revealed circulatory shock, cyanotic, cold and edematous lower extremities. Laboratory tests revealed acute kidney injury, disseminated intravascular coagulation and elevated troponin. A contrast-enhanced computed tomography showed a ruptured abdominal infrarenal aortic aneurysm (10cm) complicated by an aortocaval fistula (ACF) (Figure 1A, 1B). The patient underwent emergency synthetic vascular graft placement and he finally recovered after a prolonged intensive care unit stay.

Primary ACF is a rare and in most cases a lethal complication of an abdominal aortic aneurysm (AAA), even though it involves less than 1% of all AAAs. The most frequent mechanism of formation of an ACF is necrosis of the aortic wall and inflammation causing adherence of the inferior vena cava to the aneurysmal sac. An increase in blood pressure causes rupture of the vessels leading to a fistula.<sup>1,2</sup> This is also the proposed mechanism in our case. The clinical presentation of ACF combines the characteristics of AAA rupture with those of massive left-to-right shunt and increased venous return. The most frequent symptoms are abdominal pain and hemorrhagic shock while signs that might guide a physician to the possible diagnosis of AAA are: pulsatile pelvi mass associated with bruit, palpable abdominal aneurysm and evidence of heart failure (either right or left).<sup>3,4</sup> In the majority, ACFs result in sudden death if they are not diagnosed. In our case, the patient had the typical signs and symptoms and

**KEY WORDS:** *Aortocaval fistula,  
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**ABBREVIATION LIST:**

ACF: Aortocaval fistula

AAA: Abdominal aortic aneurysm

EVAR: Endovascular aneurysm repair

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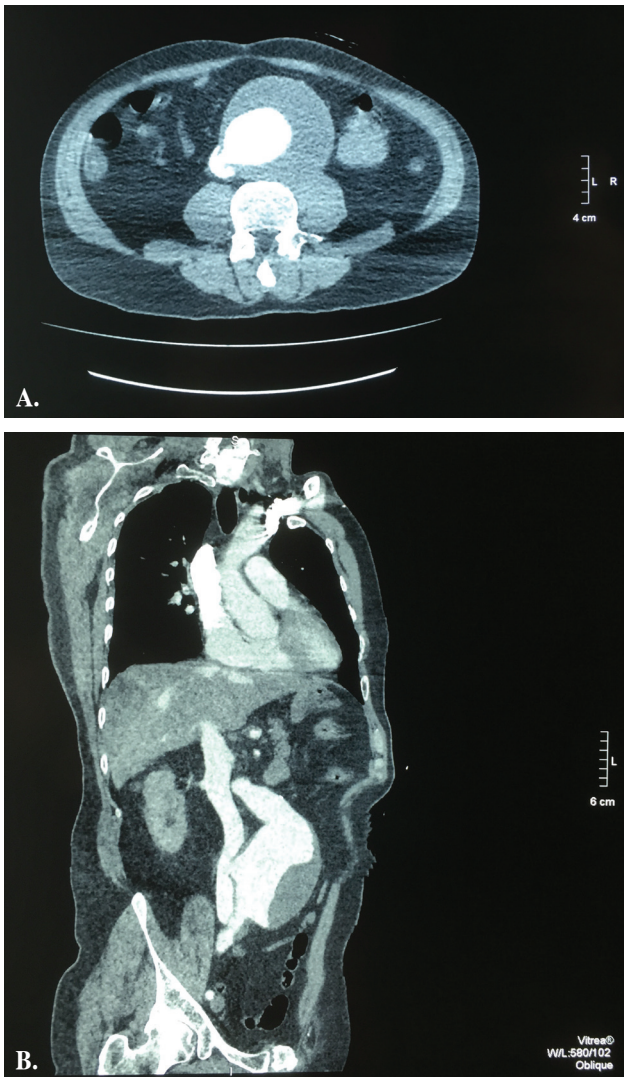
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**FIGURE 1.** Axial (A) and coronal (B) images of the aortocaval fistula on CT angiography

a contrast-enhanced computed tomography was immediately performed to seek for internal bleeding and exclude other possible diagnosis.

Treatment of ACF can be done either with open surgery repair or with endovascular aneurysm repair (EVAR).<sup>5</sup> The open surgery, that was chosen for our patient, is performed by suturing of the fistula from within the aneurysmal sac and placing an endograft at the site where the ACF lies. EVAR is mostly preferred in patients having many comorbidities that are very unstable for general anesthesia. Open surgery is mostly preferred in younger patients and those whose anatomy is not easily accessible to perform fine maneuvers.<sup>6</sup> The mortality from ACF is estimated to be equivalent to that associated with ruptured AAA.<sup>7</sup> The early identification and treatment of a ruptured AAA and an ACF can double the survival from 25% to 50%.<sup>8</sup>

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