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Case Report

Atrial Septal Defect Presenting in a 70-Year-Old Woman: A Rare Case Report

Pooja Shashidharan

Assistant Professor, Department of General Medicine, Sree Rajarajeshwari Medical College and Hospital, Bengaluru, Karnataka, India

Abstract

An atrial septal defect (ASD) is a communication between the atria resulting from a deficiency of tissue in the interatrial septum. An undetected ASD with a significant shunt causes symptoms over time in late adolescence or early adulthood and majority of the patients are symptomatic by the fifth decade. There are three types of ASDs: Secundum defect, primum defect, and sinus venosus defect. Ostium secundum defect is the most common type of ASD, accounting for 50-70% of all ASDs. Here, we report a rare case of ostium secundum ASD presenting in a 70-year-old woman who was completely asymptomatic previously.

Key words: Congenital heart disease, Atrial septal defect, Ostium secundum

INTRODUCTION

Atrial septal defects (ASDs) are commonly encountered and occur in one-third of adults with congenital heart disease.[1] There are three types of ASDs: Secundum defect, primum defect, and sinus venosus defect. Ostium secundum defect is the most common type of ASD, accounting for 50-70% of all ASDs. This defect is present at the site of fossa ovalis, allowing left-to-right shunting of blood from the left atrium (LA) to the right atrium (RA). Ostium primum defects occur in about 30% of all ASDs, if those that occur as part of complete ECD are included. Isolated ostium primum ASD occurs in about 15% of all ASDs.

Sinus venosus defect occurs in about 10% of all ASDs. The defect is most commonly located at the entry of the superior vena cava (SVC) into the RA (SVC type) and rarely at the entry of the inferior vena cava (IVC) into the RA (IVC type).[2]

ASDs often go unrecognized for the first 2 decades and initial diagnosis in adulthood is common. Although patients survive into adulthood, life expectancy is not normal in unrepaired patients, with mortality increasing by 6% per year after age 40 years. Progressive symptoms of dyspnea on exertion and palpitations frequently occur in adulthood and are caused by increasing right-sided chamber enlargement, pulmonary hypertension, RV failure, tricuspid regurgitation, and atrial arrhythmias.[1] Hereby, we report an unusual case of ostium secundum ASD presenting in a woman at the advanced age of 70 years.

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CASE REPORT

A 70-year-old female presented with a history of exertional breathlessness since 5 months, swelling of both lower limbs since 3 months, cough with expectoration since 1 month. The patient had no complaints before the last 5 months. She did not have any comorbidities, nor did she have a history of the previous hospitalization. On examination, her pulse rate was 88 beats per minute, regular in rhythm. Blood pressure was 130/90 mm Hg. Pitting pedal was present and Jugular venous pressure was raised.

On cardiac examination, inspection revealed a parasternal heave and epigastric pulsation which were confirmed by palpation. Palpable P2 was also felt. On auscultation, a wide and fixed splitting of S2 was heard along with a loud P2. A grade 3 pansystolic murmur was present in the mitral and tricuspid areas.

Chest X-ray revealed cardiomegaly with a right ventricular type of apex and a prominent pulmonary artery (Figure 1).

Corresponding Author: Dr. Pooja Shashidharan, No. 459, 5th Stage, 1st Phase, BEML Layout, Rajarajeshwarinagar, Bengaluru - 560 098, Karnataka, India. Phone: +91-9986637559. E-mail: poojashashidharan@gmail.com

Electrocardiography showed right bundle branch (Figure 2). A transthoracic echocardiography was done which showed an ostium secundum ASD measuring 3.5 cm with a left to right shunt. The RA, right ventricle and left ventricle were dilated (Figure 3). Moderate tricuspid regurgitation and mild mitral regurgitation with anterior mitral leaflet doming were noted. Moderate pulmonary artery hypertension of 50 mm Hg was present. Ejection fraction was 59%.

