Images in Cardiology

The evanescent right atrial mass

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An unusual cause of pulmonary emboli from an evanescent right atrial mass is described in this case report. The systematic approach from initial presentation to a definite diagnosis of a rare condition is described.

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1. Case report

A 38-year-old Caucasian male with HIV on highly active anti-retroviral therapy for 13 years and hepatitis C presented to the Emergency Department (ED) with a 1-week history of increasing dyspnea, tachycardia and palpitations without syncope or chest pain. Workup in the ED revealed an elevated D-Dimer-2.31 μg/ml (normal 0.22–0.50 mcg/ml). This prompted a CTA which showed sub-segmental pulmonary emboli. A density in the right atrium and right ventricle was also noted [Fig. 1].

A transthoracic echocardiogram revealed a large mass measuring 6.9 cm × 5.0 cm in the right atrium with a “cluster of grapes” appearance prolapsing into the RV in diastole through the tricuspid valve [Fig. 2]. A trans-esophageal echocardiogram [Fig. 3] and cardiac magnetic resonance imaging (CMR) were then performed to further characterize

Fig. 1 – Chest CT scan showing a right-atrial mass measuring 5.7 cm in diameter.
and delineate the extent of the mass. CMR confirmed a lobulated mass filling the right atrium [Fig. 4a], which was isointense on double inversion recovery images [Fig. 4b] and hyperintense on triple inversion recovery images [Fig. 4c]. After administration of gadolinium based contrast, there was heterogeneous delayed enhancement [Fig. 4d].

Due to the concern about extracardiac extension of this mass on CT and MR, and the high likelihood that this might be a malignancy, the decision was made to obtain a tissue diagnosis to save this patient an open sternotomy.

Fig. 2 – Transthoracic echocardiogram showing a large mass with a “grape cluster” appearance and filling the right atrium near completely.

Fig. 3 – Transesophageal echocardiogram showing a large mass prolapsing through the tricuspid valve and filling the right atrium near completely.

Fig. 4 – (a) Steady state free precession cardiac magnetic resonance in a 4-chamber view showing a lobulated mass filling the right atrium. (b) Double inversion recovery cardiac magnetic resonance in a 4-chamber view showing an isointense right atrial mass. (c) Triple inversion recovery cardiac magnetic resonance in a 4-chamber view showing a hyperintense right atrial mass. (d) Post contrast delayed enhancement cardiac magnetic resonance in a 4-chamber view showing heterogeneous enhancement of the right atrial mass.
The cardiac mass was biopsied via trans-jugular approach and histopathologic examination revealed CD-20 positive Burkitt’s lymphoma [Fig. 5]. Bone marrow biopsy demonstrated 80% normocellular bone marrow with progressive trilinear hematopoiesis and iron deficiency but no abnormal cells and only 5% lymphocytes.

The patient subsequently underwent chemotherapy with Rituximab, Etoposide, Prednisone, Vincristine, Cyclophosphamide, and Doxorubicin (R-EPOCH). The patient’s clinical symptoms of dyspnea, tachycardia and palpitations resolved completely at 6 weeks with disappearance of the mass [Fig. 6].

2. Discussion

There have been a few cases described in the literature in which a lymphoma with cardiac involvement is the first manifestation of HIV.1,2 HIV associated cardiac lymphomas when symptomatic typically present with heart failure in addition to the classically described-drenching night sweats and weight loss.3 With further characterization of cardiac masses, cardiac magnetic resonance imaging remains the gold standard. Although cardiac lymphoma can demonstrate a variety of imaging features on CMR, the combination of hyperintense signal on triple inversion recovery imaging and heterogeneous enhancement was important in suggesting tumor rather than thrombus. Tissue biopsy was performed to confirm a diagnosis, as management is impacted drastically. Furthermore, our patient was diagnosed with a sub-segmental pulmonary embolism.4 In addition to direct myocardial involvement, HIV-associated lymphoma can also be associated with pericardial disease. This can lead to symptoms masquerading as cardiac tamponade.5,6 This case demonstrates an unusual presentation of a rare disorder. Lymphoma associated with HIV with CD20 positivity has been shown to respond well to Rituximab in addition to Cyclophosphamide, Doxorubicin, Vincristine, and Prednisone (CHOP) therapy.7 Cardiac involvement typically portends a poorer prognosis but that is in the context of heart failure and systemic involvement, unlike this case. If hemodynamic compromise occurs, surgical excision of the mass is often the mainstay of therapy.7

Conflicts of interest

All authors have none to declare.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at http://dx.doi.org/10.1016/j.ihj.2015.05.021.

REFERENCES


