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## Clinical Communications: OB/GYN

### POSTPARTUM DIAGNOSIS OF CARDIAC PARAGANGLIOMA: A CASE REPORT

Kristin Berona, MD,\* Rita Joshi, MD,† Y. Joseph Woo, MD,‡ and Joseph Shrager, MD‡

\*Department of Emergency Medicine, Kaiser Permanente Santa Clara Medical Center, Santa Clara, California, †Department of Radiology, Kaiser Permanente Santa Clara Medical Center, Santa Clara, California, and ‡Department of Cardiothoracic Surgery, Stanford University School of Medicine, Stanford, California

Reprint Address: Kristin Berona, MD, Department of Emergency Medicine, Kaiser Permanente Santa Clara Medical Center, 710 Lawrence Expressway, #100, Santa Clara, CA 95051

□ **Abstract—Background:** Extra-adrenal pheochromocytomas, or paragangliomas, originate from neural crest chromaffin cells and can be found anywhere along the sympathetic chain from head to toe. **Case Report:** A 34-year-old female presented 4 days postpartum with episodes of palpitations, hypertension, and shortness of breath. Two episodes in the emergency department confirmed hypertension and supraventricular tachycardia (SVT). A mediastinal mass was noted during workup for pulmonary embolus and was subsequently diagnosed as a cardiac paraganglioma. Our patient underwent surgical resection and was doing well 3 months postoperatively. **Why Should an Emergency Physician Be Aware of This?:** This case represents a rare presentation of mediastinal paraganglioma with episodic SVT and hypertension postpartum, diagnosed during workup for pulmonary embolus. Although exceedingly rare, emergency physicians should consider paragangliomas in the differential of pregnant or postpartum women who present with episodic hypertension, palpitations, headache, and sweating. © 2018 Elsevier Inc. All rights reserved.

□ **Keywords—**imaging; cardiac mass; supraventricular tachycardia; paraganglioma

#### INTRODUCTION

Extra-adrenal pheochromocytomas, or paragangliomas, originate from neural crest chromaffin cells and can be

found anywhere along the sympathetic chain from head to toe. These catecholamine-secreting tumors are extremely rare, and mediastinal paragangliomas account for only 2% of all paragangliomas (1). We report a case of cardiac paraganglioma initially diagnosed with computed tomography pulmonary angiography (CTPA) in a recently postpartum woman.

#### CASE REPORT

A 34-year-old female gravida 2, para 2 presented to the emergency department (ED) with palpitations and shortness of breath. The patient had undergone an uncomplicated repeat Cesarean section (C-section) for premature rupture of membranes with spinal anesthesia 4 days prior. On postoperative day (POD) 2, her blood pressure was noted to be 159/80 mm Hg, which improved to 129/80 mm Hg on recheck without intervention. Before discharge, her urine protein to creatinine ratio was 0.25 mg/mg, aspartate aminotransferase (AST) was 18 U/L, uric acid was 5.9 mg/dL, and lactate dehydrogenase was 145 U/L; all normal values, making pre-eclampsia less likely. Her post C-section hemoglobin (hgb) was 10.6 g/dL, with platelets 314,000/ $\mu$ L. She was asymptomatic and so was discharged on POD 2 with a plan for blood pressure (BP) recheck. On the day of presentation to the ED, she endorsed several episodes of palpitations and shortness of breath lasting up to 10 min and self-

