

Title

Right atrial mass-Multimodality imaging-Massive Lipomatous hypertrophy of the atrial septum

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Clinical Images

Abstract:

Asymptomatic cardiac neoplasms are often diagnosed incidentally. Right atrial mass close to septum needs careful evaluation and multimodality imaging to manage appropriately. This case highlights the utilization of multimodality imaging and heart team approach in the management of the right atrial mass.

Key clinical message:

Right atrial mass close to septum needs careful evaluation and multimodality imaging to manage appropriately.

Key words:

Cardiac neoplasms, lipomatous hypertrophy of the atrial septum, cardiac MRI, TEE, Chest CT

Case Presentation:

A 68-year-old Caucasian woman with history of rheumatoid arthritis presented with complaints of shortness of breath. She had chest computer tomography (CT) scan to rule out pulmonary embolism, which showed no pulmonary embolism but incidentally noted right atrial mass around 6.2 cm x 3.9 cm in cross sectional dimension and with a length of 7.4 cm. Underwent cardiac magnetic resonance imaging (MRI) which also showed tissue characteristics consistent with lipomatous hypertrophy of the atrial septum (LHAS). In both imaging studies noted compression of superior venacava (SVC). She also had a trans-esophageal echocardiogram (TEE) which showed the similar findings and classic dumbbell shaped mass sparing of fossa-ovalis region. With compression of the SVC we consulted cardio-thoracic surgery and interventional cardiology who recommended conservative management as she does not have SVC syndrome and her symptoms are attributable to COPD along with diastolic dysfunction. She continues to have close follow up as an outpatient. This case illustrates multimodality imaging and heart team approach treating the cardiac masses. LHAS is usually a benign condition but symptoms can occur due to compression or arrhythmias. Differential diagnosis of the right atrial mass close to the septum includes LHAS, intra-cardiac malignancies, myxoma and lipoma. TEE (2D/3D) has high sensitivity and specificity for detecting masses in the heart but further differentiation can be achieved with cardiac MRI and CT [1]. Hyper-intense signal in T1 images and attenuated images in T2 sequences confirms the diagnosis of fat rather than other etiologies. Lipoma is also similar to LHAS but it is more of encapsulated mass of mature and fetal adipocytes [2]. In symptomatic patients consider surgical/percutaneous approaches depending on the clinical situation.

References

- [1] Laura DM, Donnino R, Kim EE, Benenstein R, Freedberg RS, Saric M. Lipomatous atrial septal hypertrophy: a review of its anatomy, pathophysiology, multimodality imaging, and relevance to percutaneous interventions. *J Am Soc Echocardiogr.* 2016;8:717–723.
- [2] Bath AS, Gupta V, Kalavakunta JK. A right atrial fat ball: Rare case of cardiac lipoma. *Clin Case Rep.* 2019 Jul 25;7(9):1798-1799.

Figure Captions:

Figure 1: Chest computer tomography (CT) scan showing mass encasing the inferior aspect of the superior venacava causing narrowing (arrow head) and also showing the mass (arrow) in the right atrium.

Figure 2: Cardiac magnetic resonance imaging (MRI) showing the mass (arrow) filling the 2/3rds of the right atrium.

Figure 3: Trans-esophageal echocardiogram-2D/3D showing classic dumbbell shaped mass with sparing of fossa-ovalis (arrow head)

A-aorta, S-superior venacava, P-pulmonary artery

RA-right atrium, RV-right ventricle, LA- left atrium, LV-left ventricle

Figure 1

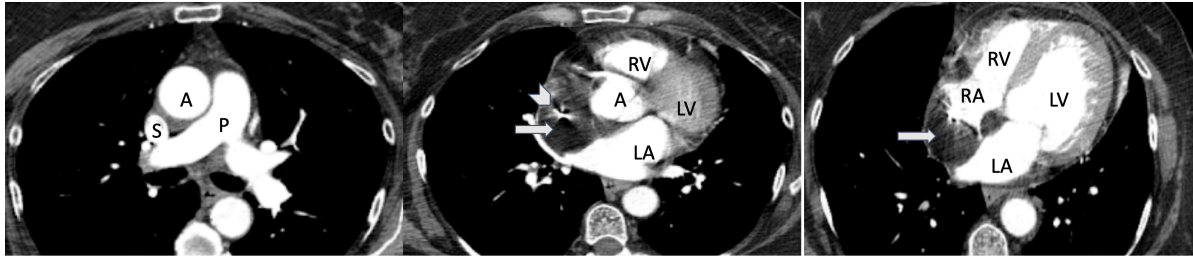


Figure 1

Figure 2

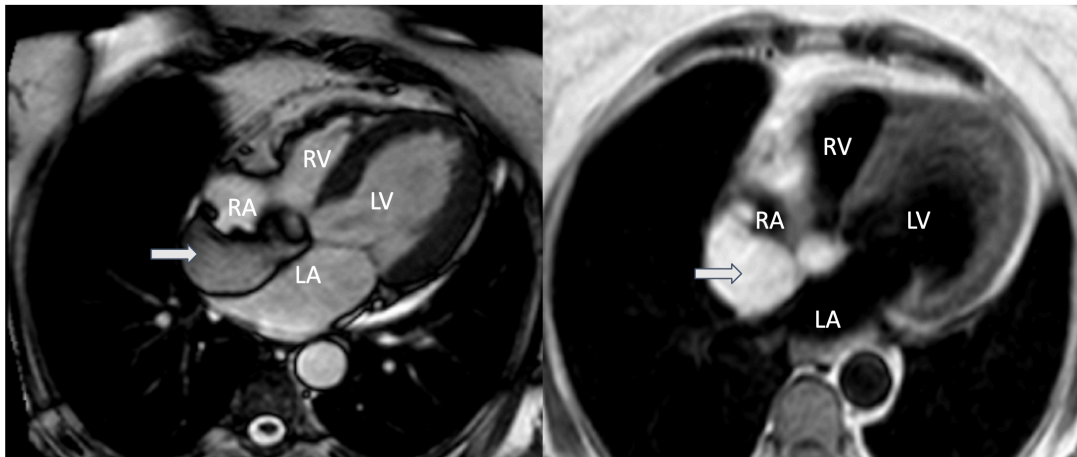


Figure 2

Figure 3

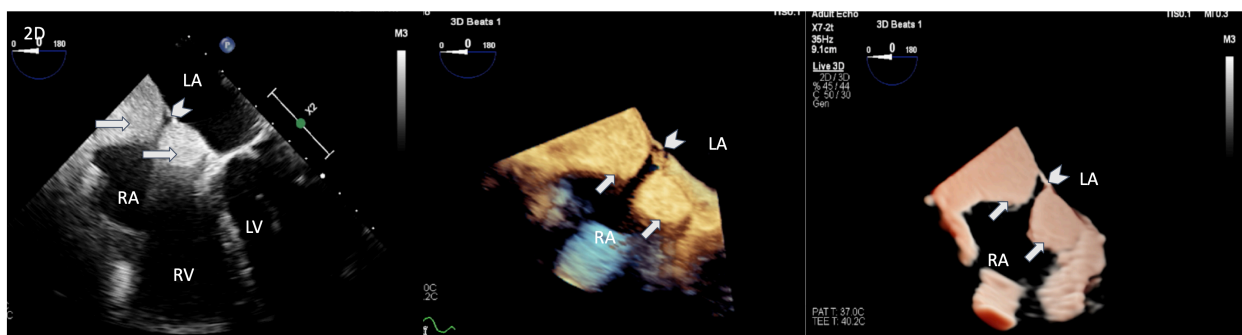


Figure 3

