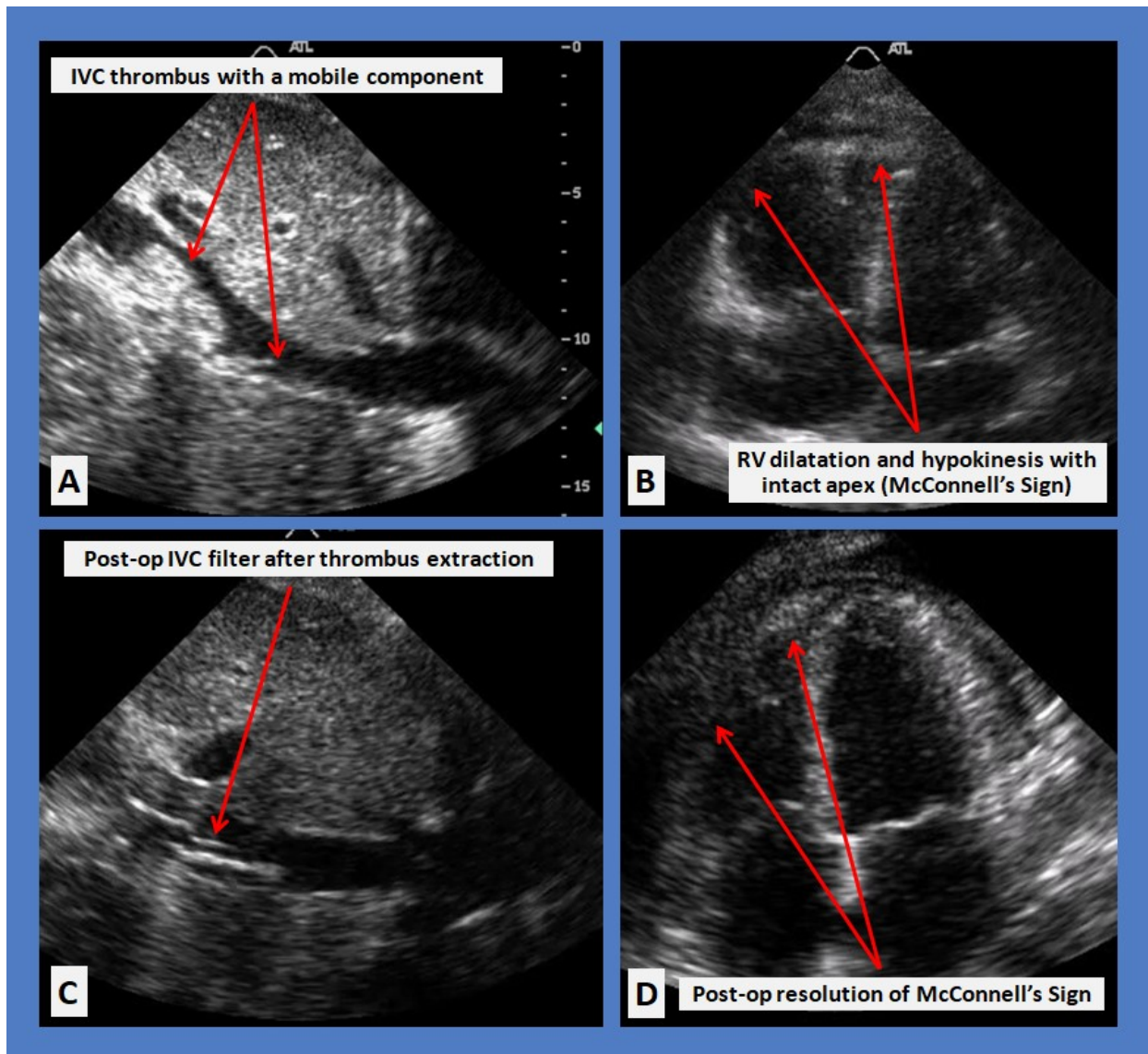


Peripartum IVC Thrombus: *A McConnell's Prelude!*

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Description

The above 2-dimensional (2-D) transthoracic echocardiographic (TTE) images were obtained in the setting of estrogen treatment for surgical menopause induced by hysterectomy. This was following emergent cesarean section for significant bleeding in the third trimester of pregnancy due to placenta accreta. Panel A, subcostal view reveals a large thrombus in the inferior vena cava (IVC). Panel B, 2-D apical 4-chamber view, reveals dilatation and

hypokinesis of the right ventricular (RV) free wall indicative of RV strain, with sparing of the apex. This is suggestive of acute cor pulmonale secondary to pulmonary embolism (McConnell's sign) caused by the IVC thrombus. Post-operative Panel C subcostal view reveals absence of IVC thrombus with placement of an IVC filter, while Panel D reveals resolution of the RV strain and McConnell's sign following surgical embolectomy.

Discussion

Estrogen use has long been associated with an increase in the risk of thrombosis [1], especially deep vein thrombosis and pulmonary embolism [2]. The route of estrogen administration seems to impact the risk of thromboembolism [3]. Women with hematologic disorders appear to have an elevated risk of treatment with hormonal therapies [4] and require special attention if such therapy is necessary.

Deep vein thrombi travel up the inferior vena cava (IVC) or, less commonly, down the superior vena cava (SVC) to reach the right heart on their way to the lungs. Intracardiac thrombi are rare findings on transthoracic echocardiograms (TTE) performed in the setting of pulmonary embolism, and are often referred to as clot-in-transit (CIT) [5] or right heart thrombus-in-transit (RHTIT) [6], often portending a poor prognosis.

For patients with CIT or RHTIT and coexisting pulmonary embolism, the mortality is high [7], and prompt diagnosis and treatment are crucial, preferably utilizing a multidisciplinary heart team approach. Therapeutic strategies include surgical embolectomy, thrombolytics, and heparin anticoagulation [8]. One earlier retrospective analysis revealed a superiority of thrombolytic therapy compared either to anticoagulation alone or surgery [9].

More recently, percutaneous aspiration of right atrial thrombi [10] and other masses [11] has been gaining momentum. Such procedures offer hope for patients who are not candidate for surgical embolectomy or thrombolytic therapy.

Conclusion

CIT and RHTIT, including visualized thrombi in the venae cavae, are rare echocardiographic findings encountered in a variety of settings. They herald a poor prognosis and mandate timely diagnosis and treatment to avoid fatal pulmonary embolism. Given the diverse patient profiles and comorbidities and the availability of a wide range of medical, interventional and surgical options, a patient-tailored approach utilizing an established multidisciplinary Heart Team is recommended [12].

Manuscript submitted May 31 and accepted June 7, 2024
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<https://cardiofellows.com/newsletter-may-2024.html>

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KEYWORDS: Inferior Vena Cava Thrombus; Pulmonary Embolism; McConnell's Sign.

Reference this article as:

Smith W, Ur Rahman M, Shah N, Malozzi C, Omar B. Peripartum IVC Thrombus: *A McConnell's Prelude!* Cardiofel Newslet 2024. May; 7(5):12 – 14.