VIA MEDICA

CASE REPORT

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Pheochromocytoma mimicking a non-ST elevation acute myocardial infarction

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Abstract

We report a 57 year-old male patient admitted with a diagnosis of non-ST elevation acute myocardial infarction. He had suffered from chest pain, diaphoresis and intense asthenia for three days. The electrocardiogram on admission showed a high frequency sinus tachycardia. Troponin T levels were elevated. An echocardiogram suggested an antero-lateral myocardial infarction. Eventually, a left adrenal pheochromocytoma was discovered. Left ventricular function, severely depressed, returned to normal after medical and surgical therapy. (Cardiol J 2009; 16, 4: 355–357)

Key words: pheochromocytoma, acute myocardial infarction

Case report

A 57 year-old man with a history of hypertension, diabetes and dyslipidemia presented to the emergency department with chest pain, diaphoresis and intense asthenia of three days duration. Physical examination on admission was unremarkable. Blood pressure was 160/110 mm Hg. The electrocardiogram showed a sinus tachycardia of 170 beats/min without signs of myocardial ischemia (Fig. 1). An echocardiogram revealed a mild left ventricular enlargement with akinesia of the septum and anterolateral wall (Fig. 2). The left ventricular ejection fraction was 30%. Laboratory findings showed: elevated white cells count ($23.6 \times \times 10^9$/L (NV 4–10), serum glycemia of 305 mg/dL (NV 60–110 mg/dL) and a myoglobin level of 189 μg/L (NV 28–72 μg/L) with troponin T of 0.39 μg/L (NV < 0.03 μg/L). The patient was treated initially with aspirin, clopidrogel, fondaparinux, ramipril and intravenous metoprolol. Nevertheless, in a few hours he became hemodynamically unstable with sinus tachycardia of up to 170 beats/min and fluctuating blood pressure from 70 to 220 mm Hg.

The suspicion of a pheochromocytoma was confirmed by elevated levels of urine and plasma catecholamines: 24-hour urine levels of metanefrine were 20.74 μmol/d (NV 0.4–1.5 μmol/d), levels of noradrenaline were 3600 μg/d (NV 12–85 μg/d), dopamine 2520 μg/d (NV 120–420 μg/d), adrenaline 1500 μg/d (NV 2–25 μg/d), and cortisol were 461 μg/d (NV 70–200 μg/d). Plasma renin values were 34.1 pg/mL (NV 1.3–18.5 pg/mL). Computed tomography scan of abdomen showed a left adrenal mass (Fig. 3). An iodine-123 metaiodobenzylguanidine scan demonstrated increased uptake in the left adrenal gland. On the basis of these results, an alpha-adrenergic blocker (terazosin 4 mg daily) was added to his treatment regimen. In a few days, the clinical status of the patient improved. He was normotensive with only intermittent sinus tachycardia.

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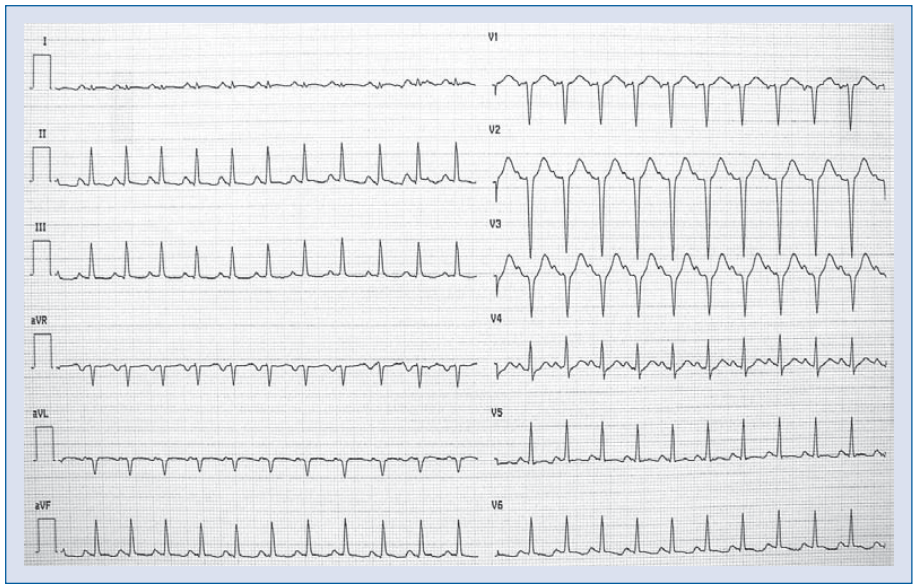

Figure 1. Electrocardiogram on admission showing a sinus tachycardia of up to 170 beats/min during adrenergic crisis.