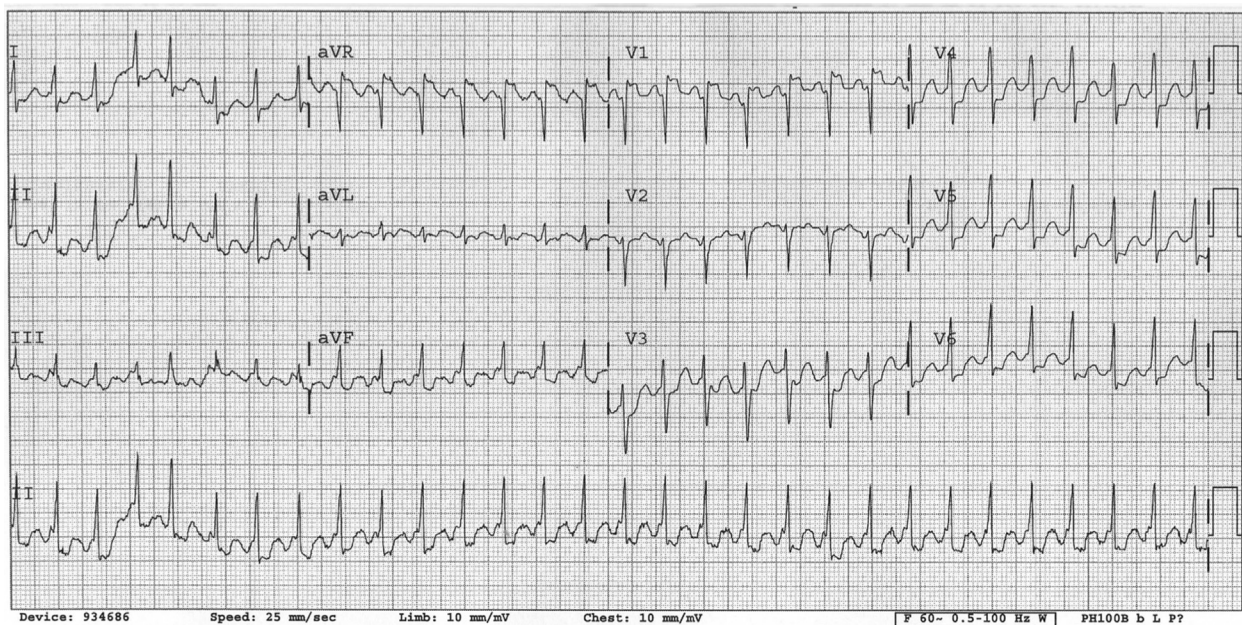
resolving. These episodes were associated with lower back pain and frontal headache. She took her BP during one episode and noted a systolic BP of 160 mm Hg and a heart rate of 185 beats/min. She denied chest pain, lower-extremity edema, fever, and significant vaginal bleeding or discharge.

Her medical history was significant for endometriosis, benign carcinoid tumor of appendix, and gastroesophageal reflux disease. Her surgical history included a right ovarian cystectomy and appendectomy in 2011 and a C-section in 2012. She had no known allergies to medications, and she was currently taking iron, ibuprofen, oxycodone, acetaminophen, and stool softeners.

Her initial vital signs included blood pressure of 162/93 mm Hg, heart rate of 90 beats/min, respiratory rate of 18 breaths/min, oxygen saturation 100% on room air, and temperature 98.7°F. Her cardiac examination demonstrated mild tachycardia without murmurs, rubs, or gallops; intact distal pulses; pulmonary examination was clear; and abdominal examination was significant for a lower abdominal incision that was clean, dry, and intact with staples. She exhibited no lower-extremity edema. Her initial electrocardiogram (ECG) showed a sinus tachycardia with a rate of 115 beats/min, biatrial enlargement, and normal ST segments. Her laboratory evaluation included white blood cell count of 10,7000/ $\mu$ L, hgb of 11.9 g/dL, platelets of 536,000/ $\mu$ L, normal chemistry (including creatinine 0.63 mg/dL), normal calcium, magnesium and phosphate, AST was normal at 34 U/L, troponin was undetectable at <0.02 ng/mL, a slightly

elevated  $\beta$ -natriuretic peptide at 139 pg/mL, and normal thyroid-stimulating hormone. Her chest x-ray study was normal. Her D-dimer was elevated at 1493 ng/mL, so CTPA was ordered.

While awaiting the CT scan, the patient had two episodes of sudden tachycardia ranging from 170 to 200 beats/min with associated chest pain, shortness of breath, headache, and blood pressure elevated to 170/132 mm Hg. An ECG obtained was interpreted as supraventricular tachycardia (SVT). Adenosine was ordered, however, the tachydysrhythmia improved with vagal maneuvers before adenosine administration (Figure 1). The SVT occurred again with heart rate in 200s, but self resolved after 2 min. CTPA demonstrated no evidence of pulmonary embolism, however, a hypodense, minimally enhancing mass measuring 3.2  $\times$  3.5  $\times$  2.2 cm was noted posterolateral to the left atrium, exerting mild mass effect. It was situated between the left superior and inferior pulmonary veins abutting the anterior margin of the descending thoracic aorta (Figures 2 and 3). Differential diagnosis included left atrial myxoma, pericardial mass, or large thrombus arising from the wall of the left atrium. In consultation with cardiology and obstetrics/gynecology, the patient was given metoprolol and magnesium and admitted. A transthoracic echocardiogram did not reveal an intracardiac mass, so cardiac magnetic resonance imaging was performed, which showed a T1 and T2 hyperintense ovoid mass in the same location and re-demonstrated mild mass effect upon the left atrium and left pulmonary vein (Figure 4). The 24-h urine



**Figure 1. Electrocardiogram during episode of palpitations, shortness of breath, chest pain, and headache, interpreted real time as supraventricular tachycardia with likely non-sinus p-waves throughout tracing.**

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