A 61-year-old Caucasian man with recently diagnosed eosinophilic chronic myelomonocytic leukemia presented with fevers and right-sided heart failure that failed to respond to diuretics. He denied any history of travel to the tropics. Exam was remarkable for pallor, edema and S4 gallop. He had leukocytosis (54 × 10^9/L; 55% eosinophilic predominance), anemia and thrombocytopenia (3 × 10^9/L). Echocardiogram showed grade 2 diastolic dysfunction, moderate mitral regurgitation and elevated right heart pressure. There was apical left ventricular thickening concerning for tumor, laminated thrombus or focal hypertrophy (Figure 1, Movie 1). Given severe thrombocytopenia, endomyocardial biopsy and anticoagulation were contraindicated. Cardiovascular magnetic resonance (CMR, Figure 2, Movie 2, 3) showed increased focal apical wall thickness of 22 mm with hypokinesis of this segment (Figure 2A). First pass perfusion revealed hypoperfused apical and lateral endocardium with a layer of superimposed clot (Figure 2B). Late gadolinium enhancement images showed hyperintense apical fibrosis extending from the endocardium to mid myocardium, covered by a cap where laminated clot was present producing a “double V” sign (Figure 2C). This was also confirmed on the 3-chamber early gadolinium enhancement image with long TI of 600 ms that showed apical thrombus distinct from the underlying myocardium (Figure 2D).

Figure 1. Echo (apical 4 chamber) with perfluorin contrast showing a 2.4 × 3.8 cm non-perfused mass at the LV apex suggestive of thrombus or infiltrative tumor. LA: left atrium, LV: left ventricle, RV: right ventricle.
Loeffler endocarditis is a rare type of restrictive cardiomyopathy that follows a two-stage process. Early manifestations include symptoms of fevers, dyspnea and swelling. During this phase, infiltration of myocardium and release of eosinophilic major basic protein and reactive oxygen species promote endothelial and myocyte injury. The later stages are marked by myocardial fibrosis and thrombus formation causing a restrictive cardiomyopathy. Our patient was started on imatinib and steroids and his symptoms improved over 2 weeks. Unfortunately, he died from bacterial sepsis after that.

SUPPLEMENTARY MATERIALS

Movie 1
Apical 4-chamber echo showing laminated mass at left ventricular apex.

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Movie 2
Cardiovascular magnetic resonance – 2-chamber Steady State Free Precession cine imaging showing Focal thickening at the left ventricular apex (22 mm) along with hypokinesis.

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Movie 3
Cardiovascular magnetic resonance – Apical short-axis first pass perfusion imaging demonstrating hypoperfusion of the subendocardium and a layer of overlying thrombus.

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REFERENCES


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