Massive Atrial Septal Lipomatous Hypertrophy

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Case Report

A 73-year-old man was referred for aorto-
coronary bypass surgery. Before the initiation
of cardiopulmonary bypass, routine intraoper-
ative transesophageal echocardiography (TEE)
was performed. Unexpectedly, a large, lobu-
lated, homogenous mass was noted to fill the
right atrium (RA). It had a broad base of at-
tachment to the interatrial septum but spared
the fossa ovalis (Fig. 1).

The surgical procedure then was modified. In
addition to the planned triple bypass grafting,
atriotomy of the right atrial free wall was per-
formed. On opening the RA, a large, multilobu-
lated, smooth, yellow, fatty mass filling the RA
was noted. It had no pedicle but had a broad
attachment to the interatrial septum in the
high RA. Subsequently, resection of the right
atrial mass together with excision of a small
margin of adjacent endocardium was per-
formed. This was followed by repair of the
atrial septum.

A surgical specimen (Fig. 2) revealed a large
(12.5 × 6.5 cm) multilobulated mass. Micros-
copy of the specimen revealed a mass entirely
made of mature adipose tissue without signs of
malignancy. The fatty mass extended between
myocardial fibers at the point of attachment to
the atrial septum. It was partially covered with
normal endocardium. No definitive capsule
was recognized. The finding is consistent with
massive lipomatous atrial septal hypertrophy
(LASH).

The patient was discharged home in stable
condition.

Discussion

LASH was first described in 1964 in autopsy
specimens.1 Although computerized tomogra-
phy (CT)2 and magnetic resonance imaging
(MRI)3 also can detect this abnormal thickening
of the atrial septum, echocardiography cur-
rently is the diagnostic modality of choice.4

Echocardiograph criteria for the diagnosis of
LASH include the characteristic dumbbell appear-
arance of the interatrial septum, atrial wall
thickness ≥ 15 mm, and the pathognomonic
sparing of the fossa ovalis.5

Figure 1. Transesophageal echocardiogram of the
right atrium (RA), showing a large mass attached to
the interatrial septum. The arrow points to the inter-
atrial septum. TEE = transesophageal echocardiog-
raphy; LA = left atrium; RA = right atrium.

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For an echocardiographer not to mistake a large LASH for a true cardiac tumor.

Histologically, LASH is a benign growth in which the interatrial septum is infiltrated by mature adipocytes. LASH often is associated with fat deposits in other parts of the body such as subcutaneous lipomas, excessive fat accumulation in the atrioventricular (AV) groove, and obesity. Unlike true cardiac lipomas, it lacks an organized capsule.

LASH has been associated with an increased risk of atrial arrhythmias. However, it is unclear if any causality between LASH and atrial arrhythmias exists, as the apparent relation between these two entities may in part be the consequence of both conditions being common in the elderly.

Compared with the dozens of case reports of LASH in the literature, the size of our patient’s LASH is dramatic and unusual. It is important for an echocardiographer not to mistake a large LASH for a true cardiac tumor.

References