

A heart defect found upon self-examination in an asymptomatic patient

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A 32-year-old echocardiographic technician was honing her skills by self-examination when she noted that her right ventricle was dilated. A cardiologist confirmed her finding and noted a left-to-right shunt across a 1-cm defect in the fossa ovalis region of the atrial septum.

The patient was entirely asymptomatic and regularly engaged in an aerobic exercise program. Physical examination revealed mild pectus excavatum. The right ventricle was not palpable. The *a* wave in the jugular venous pulse was larger than the *v* wave. The second heart sound was of normal intensity, was persistently split, and moved physiologically with respiration. The only definite auscultatory abnormality was a third heart sound followed by a short diastolic rumble heard at the lower left sternal border. A chest roentgenogram showed mild enlargement of the cardiac silhouette and minimal prominence of the pulmonary trunk and vasculature. A normal electrocardiogram was recorded.

The normal electrocardiogram, the inequality of the *a* and *v* waves in the jugular pulse, the respiratory movement of the second heart sound, the absence of a systolic ejection murmur, and the size of the defect measured echocardiographically all suggested that the defect was restrictive and the left-to-right shunt smaller than usual. On the other hand, the third heart sound and short diastolic rumble, the minor abnormalities on chest roentgenogram, and the dilated right ventricle on echocardiography indicated that the shunt was hemodynamically important, and operative closure was recommended. After collecting second opinions for over a year, the patient agreed, and the defect was closed by primary suture.

This is the second of our patients whose fossa ovalis-type atrial septal defect was discovered in such a serendipitous fashion. The first was a 22-year-old echocardiographic repairman seen 28 years ago. When he finished repairing the echocardiograph, he was asked to volunteer for an echocardiogram to be sure the machine was working properly, and the defect was found. He also underwent primary suture closure despite being asymptomatic.

Until the echocardiograph came into daily use in cardiologic practice, atrial septal defects were diagnosed on the basis of symptoms, sometimes subtle but unmistakable physical findings, distinctly abnormal chest roentgenograms, and abnormal electrocardiograms that typically showed incomplete right bundle-branch block, often with right axis deviation. Because symptoms developed in 70% of such patients by age 40 and in virtually all

of them by age 60 (1), and because operative closure carried a low risk and improved prognosis when performed early (2–5), closure of fossa ovalis-type atrial septal defects was uniformly recommended in the absence of severe pulmonary arterial disease.

Does this conventional wisdom apply to patients, such as ours, whose defects are smaller and probably would not have been discovered except for serendipitous echocardiography? Opinion is divided (6). The patient herself has had second thoughts postoperatively because of several bouts of postpericardiotomy syndrome, a common problem after operative closure of atrial septal defects. She has now been well for more than 3 years, and those doubts are receding.

Our own view is that a left-to-right shunt large enough to cause right ventricular enlargement should be closed, even in the absence of symptoms. As catheter-delivered devices to close holes in the atrial septum are perfected (7), perhaps even smaller defects will be closed routinely, regardless of symptoms.

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