

C A S E R E P O R T

A rare case of giant lipomatous hypertrophy of the atrial septum

Davide Carino, Andrea Agostinelli, Matteo Ricci, Giorgio Romano, Francesco Nicolini, Tiziano Gherli

Cardiac Surgery Unit, Parma General Hospital, Parma, Italy

Summary. Benign lipomatous lesion of the heart includes an heterogeneous group of entities including neoplastic, congenital and reparative phenomena. Among these lipomas and lipomatous hypertrophy of the atrial septum (LHIS) represent the most common lesion. Patients suffering from LHIS are often asymptomatic, however atrial fibrillation, congestive heart failure and supraventricular tachycardia are typical findings. Here we present a rare case of LHIS symptomatic for asthenia and dyspnea. (www.actabiomedica.it)

Key words: lipomatous hypertrophy of the atrial septum; atrial lipomas; cardiac tumor

A 80 years old woman with worsening asthenia and dyspnea was referred for trans thoracic echocardiographic evaluation. A echodense mass was found in the inter atrial septum protruding in the right atrium. The mass had a diameter of 29 x 23 x 47 mm and the inferior vena cava and superior vena cava opening in the right atrium didn't seem obstructed. A trans esophageal echocardiography was effectuated and confirmed the result of the trans thoracic examination. After that a TC scan (Fig. 1) and MRI (Fig. 2) were carried out to recognize the nature of the tissue inside the heart and both the examination recognized the lesion as a adipose tissue protruding inside the right atrium. Cardiac surgery was undertaken to remove the mass. After a median sternotomy and aorta - bicaval cannulation, cardiopulmonary by-pass was instituted, ascending aorta was cross-clamped and anterograde warm blood cardioplegia was infused. After inspection we noted that the roof of the left atrium and the posterior and lateral walls of the right atrium were involved and thickened. Then we performed a right atriotomy. A mass was noted bulging from the interatrial septum and the posterior and lateral wall of the right atrium

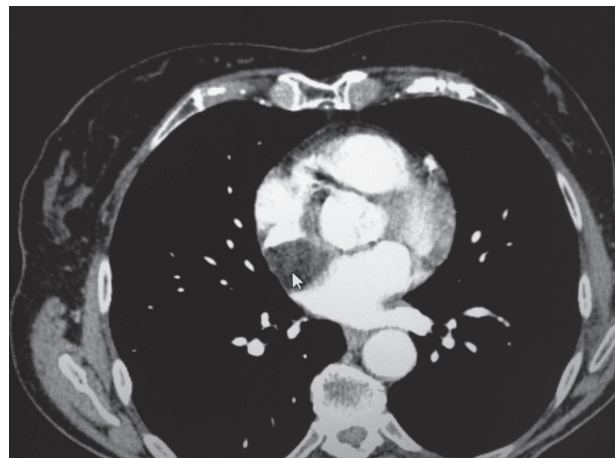


Figure 1. Arrow points interatrial septum's mass

into the right atrial cavity. The fossa ovale wasn't involved by the mass and we opened it to vent the left atrium. The endocardium over the mass was incised and we looked for a cleavage plane between the endocardium and the mass, but it was firmly adherent to the endocardium and presented more like a LHIS than a atrial lipoma. So we decided to enucleate the

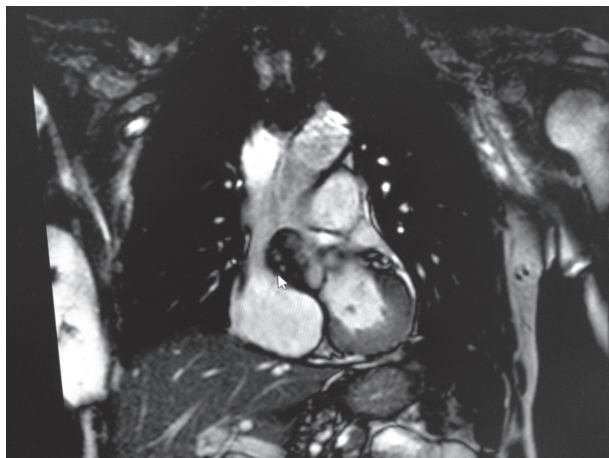


Figure 2. The mass, indicated by arrow, seems obstruct the SVC opening in the right atrium

mass. After a wedge resection of the central portion of the mass we preferred to not resect completely the lesion, because it stretched toward the floor of the left atrium and a complete resection would have required a too extended demolition of the atria. So we rebuild the integrity of the interatrial septum with a direct suture. The post operative course was eventful and the patient was discharged in 7^o post operative day. The echocardiogram before the discharge showed a residual hypertrophy of the atrial septum but with a much more reduced thickness (max 9 mm); any obstruction of the vene cave or interatrial shunt was noted

