

# An Unusual Cause of Superior Vena Cava Syndrome: Loculated Malignant Pericardial Effusion



Chi-Cheng Huang, MD,<sup>a</sup> Hung-Lung Hsu, MD,<sup>b</sup> Chung-Jen Teng, MD,<sup>c</sup>  
Shin-Rong Ke, MD, MS<sup>a,\*</sup>

<sup>a</sup>Division of Cardiology, Cardiovascular Medical Center, Far-Eastern Memorial Hospital, New Taipei City, Republic of China

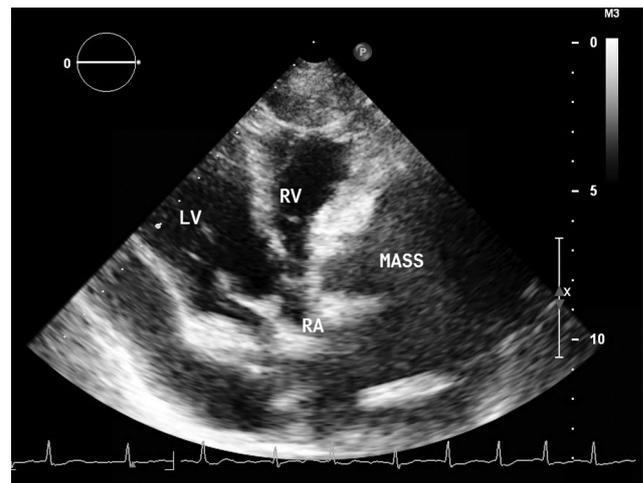
<sup>b</sup>Division of Cardiovascular Surgery, Cardiovascular Medical Center, Far-Eastern Memorial Hospital, New Taipei City, Republic of China

<sup>c</sup>Division of Hematology and Oncology, Department of Internal Medicine, Far-Eastern Memorial Hospital, New Taipei City, Republic of China

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A 70-year-old woman who had remained disease-free for 6 years after a right lower lung lobectomy and chemotherapy for adenocarcinoma of the lung presented with facial swelling that began approximately 3 weeks earlier. She had been hospitalized 8 months before her current admission because of dyspnea on exertion and leg edema; massive pericardial effusion (PE) was found, and her symptoms improved after pericardiocentesis. A cytologic study at the time found no malignant cells. Approximately 2 to 3 weeks before this admission, she had started to suffer from cough, dyspnea, and palpitation, so she decided to seek assistance from our clinic. Echocardiography revealed an isoechoic mass compressing the right atrium (Fig. 1) and a moderate amount of PE without signs of tamponade; however, computed tomography established the mass to be a loculated PE causing compression of the right atrium and superior vena cava (SVC) (Figs. 2A and 2B). Pericardiocentesis was performed, and a total of 470 mL of serosanguinous effusion was drained; her facial swelling rapidly improved after the procedure. Pathologic study confirmed a malignant effusion. No PE or lymphadenopathies were found at the 6-month follow-up (Figs. 2C and 2D).

In patients with lung cancer, SVC syndrome is usually related to direct mass effect or thrombosis.<sup>1</sup> Malignant PE is not uncommon, but it rarely affects cardiac function unless tamponade occurs, at which time emergency pericardiocentesis is indicated.<sup>2</sup> In our case, the SVC syndrome was caused by compression of a loculated PE in which no signs of tamponade were found but symptoms improved after pericardiocentesis. Loculated effusion that significantly affects cardiac function has been reported in patients after pericardiectomy,<sup>3</sup> but in our



**Figure 1.** Echocardiography from tilted parasternal long-axis view revealed an isoechoic “mass” on the right anterior border of the heart, compressing the right atrium (RA) during diastole. Moderate amount of pericardial effusion (PE) accumulated posteriorly, with no signs of right ventricle (RV) tamponade. The contractility of left ventricle (LV) was preserved.

case, the loculation may have been secondary to scarring resulting from previous pericardiocentesis. This causal relationship was corroborated by the temporal order of effusion drainage and subsequent resolution of

\*Corresponding author.

