

A case with a giant interatrial septal lipomatous hypertrophy, and thickened epicardial and visceral fat:

Different faces of a common metabolic problem? 🎧

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Introduction

Interatrial septal lipomatous hypertrophy (ISLH) is a rare benign disorder characterized by fat deposition in the interatrial septum. It is an uncapsulated smooth mass that should be considered in the differential diagnosis of atrial masses. It is usually observed in the elderly and obese people, and it is more common in women than in men (1). Although arrhythmia and symptoms due to obstruction related to ISLH have been reported, it is usually asymptomatic and diagnosed incidentally. In many cases, diagnosis can be made by echocardiography alone if the mass has a typical appearance. Otherwise, multislice computed tomography (MSCT) or magnetic resonance imaging (MRI) may be required to determine the fat content.

Here, we report a case with a giant ISLH occupying the right atrial cavity along with a highly thickened epicardial and abdominal visceral fat tissue, suggesting that all of them may be a different presentations of a common metabolic problem.

Case Report

A 64-year-old male was sent to our Radiology Department for a MSCT pulmonary angiography (CTPA) to rule out possible pulmonary embolism. He was obese and had a history of chronic obstructive pulmonary disease and hypertension. He also had a metabolic syndrome due to hypertension, abdominal obesity, and hypertriglyceridemia. CTPA images (General Electric, brightspeed, 16 slices CT scanner) were obtained by administering a 75-mL bolus of intravenous iodine contrast at a rate of 4.5 mL/second. CTPA revealed no pulmonary embolism. However, an incidental fat-density mass (-90 HU on average) located in the interatrial septum extending to the right atrial cavity was seen (Fig. 1a, 1b). The mass was 5×4.5×4 cm in size and had a smooth contour. Characteristic dumbbell-shaped mass sparing the fossa ovalis was observed on CT and echocardiographic im-

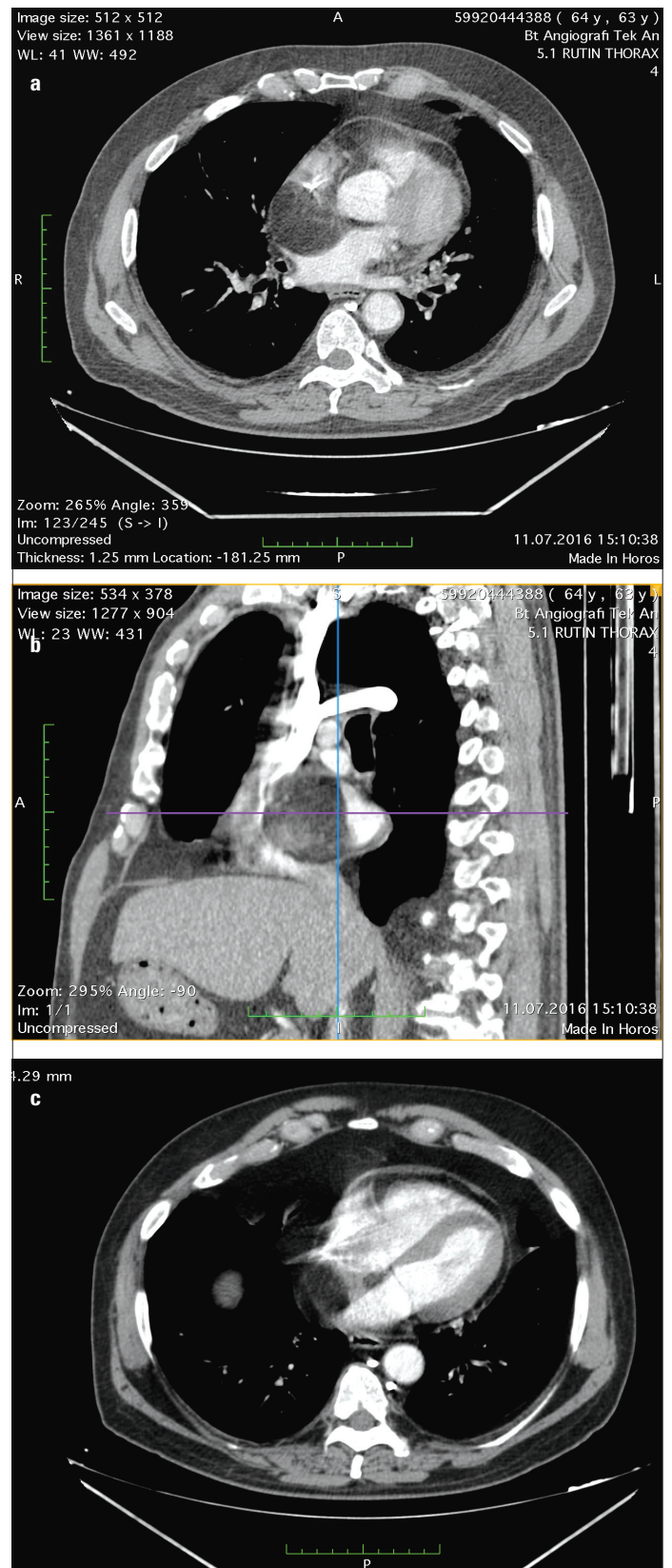


Figure 1. A giant interatrial septal lipomatous hypertrophy occupying the right atrial cavity (Fig. 1a and 1b) that has a characteristic dumbbell-shaped appearance (Fig. 1c). Increased visceral fat thickness can also be observed in Figure 1b

