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Non symptomatic atrial septal defect venosus type IVC – SV coexistent with non-obstructed foramen ovale in 78 years old patient – a case report

Weronika Sandra Topyła
http://orcid.org/0000-0002-3997-9952
https://orcid.org/0000-0002-3997-9952
Medical University of Lublin
Poland

Beata Krasuska
http://orcid.org/0000-0001-8010-1642
https://orcid.org/0000-0001-8010-1642
Medical University of Lublin
Poland

Wioletta Anna Bal
http://orcid.org/0000-0003-4992-5322
https://orcid.org/0000-0003-4992-5322
Medical University of Lublin
Poland

Tomasz Krzysztof Bąk
http://orcid.org/0000-0002-6062-0848
https://orcid.org/0000-0002-6062-0848
Medical University of Lublin
Poland

Agnieszka Zofia Staciwa
http://orcid.org/0000-0003-4784-4772
https://orcid.org/0000-0003-4784-4772
Medical University of Lublin
Poland

ABSTRACT

Atrial septal defect may be seen under few forms. The most common is ASD secundarum – about 70% of defects. Coexistent non-obstructed foramen ovale with atrial septal defect venosus type IVC – SV is very rare. Untreated atrial septal defect can be associated with numerous complications and with significantly shortened life expectancy. Patients with the increased left-to-right shunting may occasionally present congestive heart failure with pulmonary hypertension in their fourth to sixth decades of life. Late problems in untreated patients also include the risk of paradoxical embolus as well as atrial fibrillation, pulmonary hypertension and right heart failure. The presented medical case is an example of a very rare clinical disease in which a complex heart defect within the atrial septum is asymptomatic, does not give any complications and does not require treatment.

INTRODUCTION

Abnormalities of the septum is one of the most common, congenital heart failure. Foramen ovale (PFO), which is a remnant of communication between atria present in fetal life, is found in 10-18% of adults using contrast echocardiography during the Valsalva maneuver. In 24.3% of patients over 45 years of age by TEE and in 25-30% of dissection [1,2]. The most serious complication of PFO is ischemic stroke. The presence of PFO is found in 44-66% of patients with cryptogenic stroke and in 9-27% of patients in whom the cause of a stroke is unknown [28]. In some epidemiological reports have described the relationship between the presence of PFO and migraine headaches. [3].

Atrial septal defect (ASD) is one of the most common congenital heart disease than those observed in adults (22% of congenital heart defects recognized in adults and 40% ascertained in patients> 40 years of age.) [4]. Ostium primum Atrial Septal Defect (ASD I) represent 15-20% of ASD; ostrium secundarum (ASD II) - 65-75%, sinus venous type ASD 5-10%, and the coronary sinus type ASD is very rare. [5].

The main hemodynamic disorder in all types of ASD is the presence of leakage of blood from the right atrium to the left. With a large volume of leak progress to volume overload right heart chambers and pulmonary flow volume increases. A large volume of pulmonary flow leads to the development of systolic pulmonary hypertension and an increase in pulmonary vascular resistance. In uncomplicated ASD clinical symptoms occur late (> 30.-40 y.o.) However, only a few percent of patients over age 40 have no symptoms. The most common complaints include fatigue, palpitations, effort dyspnea, edema, atypical chest pain, recurrent syncope, and respiratory tract infections. Moreover, supraventricular arrhythmias such as atrial fibrillation and atrial flutter are observed very often. [6]. In contrast, the development of pulmonary vascular disease and Eisenmenger syndrome in the course of the ASD occurs in approximately 10% of patients.

CASE REPORT

78- year-old patient admitted to the cardiology department because of compressive pain in the chest, radiating to the throat and the accompanying rise in blood pressure. Symptoms appear suddenly and it was the first episode of such pain in her life. In the medical history of patients revealed hypertensive disease, hypothyroidism and autoimmune hepatitis,

without previously identified anatomical changes within the heart. ECG examination shown ST-segment elevation in leads corresponding of posterior and anterior heart wall. Myoglobin and troponin values were elevated.

Acute coronary syndrome, in the form of myocardial infarction was diagnosed. Coronarography found single-vessel coronary artery disease, LAD- critical stenosis with the proximal calcification. Echocardiography was performed routine, which revealed an patent foramen ovale with left-to-right movement of the Vmax 1.6 m / s. Moreover, shown atrial septal defect type sinus venosus with the left-right shunt. The ratio of the flow to the pulmonary system Qp / Qs was 1.1. TEE and CT confirmed the presence of an additional connection between atria, located near by lower vena cava, width 5x3 mm (ASD venosus type IVC – SV), and non-obstructed foramen ovale. Furthermore, left atrial dilation was observed.

An effective treatment of mycardioal infarction was used and the observation of the above-mentioned disadvantages were commissioned. Presented medical case is an example of a very rare clinical disease in which complex heart defect within atrial septum is asymptomatic, does not give any complications, and does not require treatment.

DISCUSSION

Untreated atrial septal defect can be associated with numerous complications and with significantly shortened life expectancy. About 40% of such patients may present with cryptogenic stroke at adulthood, paradoxical embolism has also been reported. [7] Moreover, Atrial arrhythmias are relatively common among patients over 40 years old with atrial septal defect and are a precipitating cause of heart failure [8]. Large, untreated defect can lead to Eisenmenger's syndrome. The most common presenting symptoms at adult age are palpitations and exercise intolerance manifested as either exertional dyspnea or fatigue, which increase with age.

The method of choice in the diagnosis of anatomical defects of the atrial septum is echocardiography. TTE has a high sensitivity for detecting ASD II, reaching almost 100% [9]. In contrast, sinus venosus type defects, due to its location at the posterior part of the septum, is often not recognized in the TTE. Therefore TTE test can more accurately determine the presence of such a defect [10]. Myocardial contrast echocardiography plays an important diagnostic role when the two-dimensional and Doppler echocardiography are not conclusive. In addition, an important element of the assessment of hemodynamic significance of the inter-atrial leak is to determine the pressure in the pulmonary artery.

In the case of ASD with a small volume of the right-left shunt and correct size of the right ventricle in patients who do not usually have any symptoms, they do not require treatment. Patients with unrepaired ASDs without signs of RV volume overload or pulmonary hypertension should be followed annually and monitored for arrhythmias, embolic events, pulmonary hypertension, and right-sided failure. A repeat echocardiogram should be obtained every 2 years to assess RV size, function, and for increase in pulmonary artery pressure [6].

In patients with hemodynamically significant defect it is recommended to closure. The aim of this procedure is to prevent distant complications such as supraventricular arrhythmia, decreased exercise tolerance, the development of hemodynamically significant tricuspid regurgitation, reversing the direction of the leak on the left and right and embolic complications. The problem closure of ASD in older adults still stirs debate.

The results of long-term follow-up, did not confirm the presence of differences in the survival and progression of symptoms and the incidence of new cases of cardiac arrhythmias,

stroke, embolism and heart failure between groups of patients over the age of 25 treated conservatively and surgery [11]. In contrast, other studies show a significant reduction in mortality and significant clinical improvement in patients with ASD treated surgically over 40 years of age [12]. However, in accordance with current standards incidentally detected PFO on echocardiography in individuals without symptoms of TIA or stroke does not require intervention. [13]

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