

Acute coronary syndrome and sinus node arrest complicating preoperative management of pheochromocytoma

Sir,

We report the case of a 48-year-old male patient who was admitted for preoperative management of a pheochromocytoma, diagnosed 2 weeks ago. Previous history included type 2 diabetes, and uneventful lumbar herniated disc (L4-L5) repair. Since 1 month, the patient complained of abdominal pain, palpitations, and hypertensive crises (190/100 mmHg). Clinical examination was normal. Baseline electrocardiogram (ECG) showed sinus rhythm with left axis deviation and an

incomplete right bundle branch block. The computerized tomography scan showed a heterogeneous nodule, 35 mm in diameter on the left suprarenal gland. The diagnosis of pheochromocytoma was confirmed by urinary metanephrine (5800 mcg/24 h) and normetanephrine (27,800 mcg/24 h) and metaiodobenzylguanidine scintigraphy. Prazosin was started and postural hypotension was achieved at a dose of 5 mg daily. Three days prior to surgery, the patient was prepared in the cardiology unit using intravenous (IV) urapidil. A few hours later, he had sudden left thoracic pain followed by syncopal attack; ECG showed ST depression >5 mm in all leads, suggesting an acute coronary syndrome. Bradycardia (35 beats/min) and hypotension (blood pressure [BP] 80/40 mmHg) were noted. The patient received loading doses of prasugrel and aspirin. Coronary angiography revealed a moderate stenosis of the first marginal artery. Trans-esophageal echocardiography revealed no regional wall abnormality; left ventricular ejection fraction was 53%. Troponin value was 0.4 ng/ml. Continuous IV urapidil was started at 15 mg/h and surgery was planned 4 days later. Twenty four hours after the introduction of urapidil, the patient had a 2nd episode of syncopal attack with hypotension, bradycardia, and cardiac arrest. External cardiac massage was performed and an atrial fibrillation was noted. A temporary pacemaker was inserted and subcutaneous enoxaparin (Lovenox®) at therapeutic dose started. Laparoscopic resection of pheochromocytoma was performed under target controlled anesthesia with propofol 4-6 µg/ml, sufentanil 0.3-0.5 ng/ml, cisatracrium, and sevoflurane. IV urapidil (15 mg/h) was continued until the end of tumor resection. Transient high BP (172/95 mmHg) was noted during tumor resection. The patient did not use the temporary pacemaker and the device was removed after 1 week observation. At follow-up, 2 months later, a 24 h Holter was normal.

Pheochromocytoma can result in various cardiac manifestations related to the paroxysmal circulation of excess catecholamines.^[1] Left ventricular hypertrophy, congestive heart failure due to prolonged hypertension, dilated cardiomyopathy, cardiogenic shock, and acute adrenergic cardiomyopathy have been reported.^[1] Potentially lethal arrhythmias such as ventricular tachycardia have also been described. However, pheochromocytoma rarely mimics acute coronary syndrome.

Hypotension, due to prazosin and urapidil combination, may have precipitated to the development of the second syncope. However, sinus node arrest was suspected in this patient with bradycardia-related presyncope.^[2] Transient autonomic dysregulation caused by intermittent excess-secretion of catecholamines and/or the action of urapidil could have been

associated. The central sympatholytic effect of urapidil on the 5HT_{1A} receptors and a weak β negative effect may have contributed to induce severe bradycardia or may have potentiated the effects of prazosin.^[3] However, cardiac arrest, atrioventricular block revealing pheochromocytoma have also been reported, leading to temporary pace-maker insertion.^[4]

Surgical removal of pheochromocytoma should be performed after adequate preoperative management by α blocker. Urapidil presents fast onset (5-10 min), high bioavailability, high clearance, and short elimination half-life. Its competitive and selective short acting α -1 blockade make it suitable in this situation.^[5] Nonetheless, urapidil may present a rare side-effect requiring a temporary pace-maker.

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