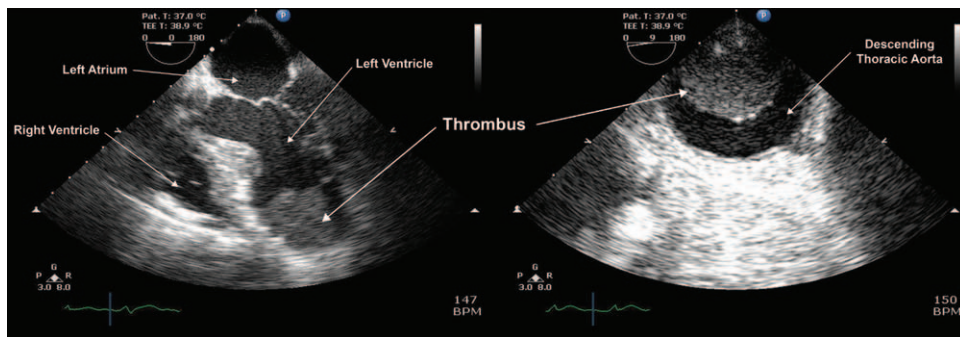


Charles D. Collard, M.D., Editor
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Systemic Thrombus Formation in Cardiac Arrest

Manifestation of Cardiac Arrest-related Hypercoagulability Visualized by Transesophageal Echocardiography

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A 63-YR-OLD man with ischemic cardiomyopathy presented for pacemaker laser lead extraction with general anesthesia. After successful lead removal, he became acutely hypotensive. Immediate transesophageal echocardiography (TEE) revealed a large pericardial effusion, and despite pericardiocentesis and pharmacologic intervention, the

patient suffered cardiac arrest. After a brief period of cardiopulmonary resuscitation, spontaneous circulation was restored. At that time, TEE showed multiple new thrombi in the heart and descending thoracic aorta that were not visualized earlier (fig., and see video clip, Supplemental Digital Content 1, <http://links.lww.com/ALN/A993>). Heparin was administered before emergent institution of cardiopulmonary bypass, and aminocaproic acid was deliberately withheld in light of widespread arterial thrombosis. After surgical repair of a superior vena cava tear caused by the lead extractions, TEE did not demonstrate remaining thrombus and heparin was subsequently reversed with protamine. The patient recovered without manifestations of embolic disease such as stroke, renal dysfunction, intestinal ischemia, or acronecrosis. He was discharged 9 days later.

A significant increase in procoagulant activity after cardiac arrest and resuscitation has been described even in patients without preexisting coagulation abnormalities.¹ Endogenous anticoagulation and fibrinolysis typically fail to adequately oppose this induction of systemic hypercoagulability.¹ Although earlier retrospective analyses favored the use of anticoagulant and fibrinolytic medications in the treatment of cardiac arrest, a more recent, prospective trial could not confirm these findings in general.² In this patient, we chose to withhold our standard antifibrinolytic therapy during cardiopulmonary bypass and fully reversed the systemic heparinization based on TEE imaging. This case highlights the potential value of TEE in guiding therapy during cardiac arrest and cardiopulmonary resuscitation.³

Competing Interests

The authors declare no competing interests.

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