

Incidental Complicated Atrial Septal Defect in an Elderly Patient – A mimicry of Congestive Heart Failure

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Introduction:

The sequelae of left to right shunt leading to pulmonary hypertension is a chronic, age related process. Therefore a complicated ASD can be incidentally discovered in older patients, as they can be easily mistaken for a more common cause of dyspnea, such as congestive cardiac failure or myocardial infarction.

Case Description:

We present a 64 year old female with chronic obstructive pulmonary disease, hypertension, depression and peripheral arterial disease who presented with 'a few days' of palpitations, associated with exertional dyspnea, orthopnea and paroxysmal nocturnal dyspnea. Social history is significant for a 22 pack year tobacco smoking history.

Her vitals in the emergency department were as follows: blood pressure 175/116 mmHg, pulse 122, temperature 36.5C, respiratory rate 20 with oxygen saturation 95% on room air. Cardiovascular exam revealed no jugular venous distension, regular pulse rate and normal heart sounds without murmurs or gallops. There was no lung crepitations or pedal edema.

Initial investigations revealed a troponin of 1.420 ng/mL with an electrocardiogram (EKG) showing atrial tachycardia, incomplete right bundle branch block and right ventricular hypertrophy with right axis deviation. Brain natriuretic peptide (BNP) was 947.5 pg/mL. A portable chest X-ray showed cardiomegaly with significant right atrial enlargement. The patient was initially assessed as having acute congestive heart failure, possibly as a result of non ST elevated myocardial infarction (NSTEMI) and was transferred to the ICU with plans for urgent catheterization and echocardiogram.

A transthoracic echocardiogram (TTE) revealed a large atrial septal defect (ASD) with bidirectional shunting, severe pulmonary hypertension and a severely dilated right atrium and ventricle. These were further investigated and confirmed with a transesophageal echocardiogram (TEE).

Therefore, the patient's presentation was deemed secondary to ASD complicated by severe pulmonary hypertension. She was then transferred to a tertiary institution where she was considered for ASD closure. A cardiac magnetic resonance imaging/angiogram (MRI/MRA) was performed which showed the ASD secundum - measuring 23x27 mm. The pulmonary flow/ systemic flow (Qp/Qs) was measured to be 4.0. Right

heart catheterization and closure of the ASD was performed, with improvement of chamber pressures seen post closure.

Discussion:

ASD is the second most common congenital heart defects in adults. Exertional dyspnea and fatigue are the most common initial presenting symptoms, which can suggest significant shunting. These symptoms, having an insidious onset, may not be evident until late adult life, with some patients being 60 years and over. As these symptoms overlap with a variety of more common diagnoses such as congestive heart failure and myocardial infarction, patients with a first time presentation of symptomatic ASD can therefore be a diagnostic dilemma, such as with our patient.

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