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Images in Cardiology

Large Biventricular Thrombi Associated With Peripartum Cardiomyopathy

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A 29-year-old woman (G2P2), known to have peripartum cardiomyopathy (PPCM), was admitted with decompensated heart failure 2 weeks after undergoing a cesarean section for preeclampsia complicating her second pregnancy. She was diagnosed with the condition in her first pregnancy, 2 years prior. At that time, she experienced increasing dyspnea near term. A transthoracic echocardiogram revealed a markedly dilated left ventricle (LV) with severely depressed LV ejection fraction (LVEF), which was estimated to be ∼30%. The patient was started on anti-remodeling therapy, but unfortunately was lost to follow-up until the current presentation.

During her current pregnancy, she underwent emergency cesarean section at a peripheral hospital for preeclampsia at 35 weeks of gestation. She then presented to our institution in moderate respiratory distress, with bilateral pedal edema, 2 weeks after her surgery. The echocardiogram, this time, revealed a severely dilated LV with an estimated LVEF of 10%-15%, with biventricular apical thrombi (Fig. 1). These also were visualized on a cardiac computed tomogram performed to evaluate the coronary circulation (Fig. 2). She was managed jointly by high-risk obstetrics and cardiology. She was treated with carvedilol, lisinopril, spironolactone, ivabradine, and bromocriptine, and anticoagulated with enoxaparin and then transitioned to oral warfarin. She was counseled extensively about the undesirable risks associated with these medications in the nursing mother, and eventually decided against breastfeeding. On follow-up in the ambulatory cardiology clinic, a repeat echocardiogram, 3 months later, revealed an improved LVEF, to 35%, and resolution of the biventricular apical thrombi.

Novel Teaching Points

- Pregnancy in patients with previously diagnosed PPCM, especially with residual LV systolic dysfunction, is associated with substantial maternal morbidity and mortality. Counseling patients about risk associated with future pregnancies should be an integral part of the management plan.
- LV thrombus formation complicates the disease in as many as half of patients with significant LV systolic dysfunction. It likely predicts incomplete response to antifailure therapy.
- Thrombus formation in both the left and right ventricles is also commonly encountered and likely correlates with the severity of biventricular dysfunction.

Anticoagulation therapy was discontinued. She was counseled about the need for an implantable defibrillator. She was averse to device implantation. However, with further improvement in LVEF to 47%, this approach was no longer indicated. The patient was counseled about the natural history of her disease and risks associated with future pregnancies. Given the significant deterioration in her cardiac status with the most recent pregnancy, she decided to undergo bilateral tubal ligation.

Ventricular thrombi are a common finding with PPCM and complicate the natural history of the disease in up to 53% of affected women, due to hypercoagulability and stasis.[1,2] This condition predicts poorer outcome and incomplete response to anti-remodeling therapy.[3]

Bilateral ventricular thrombi have been described previously and are a frequently encountered complication and a major source of morbidity and mortality in PPCM, despite all the recent advances in medical management.[4]

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See page 440 for disclosure information.

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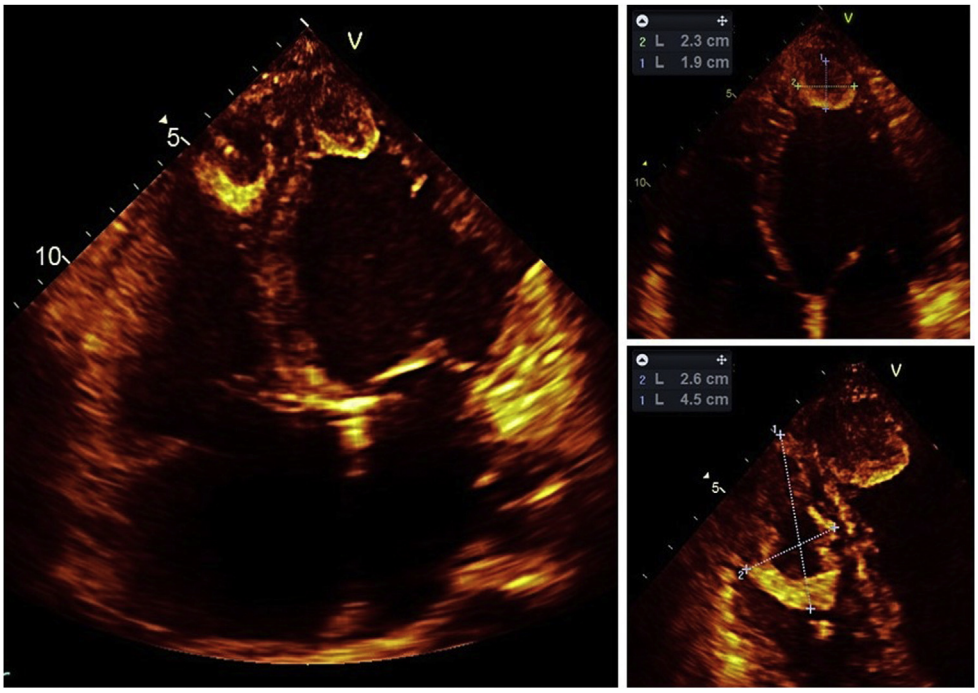

Figure 1. Transthoracic echocardiogram images. Apical 4-chamber view showing large thrombi occupying the left ventricular (**top right:** thrombus measuring 23 × 19 mm) and right ventricular (**bottom right:** thrombus measuring 26 × 45 mm) apical segments. Note that all 4 cardiac chambers are markedly dilated.

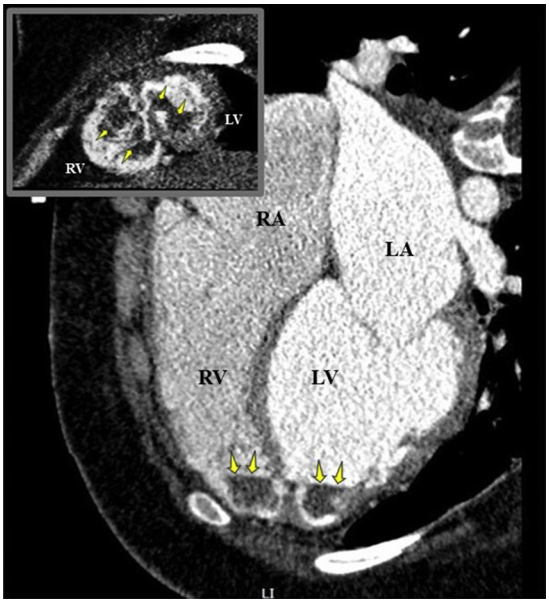

Figure 2. Cardiac computed tomography images with multiplanar reconstruction. A long-axis, 4-chamber view showing marked dilatation of all 4 cardiac chambers. The left apical (LA) and right apical (RA) ventricular thrombi are partially visualized (**arrows**). **Insert** shows cross-sectional view across the right ventricular (RV) and left ventricular (LV) apices, showing non-enhancing, filling defects, occupying most of the apical space consistent with endocardial thrombi (**arrows**).

Disclosures

The authors have no conflicts of interest to disclose.

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