**When the Atrial Septal Defect is No Longer Silent: A Case of a Large, Symptomatic Adult Congenital Heart Defect**

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**Clinical Presentation**: A 49-year-old woman with diabetes mellitus and hyperlipidemia presented with atypical chest pain, palpitations, orthopnea, and reduced exercise tolerance for a week. Physical exam was significant for a 3/6 holosystolic murmur heard loudest in tricuspid area with splitting of S1 in the pulmonic area and louder with inspiration. Her initial vitals and laboratory studies were unremarkable except for a stable normocytic anemia. Electrocardiogram (EKG) showed a normal sinus rhythm with incomplete right bundle branch block (RBBB). Computed tomographic angiogram of the chest showed signs of right-sided heart failure with a large atrial septal defect (ASD) but no aortic dissection. Further imaging studies revealed a large ASD not amenable to percutaneous closure.

**Imaging Findings:** See Figure 1 for full details.

**Role of Imaging in Patient Care**: TTE and TEE were crucial in identifying the ASD and characterizing the lesion. With minimal atrioventricular and aortic rim, percutaneous closure most likely would have failed. As a result, cardiothoracic surgery was involved early and the patient underwent secundum ASD repair with a Synovius bovine pericardium patch with complete resolution of symptoms. She was discharged on metoprolol tartrate, magnesium oxide, aspirin, atorvastatin, and iron sulfate.

**Discussion**: ASDs can result from malformation of the ostium primum, ostium secundum, sinus venosus, or the coronary sinus. Though most patients with these lesions are asymptomatic in early adulthood, pathogenesis can occur when increased pulmonary blood flow leads to remodeling of the right ventricle, pulmonary hypertension, and ultimately, shunt reversal. ASDs that lack a viable rim necessitate open closure. Thus, early detection of these lesions can preclude development of devastating cardiovascular morbidity and mortality and vastly improve quality of life.