

**IMAGES IN EMERGENCY MEDICINE**

## Imaging

**Elderly woman in cardiopulmonary arrest**

Kazusa Saegusa MD | Satoshi Yoshikawa MD | Takeshi Ueda MD

Department of Emergency and General Internal Medicine, Rakuwakai Marutamachi Hospital, Kyoto, Kyoto, Japan

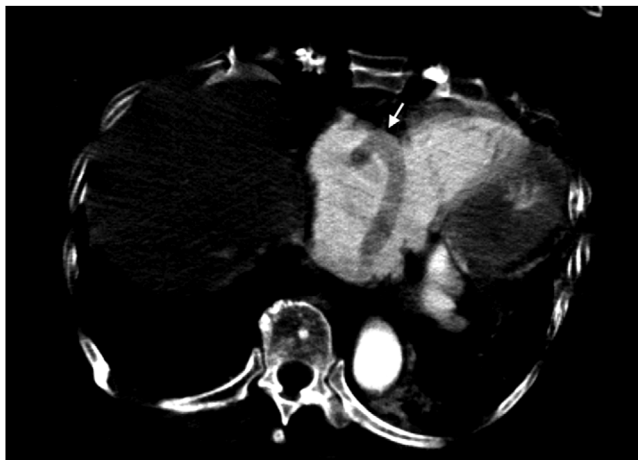
**Correspondence**

Kazusa Saegusa, MD, Rakuwakai Marutamachi Hospital, Department of Emergency and General Internal Medicine, Marutamachi-noboru, Shichihonmatsu-dori, Nakagyo-ku, Kyoto City, Kyoto, 604-8401, Japan.

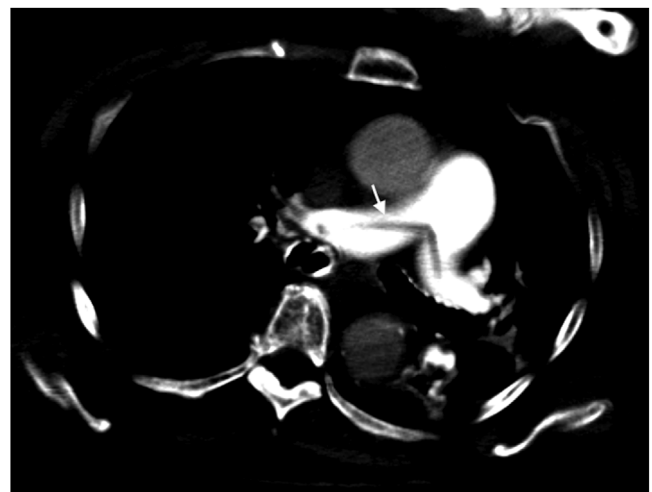
Email: ksaegusa.tky@gmail.com

**1 | CASE DESCRIPTION**

A 95-year-old female from a nursing home with a history of rheumatoid arthritis presented with cardiopulmonary arrest (CPA). She initially exhibited pulseless electrical activity, but upon arrival, her spontaneous circulation had returned and her blood pressure and pulse were 116/57 mmHg and 160 beats/min, respectively. We observed jugular vein dilation during the physical examination. Transthoracic echocardiography revealed a dilated right ventricle and a large free-floating right atrial thrombus. Computed tomography pulmonary angiography showed a large bilateral pulmonary embolus and a snake-like filling defect in the right atrium (Figures 1 and 2).



**FIGURE 1** Computed tomography angiography image showing a snake-like defect in the right atrium



**FIGURE 2** Computed tomography angiography image showing a large bilateral pulmonary embolus

**2 | FINAL DIAGNOSIS AND TEACHING POINTS**

We diagnosed a saddle pulmonary embolism and right atrial thrombus and started thrombolytic therapy because she could not tolerate surgery. Five hours after arrival, another CPA occurred. During resuscitation, the right atrial thrombus vanished and was assumed to be the cause of the second CPA. The family stopped treatment and the patient died.

Mobile right heart thrombi (MRHT) are a rare complication of pulmonary thromboembolism (PTE); they occur in 3%–23% of cases.<sup>1</sup> MRHT can be a primary cause of death and has an overall

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mortality rate of 21.3%, much higher than PTE.<sup>2</sup> Although appropriate management of MRHT is unclear, thrombolytic therapy is recommended for patients who have pulmonary embolism and are hemodynamically deteriorating.<sup>3,4</sup> A lower all-cause mortality has been reported with systemic thrombolysis than that with anticoagulants (odds ratio [OR], 0.53; 95% confidence interval [CI], 0.32–0.88; 2.17% vs 3.89%; number needed to treat: 59)<sup>5</sup> In settings of cardiopulmonary resuscitation, it improved the rate of return of spontaneous circulation (OR, 2.57; 95% CI, 1.76–3.74; 70.2% vs 48.6%), 24-hour survival rate, survival to discharge, and long-term neurological function.<sup>6</sup> Extracorporeal circulation should be considered when the patient is hemodynamically unstable.<sup>1–2,4</sup>

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