

Clinical case blog

Title: A Patent Foramen Ovale Saves the Day in a Rare Case of Right Ventricular Outflow Tract Obstruction

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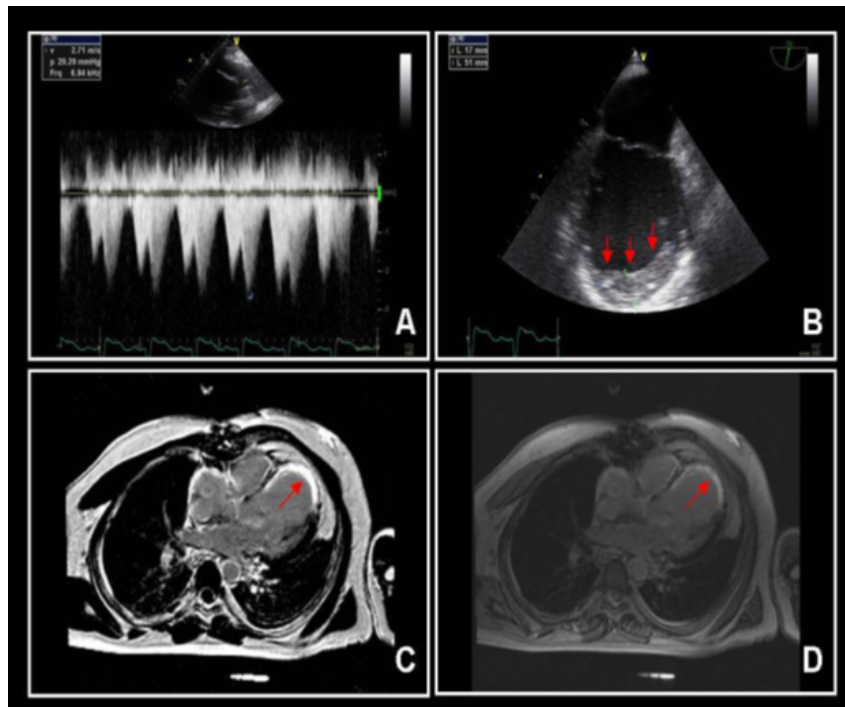


Figure 1: Three-dimensional echocardiography and cardiac-MRI demonstration.

A 46-year-old man with remote anterolateral MI (complicated by VT storm requiring ICD) presented in bi-ventricular heart failure with peripheral eosinophilia and cardiogenic shock. Mechanical ventilation worsened hypoxemia, despite FiO₂ of 1.0 and nitric oxide. TTE demonstrated LVEF of 20%, PFO (right-to-left-shunting) and sub-pulmonic RVOTO (Figure 1A, Videos 1 and 2) resulting in additional obstructive shock. The PFO functioned as a RV-vent; percutaneous closure was not performed. TEE showed echogenic material layering the RV, TV, RV lead and sub-pulmonic-valve napkin-ring-lesion causing RVOTO (Figure 1B and Video 3). Cardiac-MRI demonstrated delayed enhancement (Figure 1C and 1D). Endomyocardial and subsequent surgical biopsies were non-diagnostic. Surgical PFO closure, TV repair, debulking of RV and sub-pulmonic-lesions, and ICD removal were performed. Steroids were discontinued as peripheral eosinophilia had improved prior to initiation. The patient recovered, was discharged home and remains stable.

This case demonstrates a PFO functioning as a RV-vent. Closure of the PFO without relieving the RVOTO would have proven deleterious.

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Differential Diagnosis
Loeffler's endocarditis
Carcinoid tumor
Parasitic infection with bi-ventricular heart failure
Churg-Strauss Syndrome
End-stage endomyocardial fibrosis
Distributive shock with non-ischemic cardiomyopathy/element of ischemic cardiomyopathy with sub-pulmonic RVOTO leading to worsening right-to-left-shunt via the PFO

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Table 1: Differential diagnosis procedure.