

IMAGES IN EMERGENCY MEDICINE**Ultrasound**

A man with recurrent headaches

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1 | PATIENT PRESENTATION

A 31-year-old male with no past medical history presented to the emergency department (ED) for six months of episodic headaches, chest pain, palpitations, and diaphoresis. He denied fevers, vision changes, or focal neurological changes. The patient reported multiple ED visits for similar complaints, with a negative computed tomography (CT) of the head and no clear diagnosis. On ED arrival, he was hypertensive to 230/100, tachycardic, and anxious appearing, but his physical exami-

nation was unrevealing. Point-of-care ultrasound (POCUS) of the left upper quadrant (Figures 1 and 2) followed by CT confirmed a diagnosis (Figure 3).

2 | DIAGNOSIS: PHEOCHROMOCYTOMA

Pheochromocytomas are a rare form of adrenal tumor that typically present in young adulthood and are characterized by the intermittent



FIGURE 1 Point of care ultrasound image of the left upper quadrant in coronal view demonstrating a 3 cm × 4 cm complex cystic structure adjacent to the left kidney.

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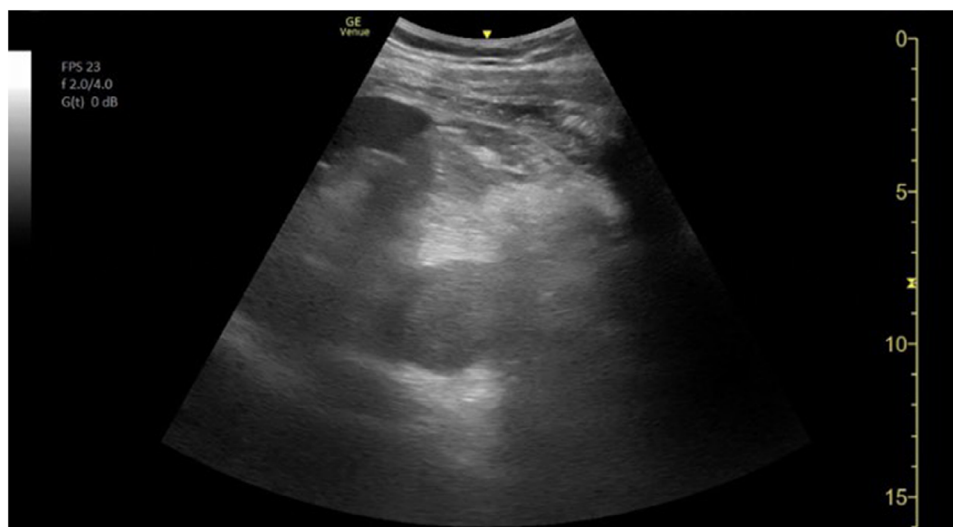


FIGURE 2 Point of care ultrasound image of the left upper quadrant in coronal view demonstrating a complex cystic structure adjacent to the left kidney.



FIGURE 3 Computed tomography image of the left upper quadrant in sagittal view demonstrating a complex cystic mass adjacent to the left kidney.

release of excessive catecholamines.¹ Patients often go undiagnosed with vague presentations for palpitations, chest pain, dyspnea, abdominal pain, or headaches. Importantly, hypertensive emergencies due to pheochromocytomas require unique treatment to prevent cardiovascular collapse, and, for this reason, establishing a correct diagnosis is critical.² CT imaging and urine metanephrines often suggest the diagnosis; however, ultrasound may be useful. Ultrasonographic imaging typically demonstrates a heterogenous mass with increased vascularity adjacent to the upper pole of the kidney, distinct from the

homogeneous echotexture of the adrenal gland.³ Given the ease of use, ED physicians should have a low threshold to utilize POCUS when considering a diagnosis of pheochromocytoma in young patients with hypertensive emergency. After making a diagnosis, the patient was treated with phenoxybenzamine and phentolamine, admitted to the cardiac intensive care unit, and later discharged with a plan for surgery.

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