Acute Renal Failure Secondary to Massive Arteriovenous Fistula between Aorta and Iliac Vein

A.		Barracca ^a
P.		Altieri ^a
C.		Ganau ^b
F.		Deriu ^c

^aDepartment of Nephrology; ^bDepartment of Radiology and ^cDepartment of Surgery, Brotzu Hospital, Cagliari, Italy

Antonio Barracca, MD, Divisione di Nefrologia e Dialisi, Ospedale G. Brotzu, Via Peretti, I-09100 Cagliari (Italy)

Dear Sir,

Extrarenal arteriovenous fistula has not been described as a cause of acute renal failure. The present case report describes a 64-year-old male who had acute renal failure hemodynamically mediated by a high output arteriovenous fistula which suddenly appeared between the aorta at its bifurcation and the left iliac vein at its origin (fig. 1). The patient was admitted to our hospital because of epigastric pain that appeared a few hours before admission. A pulsating mass in the umbilical area was present. An echographic examination showed an aneurysm of the infrarenal aorta which was 7.6×6.4 cm in diameter with thrombosis of its lumen and a false lumen of 2.5 cm. The iliac arteries were winding with an ectatic lumen of 1.3 cm.

Tests performed on the first hospital day showed: BUN 56 mg/dl (9.296 mmol/l); serum creatinine 5.2 mg/dl (459.68 mmol/l); CK 993 IU/l ; AST 170 IU/l ; ALT 105 IU/l ; WBC $15.9 \times 10^3/\mu\text{l}$; PLT $177 \times 10^3/\mu\text{l}$.

The patient was oliguric and his blood pressure was $150/40 \text{ mm/Hg}$.

On the second hospital day he had dyspnea with metabolic acidosis, anuria and elevation of necrosis enzymes: LDH 8976 IU/l ; AST 3594 IU/l ; CPK 1401 IU/l ; CK-MB 126 IU/l ; TBA 1.8 mg/dl ; AMY 180 U/l ; PLT $34 \times 10^3/\mu\text{l}$.

A myocardial infarction was excluded and the patient underwent dialytic treatment with removal of 3 kg of fluid and resolution of his dyspnea. The patient was cyanotic and central venous pressure was $> 25 \text{ cm H}_2\text{O}$.

Fig. 1.

$^{99\text{m}}$ Tc-MAG 3 renal scan showed a progressive accumulation of the radionuclide (fig. 2) mimicking a urinary obstruction, which was excluded by renal echography.

Eventually the patient underwent aortography which showed an arteriovenous fistula between the aorta at its bifurcation and the left iliac vein at its origin.

The patient's condition worsened. He became dyspnoic and ischemic cutaneous changes appeared in both legs. In spite of urgent dialytic treatment for overload removal and the intravenous administration of nitro-glycerin and nitroprusside, the patient died due to acute heart failure.

Counts/s

120

×10

Fig. 2.

The present episode of acute renal failure was probably hemodynamically mediated by the massive bypass of blood from the aorta to the iliac vein, determining an ischemia of the splanchnic and limb districts. The very elevated CVP value persisting after dehydration probably caused the pseudo-obstructive pattern in the renal scan showing a progressive accumulation of radionuclide for delayed discharge of the renal veins. Ischemia of the splanchnic territory was shown by low blood pressure, the absence of peripheral arterial pulses, the presence of elevated necrosis enzymes and the appearance of anuria.

© 1995 S. Karger AG, Basel 0028-2766/95/0693-0360 \$8.00/0