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Trauma and reconstruction

Rare case of spontaneous rupture of renal artery secondary to wegner granulomatosis

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A B S T R A C T

This case report presents an uncommon instance of spontaneous rupture of the renal artery due to Wegner Granulomatosis which is an infrequent autoimmune disorder distinguished by the presence of granulomatous inflammation, primarily impacting the upper and lower respiratory tracts, along with renal involvement. The occurrence of spontaneous renal artery rupture in patients with Wegener's granulomatosis is a rare complication, as evidenced by the limited number of reported cases in the existing literature. The present case underscores the difficulties associated with the diagnosis and treatment of an uncommon complication while emphasizing the significance of timely intervention in achieving a positive outcome.

1. Background

Wegener's granulomatosis (WG), subsequently termed Granulomatosis with Polyangiitis (GPA), is an uncommon autoimmune condition that mainly impacts blood vessels of small to medium size.[1] The condition frequently manifests with symptoms like nasal congestion, sinusitis, cough, and haemoptysis. Renal involvement is observed in around 85 % of cases of Wegener's granulomatosis (WG),[2] frequently resulting in glomerulonephritis. Although renal problems are commonly observed, spontaneous renal artery rupture is infrequent and has been described in only a limited number of cases (see Fig. 1)

2. Case presentation

A gentleman at late fifties presented with right flank pain worse on movement. The patient had a history of WG, diagnosed twelve years earlier with positive anti-neutrophil cytoplasmic antibodies (ANCA) and characteristic biopsy findings. Despite receiving corticosteroid therapy and immunosuppressive agents, the patient developed end-stage renal disease (ESRD) and required dialysis. On admission, he experienced sudden-onset severe abdominal pain, accompanied by hypotension and tachycardia with no history of trauma. CT abdomen pelvis with contrast (Fig. 1) revealed a ruptured right renal artery, leading to retroperitoneal haemorrhage. A diagnosis of spontaneous renal artery rupture secondary to WG was made.

3. Investigation

Laboratory investigations revealed elevated inflammatory markers (C-reactive protein, WBCs), dropped HB levels, and worsening renal function. A CT abdomen pelvis with contrast, confirmed the diagnosis of a ruptured renal artery.

3.1. Differential diagnosis

The differential diagnosis included other causes of retroperitoneal haemorrhage, such as trauma, vascular malformation, and connective tissue disorders. However, considering the patient's background of WG and characteristic imaging findings, spontaneous renal artery rupture secondary to WG was the most likely diagnosis.

4. Treatment, outcome, and follow-up

Due to the patient's hemodynamic instability and ongoing retroperitoneal haemorrhage, resuscitation by blood transfusion, FFP and IV fluids, ITU admission, and emergency endovascular embolization were performed. This successfully occluded the ruptured renal artery, leading to the cessation of bleeding. The patient's vital signs stabilized, and he gradually recovered renal function. Following the procedure, the patient remained on an immunosuppressive regimen to control WG activity. Regular follow-up evaluations were conducted to monitor renal function, disease activity, and possible complications.

5. Discussion

A spontaneous rupture of the renal artery associated with WG is an exceedingly uncommon and potentially fatal complication. Intervention and prompt recognition are essential for averting catastrophic outcomes.

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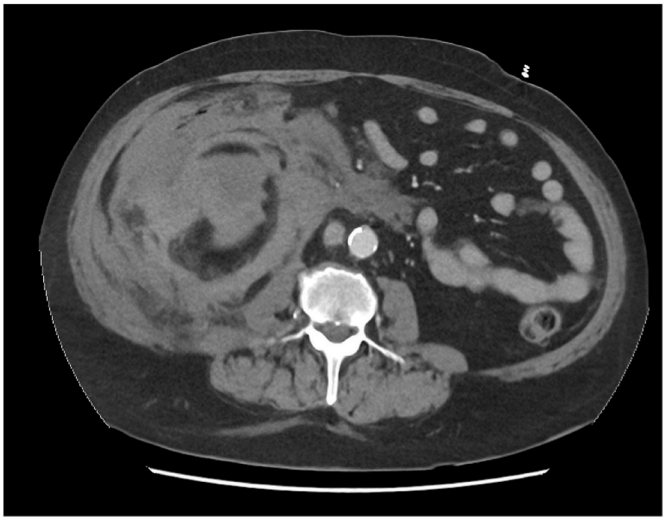

Fig. 1. CT AP shows ruptured renal artery secondary to Wegener's granulomatosis.

This case report underscores the importance of maintaining a vigilant eye for such uncommon complications, particularly in patients who have pre-existing WG and are experiencing worsening clinical symptoms. Furthermore, endovascular embolization is recognized as a feasible therapeutic alternative in situations where surgical intervention may present elevated hazards.

Learning points

1. Wegner Granulomatosis can lead to rare and potentially life-threatening complications, such as spontaneous renal artery rupture.
2. Prompt recognition and intervention are necessary for improved outcomes in spontaneous renal artery rupture cases.
3. Endovascular embolization can be an effective treatment modality in selected cases, considering the associated risks of surgical intervention.
4. Regular follow-up is necessary to monitor disease activity and manage potential complications.

CRediT authorship contribution statement

George Shaker: Data curation, Formal analysis, Methodology, Writing – original draft, Writing – review & editing.

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