

## IMAGES IN EMERGENCY MEDICINE

## Cardiovascular

# Women with sudden cardiac arrest

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## 1 | CASE PRESENTATION

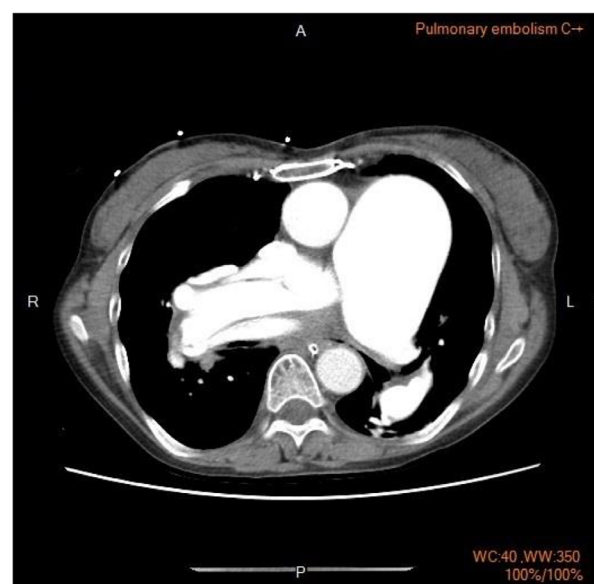
A 54-year-old woman with uncontrolled pulmonary hypertension presented to the emergency department after suddenly collapsing during a morning prayer meeting and experiencing return to spontaneous circulation after bystander cardiopulmonary resuscitation without electrical shock as advised by an automated external defibrillator. She had an elevated D-dimer level of 13.9 mg/L. Transthoracic echocardiography revealed right atrial enlargement, right ventricular strain, D-shaped left ventricle, and elevated tricuspid regurgitation peak gradient (TRPG) of 107 mmHg. Chest computed tomography angiography (CTA) revealed right pulmonary artery dissection (Figure 1).

## 2 | DIAGNOSIS

### 2.1 | Pulmonary arterial dissection

The patient received inhaled nitric oxide and oral sildenafil to control the pulmonary hypertension. TRPG improved to 81 mmHg after 1 week of treatment. Because of poor neurologic outcomes and subsequent pneumonia, she died 1 month later without undergoing surgery.

Pulmonary arterial dissection (PAD) usually is associated with pulmonary hypertension or aneurysm.<sup>1</sup> It can manifest as dyspnea, chest pain, cyanosis, hemoptysis, or other non-specific symptoms.<sup>2</sup> When it causes artery wall rupture, it instigates cardiac tamponade and cardiogenic shock. However, up to 25% of patients with PAD die without any sign of hemodynamic decompensation,<sup>3</sup> which makes diagnosis difficult. CTA is still the mainstay diagnostic tool. Medical treatment aims to reduce right ventricle preload and afterload. Medications for reduced pulmonary hypertension, such as endothelin receptor antagonists, phosphodiesterase type 5 inhibitors, and soluble guanylate cyclase stimulants, are helpful.<sup>2,4</sup> No consensus treatment



**FIGURE 1** Chest computed tomography angiography revealing dissection of the right pulmonary artery

guidelines have been developed, but surgical management or medical management followed by surgery seems to be slightly better than medical management alone.<sup>2</sup>

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