Aortocaval fistula
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Section: Cardiovascular
Technique: CT
Case Type: Clinical Cases
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Patient: 74 years, male

Clinical History:

The patient presented in acute renal failure with a one-week history of back pain and recent rapid onset of shortness of breath. Due to clinical concern regarding a potential aortic dissection, a CT aortogram was performed.

Imaging Findings:

The patient presented in acute renal failure with a one-week history of back pain and recent rapid onset of shortness of breath. Ultrasound was performed to assess for renal tract obstruction, and revealed a 7cm infra-renal aortic aneurysm. Due to clinical concern regarding a potential aortic dissection, a CT aortogram was performed (Fig. 1). CT aortogram confirmed the presence of an abdominal aortic aneurysm, and also demonstrated early opacification of the inferior vena cava (IVC), poor enhancement of the kidneys and the presence of an aortocaval fistula.

The patient subsequently underwent repair of the aortocaval fistula and aortic aneurysm with a brisk improvement in his renal indices within 72 hours after surgery.

Discussion:

Abdominal aortic aneurysms are relatively common within those aged over fifty, with an incidence of between 1% and 4%. The risk of rupture of an aortic aneurysm is approximately 1% per year of aneurysm; aortocaval fistula is a rare form of rupture, accounting for 0.3-4% of ruptures, from the aorta to the IVC. Patients are often in high cardiac failure at presentation (50%) with about 20% having the classic triad of abdominal or back pain with a palpable aortic aneurysm and a continuous abdominal bruit. Additionally, due either to reduced renal perfusion or increased renal venous pressure, they can be in acute renal failure.

On CT the presence of early IVC enhancement suggests an aortocaval fistula and with helical scanning the fistula can often be visualised. Preoperative diagnosis of aortocaval fistula reduces the degree of intraoperative haemorrhage.

Complications of aortocaval fistula include pulmonary embolism of the aneurysmal debris, and failure to diagnose preoperatively due to a thrombosed fistula tract.

The differential diagnosis for early IVC enhancement includes: right heart failure, carcinoid syndrome, superior vena cava obstruction, aortocaval fistula and vascular injury.

Differential Diagnosis List: Aortocaval fistula
**Final Diagnosis:** Aortocaval fistula

**References:**


Figure 1

Description: Early opacification of intra-hepatic IVC. Origin:

Description: Poor enhancement of the kidneys, with early opacification of the IVC. Origin:
**Description:** IVC compressed by abdominal aortic aneurysm. **Origin:**

**Description:** Contrast demonstrated within the aortocaval fistula. **Origin:**