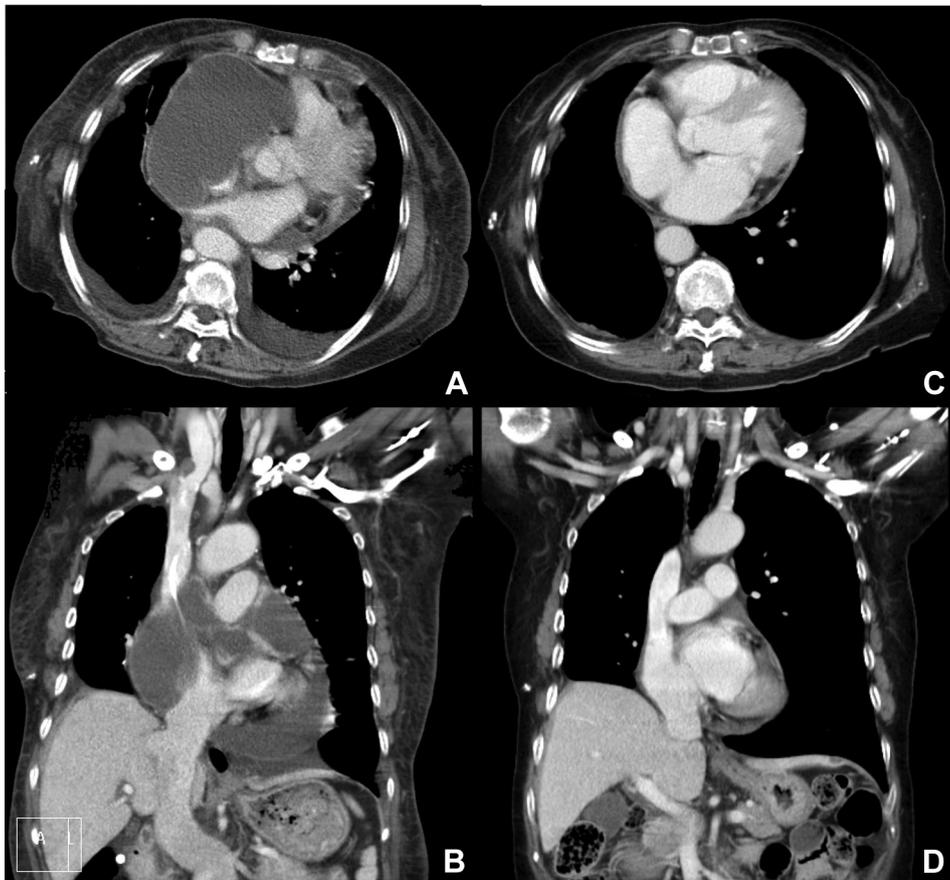
*Disclosure: The authors declare no conflict of interest.*

Address for correspondence: Shin-Rong Ke, MD, MS, Cardiovascular Medical Center, Far-Eastern Memorial Hospital, No. 21, Sec. 2, Nanya S. Rd., Banqiao Dist., New Taipei City 220, Republic of China. E-mail: [ksrung@yahoo.com.tw](mailto:ksrung@yahoo.com.tw)

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**Figure 2.** Computed tomography of the mediastinum and great vessels (A, axial; B, coronal view) demonstrated the anatomical relationship between loculated pericardial effusion (PE) and superior vena cava (SVC). The SVC and right atrium were compressed by PE and nodules of soft tissue density- probably metastatic cancer or lymphadenopathy. Six months after surgical drainage and erlotinib therapy, no pericardial effusion or nodular lesions were found (C, axial; D, coronal view).

symptoms in the patient. This case also serves to underscore the diagnostic importance of computed tomography, as evidenced by the fact that the initial “isoechoic mass” discovered by echocardiography provided little clue as to its nature as a loculated malignant PE. Effectively identifying such patients is critical because they could benefit from pericardiocentesis even if there is only a small amount.

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