

IMAGES IN ELECTROPHYSIOLOGY

The Sinister Mammary Hematoma

Extreme Pacing Lead Perforation Into the Breast



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An 83-year-old woman presented to the emergency department with a painful mammary hematoma. Her medical history included coronary artery bypass surgery with mitral valve replacement and permanent pacemaker insertion 10 years previously. Twelve months earlier, her pacemaker had been upgraded to a biventricular automatic implantable cardioverter-defibrillator in the setting of dyssynchrony and heart failure.

Ultrasonography of the mammary hematoma revealed the right ventricular (RV) pacing lead was now within the left breast and sited within a 26 × 12 × 17 mm fluctuant collection that moved with apical impulse. Computed tomography confirmed erosion of the bipolar RV lead through the apex of the heart, the pericardium, and the intercostal space into the subcutaneous fat of the left breast.

Our patient proceeded to surgery, performed via submammary incision with dissection down to the lead and surrounding collection. The pacing lead had completely penetrated the cardiac apex (Figures 1 and 2, Online Videos 1 and 2). Thirty milliliters of purulent fluid was drained and cultured for *Staphylococcus epidermidis*. The RV lead was successfully repositioned and the cardiac apex repaired. Our patient was

discharged 19 days later on lifelong amoxicillin/clavulanic acid and remains well.

There are multiple published case reports of pacing lead perforation, with varying degrees of

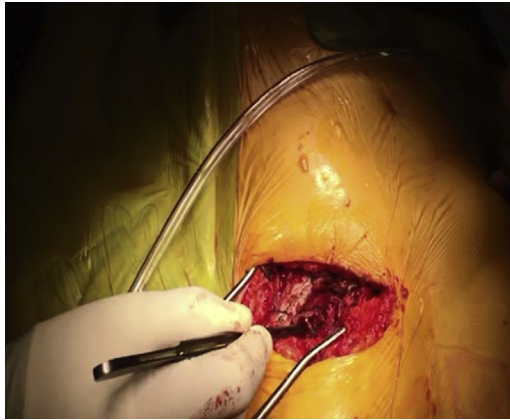
FIGURE 1 Exposed Pacing Lead



Submammary incision is performed; the pacing lead spears the cardiac apex (Online Video 1).

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FIGURE 2 Complete Pacing Lead Perforation

The pacing lead has perforated the heart completely and moves according to cardiac contraction ([Online Video 2](#)).

fatality. Our case represents one of the most extreme survivable lead perforations ever reported. Lead perforation has been variously reported through the right ventricle into the right coronary artery, the lungs, the pleural cavity, the breast, the diaphragm, and even the colon (1-3). Automatic implantable cardioverter-defibrillator leads, older age, and female sex have all been consistently identified as higher-risk features for late lead perforation (4).

We recommend that mammary hematoma in the patient with a pacing device should always be carefully investigated with appropriate chest imaging.

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APPENDIX For supplemental videos, please see the online version of this article.