Discussion

Lipomatous hypertrophy of the interatrial septum consist of a non capsulated accumulation of mature fat, multivacuolated adipose cells, and enlarged cardiac myocytes within the interatrial septum. Although the exact ethology of LHIS remains unclear, some theories have suggested the existence of embryonal, mesenchymal cells within the primitive atria that can develop into adipocyte with an appropriate stimulus, particularly obesity and advanced age. The resultant effect is adipocyte hyperplasia and fat accumulation occurring in the epicardium (1). LHIS is a very rare finding; it is often totally asymptomatic, however in some cases it can cause atrial arrhythmias and congestive heart failure. Usually the diagnosis is done by echocardiography.

CT scan and cardiac magnetic resonance using fat-saturation techniques are very useful to differentiate LHIS an atrial lipomas from other cardiac masses. In our case the patient was symptomatic for asthenia, and just for this reason we suspected a neoplastic nature of the mass. So once recognized the mass in the heart we preferred investigate the nature of the mass with CT scan and magnetic resonance before perform surgery. LHIS should be surgically correct only if the patient is symptomatic, anyway a complete surgical resection should not be attempted if it will compromise vital structures, taking in consideration the slow rate of expansion, the rare malignant transformation and the absence of recurrence after excision (2). In literature some cases of complete resection of symptomatic LHIS stretched toward the superior vena cava and reconstruction of the atrium with pulmonary artery homograft (3), pericardial patch (4), and dacron patch (5) have been described but in any of this cases the masses stretched toward the floor of the left atrium. In our case the LHIS was developed in the context of the interatrial septum, right atrial posterior and lateral walls and in the floor of the left atrium so a complete resection would have required a too extended demolition of the atria. Because the age of the patients and the benign macroscopic appearance of the mass we preferred do a wedge resection of the mass protruding in the atria close to superior vena cava. Moreover the patient was symptomatic for dyspnea and we resected the portion of the mass that seemed obstruct the opening of the superior vena cava in the atrium for improve the venous return and, in this way, the clinical picture. At the follow up visit one month after the operation the patient was asymptomatic for dyspnea. To the best of our knowledge this is the first case of LHIS stretched forward the floor of left atrium.

References

1. Lopez-Candales A. Massive lipomatous hypertrophy of the right atria. *Heart views* 2013; 14(2): 85-7.
2. Zeebregts CJAM, Hensens AG, Timmermans J, Pruszczyński MS, Lacquet LK. Lipomatous hypertrophy of the interatrial septum: indication for surgery? *European Journal of Cardiovascular Surgery* 1997; 11: 785-7.
3. Rubino M, Hamad A-M, Rea F, Gerosa G. Reconstruction of the right atrium with pulmonary artery homograft after re-

- section of right atrial lipomatosis. *Interactive Cardiovascular and Thoracic Surgery* 2007; 6: 826-7.
4. Breuer M, Wippermann J, Franke F, Wahlers T. Lipomatous hypertrophy of the interatrial septum and upper right atrial inflow obstruction. *European Journal of Cardiovascular Surgery* 2002; 22: 1023-5.
 5. Christiansen S, Stypmann J, Baba HA, Hammel D, Scheld HH. Surgical management of extensive lipomatous hypertrophy of the right atrium. *Cardiovascular surgery* 2000; 8: 88-90.

Received: 14 February 2016

Accepted: 15 June 2016

Correspondance:

Davide Carino

Cardiac Surgery Unit, Parma general hospital

via Gramsci 14, 43126 Parma, Italy

Tel. 00039 0521/703270

Fax 0039 0521/704626

E-mail: davidecarino88@gmail.com