

Successful management of renal rupture due to anti-neutrophil cytoplasmic antibody-associated vasculitis with transcatheter arterial embolisation: a case report

Sirs,

We report a rare case of renal rupture in a 67-year-old male with anti-myeloperoxidase (MPO)-positive ANCA-associated vasculitis (AAV), successfully managed with transcatheter arterial embolisation (TAE). This case underscores the critical role of timely intervention in such life-threatening complications, which have been documented in only 15 cases to date (1). AAV often involves small-vessel inflammation, and renal involvement is common, but renal rupture as a complication is extremely rare, making this case clinically valuable for guiding practice.

The patient presented with a one-month history of intermittent bilateral lower limb oedema, weakness, and pain. Initial laboratory investigations revealed haemoglobin (HGB) 98 g/L, serum creatinine 69 µmol/L (rising to 195 µmol/L 6 days later, indicating progressive renal impairment), 2+ urine oc-

cult blood and proteinuria, and markedly elevated anti-MPO antibody levels (>300.00 AU/ml; normal range <20 AU/ml), with negative anti-GBM antibody. Additionally, the erythrocyte sedimentation rate (ESR) was elevated at 120 mm/h, and C-reactive protein (CRP) was increased to 135 mg/L. Chest CT demonstrated multiple patchy ground-glass opacities and interstitial fibrosis in both lungs, consistent with AAV-related pulmonary involvement, which is a common extra-renal manifestation of the disease. Based on clinical, laboratory, and imaging findings, the patient was diagnosed with microscopic polyangiitis (MPA), acute kidney injury, and mild anaemia. He was initiated on methylprednisolone pulse therapy (1 g/day for 3 days) followed by oral prednisone (40 mg/day).

On day 11 of treatment, the patient developed sudden and severe left upper quadrant pain, associated with nausea, diaphoresis, progressive hypotension (blood pressure 60/40 mmHg), and altered mental status (lethargy, slow response to verbal stimuli). Laboratory tests showed a precipitous drop in HGB to 53 g/L, suggesting massive internal haemorrhage. Abdominal CT confirmed rupture of the mid-pole of the left kidney with perirenal and retroperitoneal haema-

toma (Fig. 1A). Emergency management included fluid resuscitation, transfusion of 4.5 units of packed red blood cells and 450 ml of fresh frozen plasma. Emergency angiography demonstrated contrast extravasation from the distal portion of the left renal artery (Fig. 1D), which persisted after initial distal coil deployment (Fig. 1E). Successful haemostasis was achieved with additional coil embolisation of the main renal artery trunk (Fig. 1F).

Post-procedurally, abdominal pain resolved, blood pressure normalised, and HGB stabilised at 82 g/L. Serum creatinine peaked at 272 µmol/L (attributed to post-embolisation renal ischaemia) but improved to 224 µmol/L at discharge after 2 weeks. Follow-up imaging showed a reduction in perirenal haematoma size (from 5.4 cm to 3.7 cm) (Fig. 1B-C), confirming effective haemorrhage control.

The incidence of AAV increases with age, and elderly patients may have more severe organ involvement due to reduced physiological reserve (2). Renal rupture in AAV is thought to arise from MPO-ANCA-mediated arteriolar inflammation (weakening vessel walls and can lead to the development of numerous small aneurysms), steroid-induced blood pressure fluctuations,

