A Ghost in the Heart

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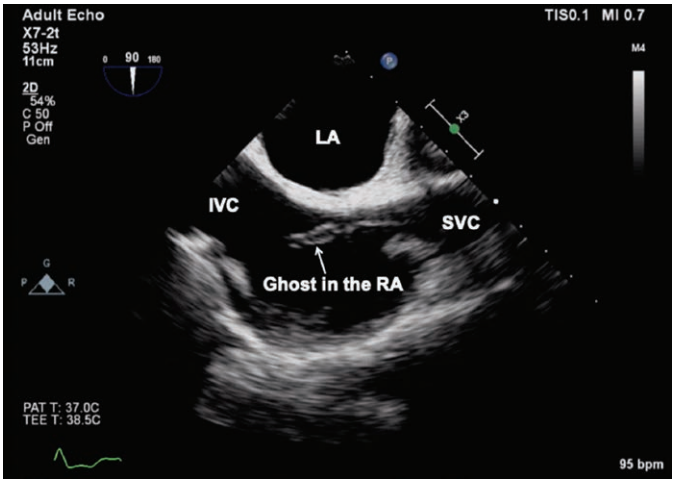

This midesophageal bicaval view on transesophageal echocardiography shows a tubular residual floating mass often referred to as a "ghost" emerging from the superior vena cava (SVC) and floating freely in the right atrial (RA) cavity immediately after a transvenous lead extraction (see Supplemental Digital Content, http://links.lww.com/ALN/B900; LA in the image indicates left atrium and IVC indicates inferior vena cava). The increasing number of patients with cardiovascular implantable electronic devices in recent years has led to a growing need for transvenous lead extractions, the main indications for which are cardiac device–related infective endocarditis, local device infection, lead dysfunction, and device upgrading. In about 8 to 14% of transvenous lead extractions, such ghosts have been detected on imaging studies, the pathophysiology of which can be explained by the growth of a fibrous sleeve around the lead.[1] These structures may persist indefinitely after laser lead extraction, can often be confused as thrombi or vegetations during echocardiography, and are a potential source of pulmonary embolism.[2]

Although occasionally seen after transvenous lead extraction in the context of reactive pericarditis without any known infectious causes,[3] the presence of ghosts after transvenous lead extraction has almost exclusively been associated with a preoperative diagnosis of either cardiac device–related infective endocarditis and local device infection in both retrospective and prospective studies, suggesting that infection may be the driver for ghost development.[1] Such ghosts have been found to be independent predictors of mortality, increasing mortality by more than three times at midterm follow-up. This information, when communicated to the cardiologists, can help them identify this subgroup of patients who need closer clinical surveillance postoperatively.[1]

Competing Interests

The authors declare no competing interests.

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