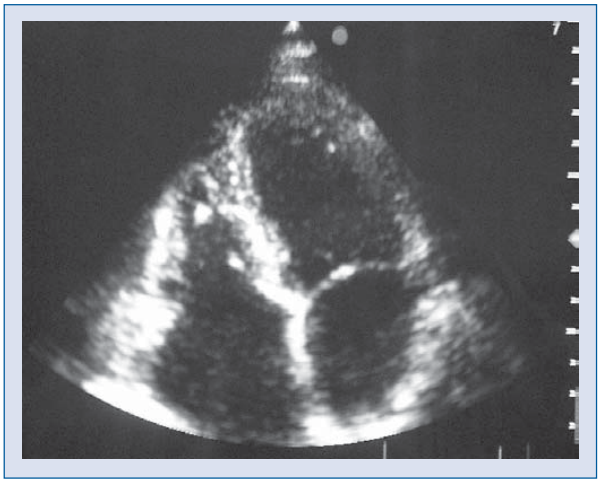

Figure 2. Echocardiogram (four chamber view) revealing enlargement of the left ventricle with wall motion abnormalities and severely depressed function.

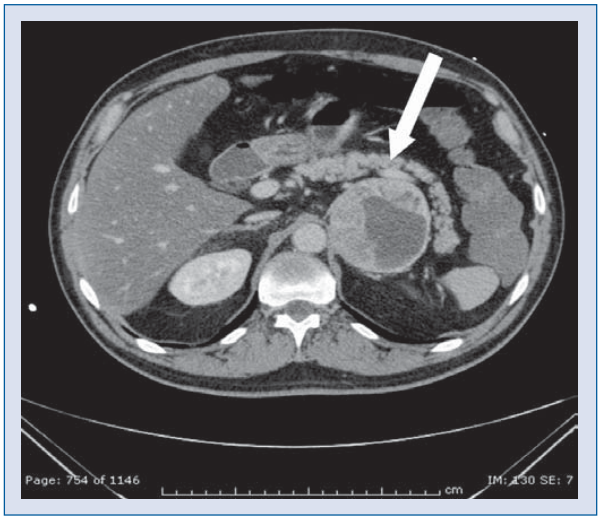

Figure 3. Computed tomography abdomen scan showing a giant mass in the left adrenal gland.

Left adrenalectomy was performed 20 days after admission to hospital. Pathological examination revealed an 8.5 cm pheochromocytoma.

A repeat echocardiogram before discharge showed an improvement of left ventricular systolic function (the ejection fraction was 55%), with normal regional wall motion.

Discussion

Pheochromocytoma is a rare tumor that originates in chromaffin tissue and produces its variant effects by secretion of catecholamines, tending to mislead emergency department physicians into making a wrong diagnosis [1]. In hypertensive patients presenting with chest pain, echocardiographic abnormalities and typical isoenzyme changes, pheochromocytoma should also be included in the differential diagnosis of acute coronary syndrome. In fact, acute catecholamine secretion may induce chest pain and segmental myocardial dysfunction mimicking an ischemic acute episode [2, 3]. In our case, fluctuating blood pressure and high frequency sinus tachycardia raised the suspicion of a pheochromocytoma.

Elevated levels of urine and plasma catecholamines supported the diagnosis. Computed tomography scan and 123 metaiodobenzylguanidine uptake corroborated it. Echocardiographic left ventricular dysfunction resolved completely after therapy with an alpha-adrenergic blocker and tumor removal.

In conclusion, we suggest that suspecting pheochromocytoma in patients presenting with an unexpected myocardial event and paroxysmal hypertension will help avoid mistakes in their treatment.

Acknowledgements

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