

# Atrial Septal Defect in an Adult Patient

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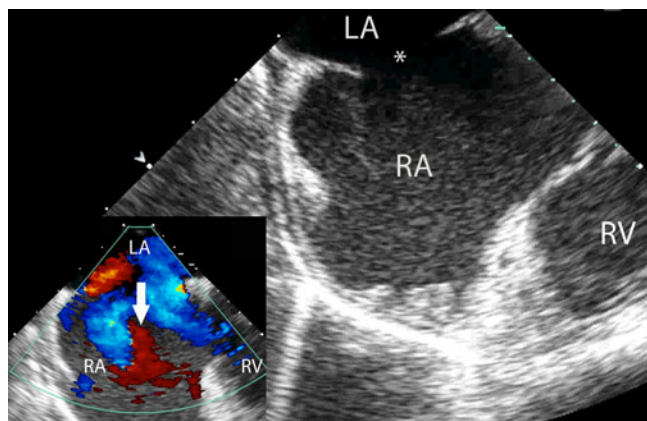
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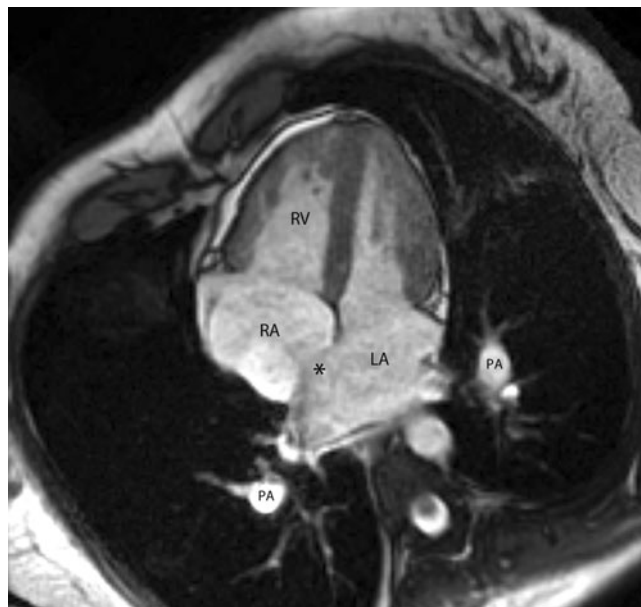
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**Figure 1.** Transesophageal echocardiogram, revealing 3 × 2 cm ASD\*, with left-to-right shunting on Doppler imaging. Note regurgitant jet directed into the right atrium and right ventricle through open tricuspid valve.

A 26-year-old woman presented with new-onset diabetic ketoacidosis. She was noted to have a persistent systolic ejection murmur at the left upper sternal border with a prominent split of the second heart sound. Chest radiograph and electrocardiogram suggested right atrial enlargement. Transthoracic echocardiogram revealed right ventricular volume overload, and agitated saline indicated an intracardiac shunt. Transesophageal echocardiogram demonstrated left-to-right shunting across a large atrial septal defect (ASD) (Fig. 1, also see [online video](#)). Cardiac magnetic resonance imaging confirmed discontinuity of the intra-atrial septum, representative of a secundum ASD (Fig. 2).

ASD is a frequent congenital abnormality, the subtlety of which often results in the delay of diagnosis into adulthood. ASDs account for approximately one third of all cases of congenital heart disease in adults. 75% of ASDs are secundum defects (located centrally, at the fossa ovalis), which are more



**Figure 2.** Cardiac MRI demonstrating ASD (asterisk), with enlarged right atrium, right ventricle, and pulmonary arteries.

common in women. Symptoms at presentation are nonspecific and most often include fatigue and exertional dyspnea.<sup>1</sup> Long-term complications of uncorrected ASDs include atrial arrhythmias, right ventricular dilatation and failure, pulmonary hypertension, and paradoxical embolism. Percutaneous device closure is standard of care for most secundum ASDs in tertiary medical centers worldwide. The age-related morbidity and mortality associated with ASDs can be mitigated with timely defect closure.<sup>2</sup>

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