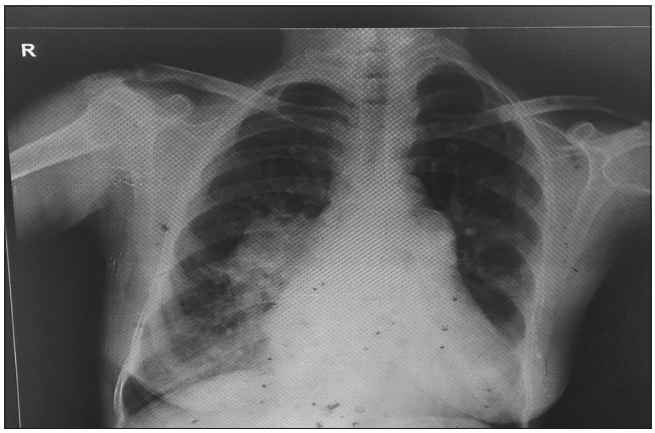

Figure 1: Chest X-ray showing cardiomegaly and prominent pulmonary artery

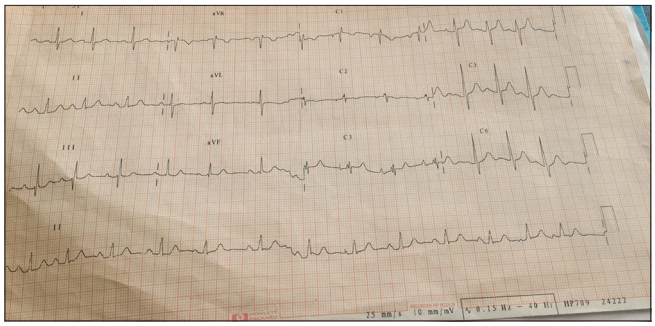

Figure 2: Electrocardiogram showing right bundle branch block

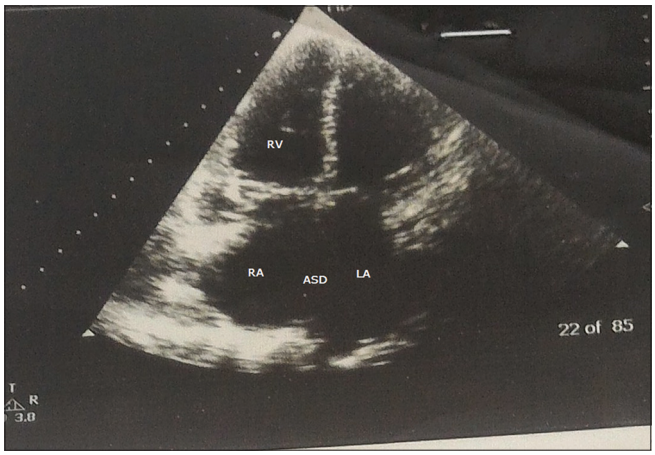

Figure 3: Transthoracic two-dimensional echocardiography showing ostium secundum atrial septal defect with dilated right atrium, dilated left atrium and dilated right ventricle

The patient was advised device closure of ASD but was unwilling to undergo the procedure. Hence, the patient was treated symptomatically with diuretics.

DISCUSSION

About 90% of patients with untreated ASD are symptomatic by the age of 40 years.[3] In a study conducted by Campbell[4] death was reported in three quarters of patients with untreated ASD by 50 years of age and in 90% by 60 years of age. The case reported by us is noteworthy because the patient survived until the age of 70 years without any symptoms.

Very few cases of ASD presenting for the first time after 65 years of age have been reported in literature. Diaconu reported a case of ostium secundum ASD presenting in a woman after the age of 70 years.[5] The case reported by Diaconu had complications such as severe pulmonary hypertension, cardiac failure, and atrial fibrillation.

ASD of the secundum type with pulmonary hypertension was reported in a 86-year-old woman by Tozzini *et al.*[6]

Studies have been conducted to evaluate the benefits of ASD closure in the elderly. Komar *et al.* concluded that transcatheter closure of ASD in the elderly (>60 years) caused significant clinical and hemodynamic improvement which was maintained during long-term follow-up, thus justifying this procedure in old age.[7] Khan *et al.* also demonstrated that ASD closure in advanced age (median age 70 years) resulted in favorable cardiac remodeling and improvement in functional age.[8]

Yalonetsky and Lorber also demonstrated an improvement in exercise capacity and right ventricular size following ASD closure in elderly (>60 years).[9] Hence, the importance of diagnosis and treatment of ASD in elderly is reflected from the above studies.

CONCLUSION

In elderly patients presenting with exertional breathlessness, ischemic heart disease is the most frequent diagnosis made. However, congenital heart disease like ASD can produce symptoms for the first time in the elderly, albeit rarely and can easily be overlooked. It is important to be aware of the possibility of ASD presenting at an advanced age as timely diagnosis and closure of ASD has been proved to be beneficial in this age group as well.

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