Lipomatous Hypertrophy of the Interatrial Septum

Presenting with Atrial Arrhythmias

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A 60-year-old woman with a history of chronic obstructive pulmonary disease and diabetes mellitus presented with a 5-day history of severe shortness of breath and productive cough. Her blood pressure was 86/54 mmHg; her oxygen saturation, 70%; and her heart rate, 110 beats/min. Physical examination revealed an irregularly irregular heart rate and bilateral expiratory wheezing. The patient needed urgent intubation in the intensive care unit because of acute hypoxic respiratory failure. A computed tomographic angiogram of the chest incidentally showed a 5 × 3.5-cm lipomatous mass in the upper two thirds of the interatrial septum (Fig. 1), with clear sparing of the fossa ovalis. Transthoracic and transesophageal echocardiograms (Figs. 2 and 3) and added color-flow Doppler mode (Fig. 4) confirmed lipomatous hypertrophy of the interatrial septum (LHIS)—about 5 cm at its greatest dimension—and restriction of right atrial filling with obstruction of the superior vena cava.

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Fig. 1 Computed tomogram of the chest shows the mass at its greatest dimension.

LA = left atrium; LHIS = lipomatous hypertrophy of the interatrial septum; RA = right atrium

Fig. 2 Transthoracic echocardiogram (apical 4-chamber view) shows the large mass in the posterior aspect of the interatrial septum.

LHIS = lipomatous hypertrophy of the interatrial septum

Fig. 3 Transesophageal echocardiogram (bicaval view) shows obstruction of the superior vena cava.

LHIS = lipomatous hypertrophy of the interatrial septum

Fig. 4 Transesophageal echocardiogram (bicaval view in color-flow Doppler mode) shows severe obstruction of the superior vena cava in systole and diastole.

like the encapsulated nature of its related formation, the lipoma. Because the structural features of LHIS are so distinct from those of any other intracardiac mass, it is widely accepted that the diagnosis can be made confidently by means of noninvasive imaging and without tissue biopsy.³

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Most such lesions do not require invasive intervention. However, we thought that our patient's arrhythmias, filling restriction, and hemodynamic instability were secondary to the cardiac mass, and that surgical resection was the best option.¹ Her hemodynamic status improved substantially after resection of the lesion.

Comment

Lipomatous hypertrophy of the interatrial septum is not a true tumor. It has been defined as a >2-cm-thick epicardial fatty deposition in the atrial septum.² The defining features of LHIS are as follows: the specific septal location of the atrial thickening (which tends to be greater than 2 cm and typically spares the fossa ovalis), and a classic dumbbell or hourglass shape. In our patient, the dumbbell shape was evident, but very unbalanced because of the extensive LHIS. Also typical of LHIS, the tissue is isodense to the surrounding subcutaneous fatty tissue and is nonencapsulated, un-