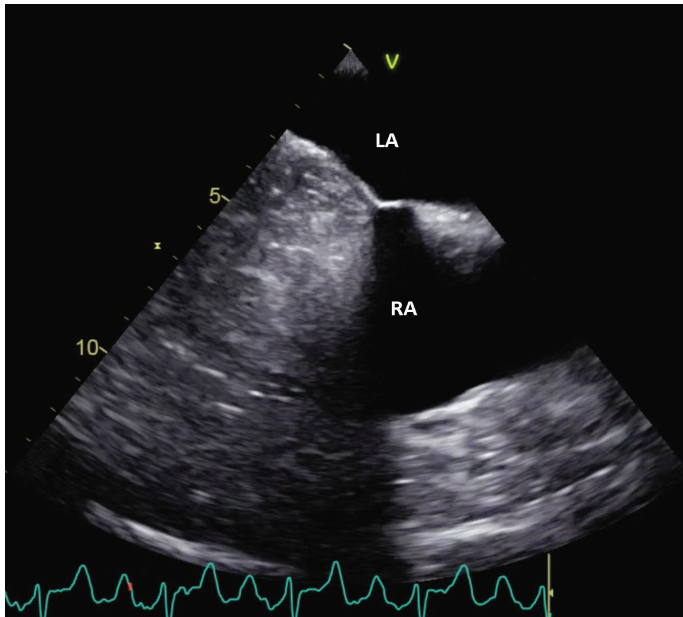


Figure 2. Transoesophageal echocardiographic image of the dumbbell-shaped mass sparing fossa ovalis

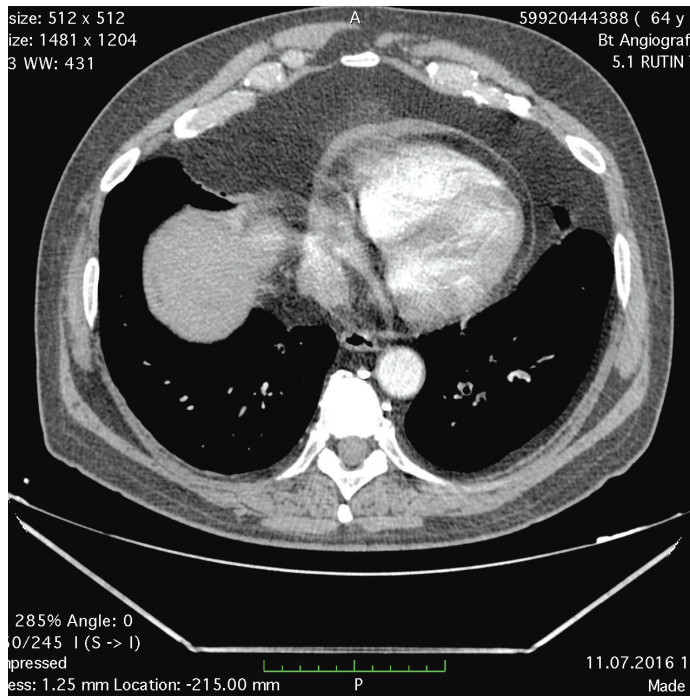


Figure 3. Increased epicardial fat thickness

ages (Fig. 1c, Fig. 2, and Video 1). Because of its typical appearance, the image was diagnosed as ISLH. It was not blocking the ostium of the superior and inferior vena cava and the right ventricular inflow. Consistent with this finding, no congestion or dilatation was observed in the superior and inferior vena cava. The epicardial and abdominal visceral fat tissues were also severely thickened (epicardial fat tissue thickness was 38 mm) (Fig. 1b and Fig. 3). In addition, chronic fibrotic and emphysema-

tous changes and cicatricial bronchiectasis was observed in both pulmonary parenchyma.

Discussion

ISLH is characterized by lipid accumulation in the interatrial septum (2). As the fossa ovalis is spared, characteristic dumbbell-shaped appearance is observed in the images (3). Although different cut-off values have been proposed, the thickness of the interatrial septum is usually required to be >2 cm in ISLH (4). It was first described at postmortem examination by Prior in 1964 (5). The incidence is estimated to be 1%-8% (3). It should be considered in the differential diagnosis of atrial masses such as myxomas or lipomas. However, typical appearance is usually diagnostic.

We present a patient with obesity, metabolic syndrome, and a huge ISLH occupying the right atrial cavity. Although ISLH can be observed in daily practice, it is not common to see such a big ISLH. Moreover, in this case, ISLH was associated with a severely thickened epicardial and abdominal visceral fat tissue, suggesting a common metabolic problem might be involved in the development of all of these pathologies.

The exact etiopathogenesis is unknown. However, it has been proposed that mesenchymal cells that are entrapped in the interatrial septum during embryological development transformed to mature adipocytes in the presence of an appropriate stimulus (6). ISLH is usually observed in obese patients and is associated with the thickened epicardial tissue (1). Therefore, an appropriate stimulus might be a metabolic problem caused by lifestyle or genetic factors. Therefore, we think that this case is interesting not only for the size of ISLH occupying the right atrial cavity but also for a hypothesis-generating observation that requires scrutinized clinical research.

Conclusion

This patient had a huge ISLH and severely thickened epicardial and visceral fat tissue, and it might be suggested that ISLH is a part of a common metabolic problem.

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Video 1. Transoesophageal echocardiographic image of the ISLH.

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