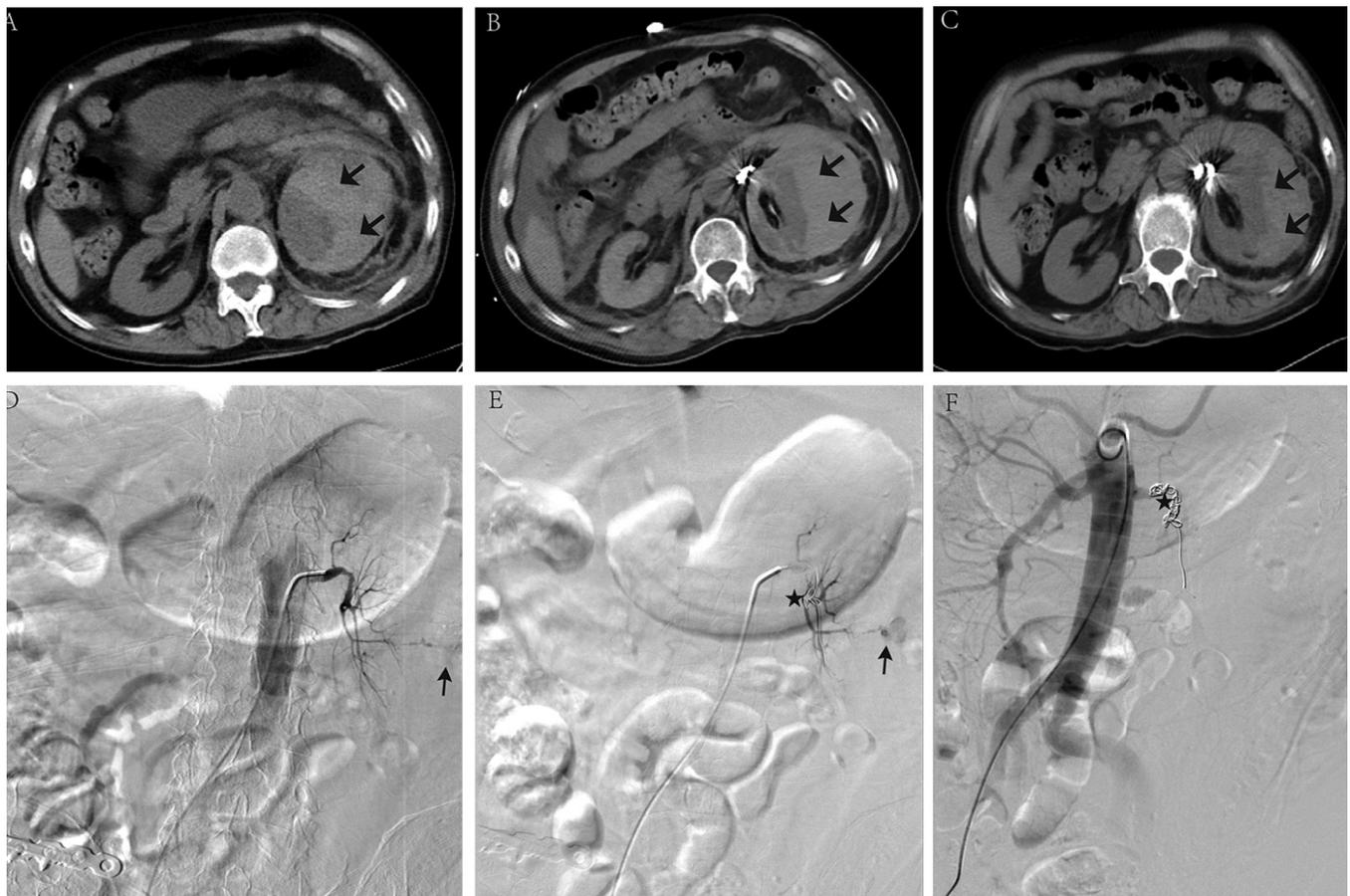


Fig. 1. A, B, and C are abdominal CT scans of the patient: A shows the image before left renal artery embolisation; B shows the image on the second day after the procedure; C shows the image one week after the procedure. The arrows indicate the bleeding sites. D, E, and F are angiographic images: D shows the image before arterial embolisation; E shows the image during the procedure; F shows the image after the procedure. The arrows indicate extravasated contrast medium, and the pentagrams indicate the embolisation coils.

Letters to the Editors

and reduced perirenal tissue buffering due to anaemia (3, 4), consistent with KDIGO guidelines highlighting vasculitis-related vascular fragility (5). TAE, as utilised in this case, offers a minimally invasive alternative to surgery, particularly valuable for haemodynamically unstable patients (1), aligning with EULAR recommendations for organ-preserving interventions (6). Clinicians should maintain a high index of suspicion for renal rupture in AAV patients presenting with acute abdominal pain and hypotension, with early TAE being critical to improving outcomes and reducing mortality associated with this rare complication.

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