CLINICAL IMAGES

Episodic palpitations in pheochromocytoma

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A 54-year-old man presented with an 8-week history of episodic palpitations accompanied by chest pain and headache. He had no sweating with the episodes. Investigations included 24-hour urine collection for the presence of metanephrines. One month later, while awaiting the results of the investigations, the patient went to the emergency department with a recurrence of the palpitations. He was initially found to be in normal sinus rhythm with a serum cardiac troponin I level of 0.26 (normal < 0.03) $\mu\text{g/L}$. During cardiac monitoring, he experienced an episode of palpitations with a peak heart rate of 186 beats/min in supraventricular tachycardia. His blood pressure rose from a baseline of 100/58 mm Hg to 172/76 mm Hg and peaked at 262/172 mm Hg. The arrhythmia resolved spontaneously with the patient's blood pressure dropping to 92/56 mm Hg.

On two 24-hour urine collections, urinary metanephrine levels were elevated at 7.1 and 10.3 (normal 0–1.7) $\mu\text{mol/day}$. The patient's urinary metanephrine-to-creatinine ratios were 0.855 and 0.972 (normal < 0.354). An α -receptor antagonist was started and titrated to control the patient's blood pressure levels. A β -receptor antagonist was added once adequate alpha blockade had been achieved. A computed tomography scan without contrast performed 2 weeks later showed a 4-cm mass on the left adrenal gland (Figure 1). A laparoscopic adrenalectomy was performed 1 month later. Pathologic examination of the adrenal mass after resection was consistent with the diagnosis of pheochromocytoma.

Pheochromocytoma is a catecholamine-secreting neuroendocrine tumour usually found in the adrenal gland. It is the cause of hypertension in approximately 0.2% of patients with hypertension.¹ Classic symptoms, such as the triad of episodic headache, sweating and tachycardia, are typical. Episodic hypertension occurs in about half of patients with pheochromocytoma.¹ Diagnosis is usually made on the basis of ele-

Figure 1: Computed tomography scan of the abdomen of a 54-year-old man with pheochromocytoma, showing a 4-cm mass (arrow) on the left adrenal gland.

vated catecholamine and metanephrine levels in the serum or 24-hour urine collections. The ratio of urinary metanephrines to urinary creatinine may be more diagnostically accurate because it controls for incorrect 24-hour urine collections.² Treatment includes β -receptor antagonists once adequate α -blockade has been achieved with an α -receptor antagonist. This sequencing prevents unopposed α -stimulation that may worsen the hypertension.¹ Definitive therapy involves surgical resection. Rates of complication are similar between open and laparoscopic adrenalectomy (about 27%).³

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