

**CLINICAL IMAGE****Wunderlich syndrome**Gajapathiraju Chamarthi | Abhilash Koratala 

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**Key Clinical Message**

End-stage renal disease (ESRD) patients are predisposed to bleeding diathesis in the setting of uremic platelet dysfunction and endothelial abnormalities. One should have high index of suspicion for spontaneous renal hemorrhage when these patients present with abdominal pain and/or unexplained drop in hemoglobin and appropriate imaging should be undertaken without delay.

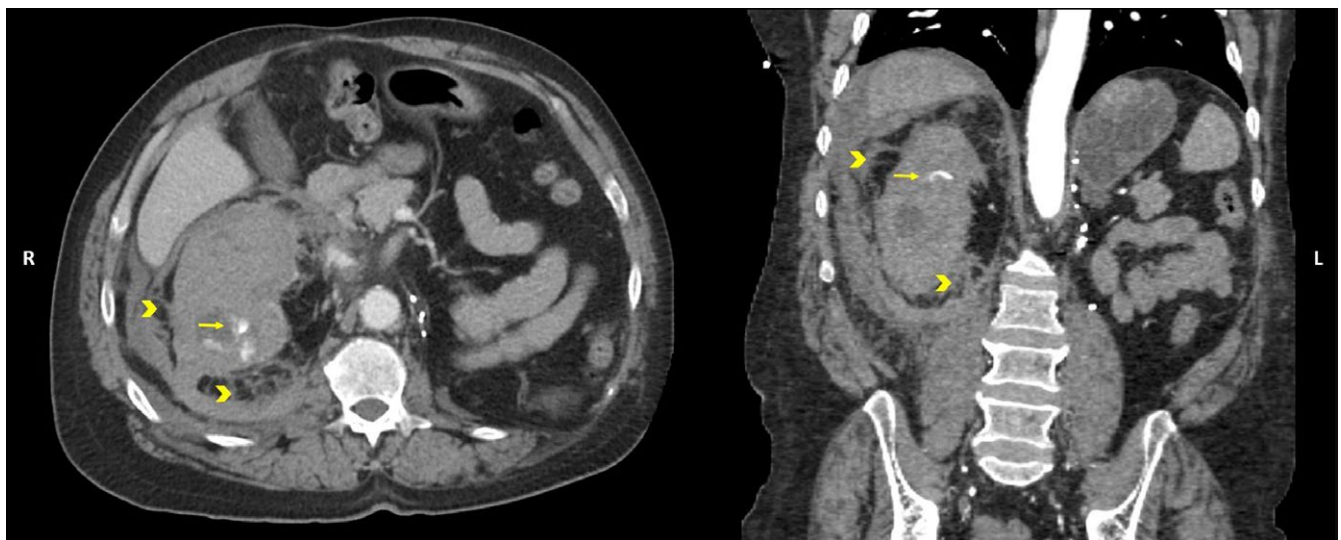
**KEYWORDS**

bleeding, embolization, end-stage renal disease, renal hemorrhage

**1 | CASE**

A 61-year-old man with ESRD, on hemodialysis for 2 years, left renal cell carcinoma status post nephrectomy 20 years ago presented with sudden-onset right flank pain radiating to the right leg. His blood pressure at presentation was

130/90 mm Hg, pulse 98 bpm and physical examination was significant for tenderness over the right flank without signs of peritonitis. Laboratory data demonstrated a drop in hemoglobin to 7.9 g/dL (baseline ~11). Platelet count and international normalized ratio were within normal limits. He was not taking any oral anticoagulants. A computed tomography (CT)



**FIGURE 1** Computed tomography of the abdomen (transverse and coronal views) demonstrating hemorrhage throughout the right kidney extending into the pararenal spaces [chevrons]. Extravasation of the contrast was noted at the upper pole, indicating active bleeding [arrows]

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scan of the abdomen showed acute hemorrhage throughout the right kidney extending into anterior and posterior pararenal spaces. In addition, there was extravasation of contrast at the upper pole, indicating active bleeding (Figure 1). There was no obvious underlying renal mass or cystic disease. He underwent renal artery angiogram and embolization using lipiodol-ethanol mixture and gelfoam. His blood count subsequently stabilized and was discharged in stable condition.

Wunderlich syndrome, first described in 1856 is a rare condition characterized by acute spontaneous, nontraumatic renal hemorrhage into the subcapsular and perirenal spaces.<sup>1</sup> Patients may present with the classic “Lenk’s triad” of acute flank or abdominal pain, a palpable flank mass, and hypovolemia but is usually nonspecific. Angiomyolipoma, renal cell carcinoma, and cystic disease underlie some cases while some are idiopathic, like ours.<sup>2-4</sup> CT scan is the imaging modality of choice and treatment includes renal artery embolization or nephrectomy, depending on the severity. It is important to note that ESRD patients are predisposed to bleeding diathesis in the setting of uremic platelet dysfunction, anemia, increases in nitric monoxide, irregularities in von Willebrand factor and impaired platelet-vessel wall interaction.<sup>5</sup> Clinicians should have high index of suspicion for spontaneous renal hemorrhage when these patients present with abdominal pain and/or unexplained drop in hemoglobin.

#### CONFLICT OF INTEREST

None declared.

#### AUTHORSHIP

Both the authors made substantial contribution to the preparation of this manuscript and approved the final version for submission. GC: drafted the manuscript and performed

literature search. AK: reviewed and revised the manuscript for critically important intellectual content.

#### STATEMENT OF HUMAN AND ANIMAL RIGHTS

This article does not contain any studies with human or animal subjects performed by any of the authors.

#### INFORMED CONSENT

Obtained from the patient.

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