

A 79-year-old patient with secundum type atrial septal defect

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Abstract

Atrial septal defect is a very rarely seen congenital cardiac defect among elderly patients. In this report, we present a 79-year-old patient who still has left-to-right shunt with operable secundum type atrial septal defect. We believe our case is one of the rare patients with this condition reported in the literature.

Key words: atrial septal defect, left-to-right shunt, adult.

Introduction

Atrial septal defect (ASD) is a congenital heart lesion that enables blood passage between the left and right atria through the interatrial septum. It occurs in 1/1500 births. Atrial septal defects constitute 6-10% of all congenital heart lesions. They can be investigated as ostium primum, ostium secundum or sinus venosus type defects. Among them, 90% of ASD are ostium secundum type [1]. They are usually diagnosed and treated in childhood but still a high number of patients may be unnoticed due to being asymptomatic.

Here, we report a 79-year-old patient with secundum type ASD.

Case report

A 79-year-old male patient, who had been examined by different centres previously, presented with palpitation and dyspnoea on exertion. He had NYHA class 2 functional capacity. Cardiac examination revealed an irregular pulse and changing degrees of systolodiastolic murmur maximally on the right side of the sternum at the second intercostal space. Atrial fibrillation was detected by 12-lead ECG. Chest radiograph showed an increased cardiothoracic index and augmented hilar densities on both lungs.

Echocardiography demonstrated moderate aortic and mitral regurgitation, severe tricuspid regurgitation, mild pulmonary regurgitation; severe pulmonary hypertension (70 mm Hg), dilated right heart chambers; paradoxical movement of the septum and a 17 mm secundum type atrial septal defect (ASD) (Figures 1-3). QP/QS calculated by transthoracic echocardiography was 3.7. Surgical closure of the defect was recommended;

however, it was refused by the patient due to old age. Moreover, the patient refused any kind of interventional therapies such as catheter-based closure of the defect for the same reason. Medical follow-up was decided for the patient and digoxin and captopril treatment was initiated.

Discussion

Atrial septal defect briefly represents a communication between the right and left atria. Pathophysiologically it may occur as a result of various causes: an enlarged foramen ovale, inadequate growth of the septum secundum, or excessive absorption of the septum primum are the major factors in the aetiology of the disorder [1].

It may present with a vast variety of symptoms. Although rarely patients may have signs and symptoms of congestive heart failure in the early periods of life and require emergent treatment, usually they are asymptomatic and diagnosed incidentally. It is the most common form of congenital heart disease in adulthood and accounts for 30-40% of all grown up congenital heart diseases [1].

Most patients with an uncorrected secundum ASD start to have symptoms beginning in early adulthood. Almost 70% of the adults develop symptoms by the age of 40 years. Symptoms are usually based on the increased pulmonary blood flow. Most commonly they are decreased exercise tolerance, easy fatigability, palpitations, and syncope. In untreated patients complications of an uncorrected secundum ASD include pulmonary hypertension, right-sided heart failure, atrial fibrillation, stroke, and finally Eisenmenger syndrome. Pulmonary hypertension, being the most devastating complication of ASD, is rare before the second decade of life and can be seen in 50% of patients above 40 years of age. Eisenmenger syndrome usually is the inevitable outcome in untreated cases [1-5]. On the other hand, although survival with ASD until late age is unusual, besides Eisenmenger syndrome, it is not frequent to see old patients with ASD [6, 7].

Today, detailed maternal screening programmes as well as the advances in intrauterine diagnostic methods enable the diagnosis of most patients with ASD in utero or with detailed physical examination and with the aid of advanced diagnostic equipment, in early childhood. This promotes the treatment of patients in optimal conditions before further complications ensue.

Spontaneous closure of the ASD may occur with certain rates between 3-67% reported in the literature. Size of the defect and age of the patients are strongly related with the closure. Smaller defect size, as much as 4-5 mm, and younger age especially under 2 years are promoting factors for spontaneous healing. On the other hand, another

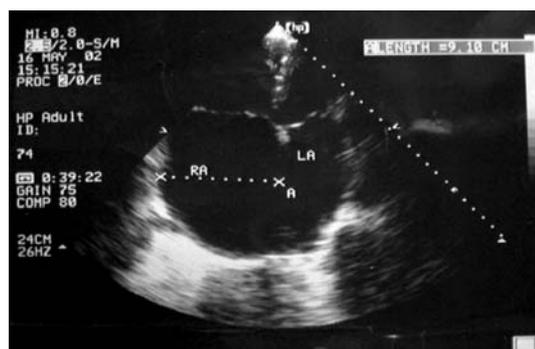


Figure 1. Echocardiography revealed dilated right heart chambers and secundum type ASD of 17 mm



Figure 2. Echocardiography revealed paradoxical movement of the septum, dilated heart chambers and a 17 mm in diameter secundum type ASD

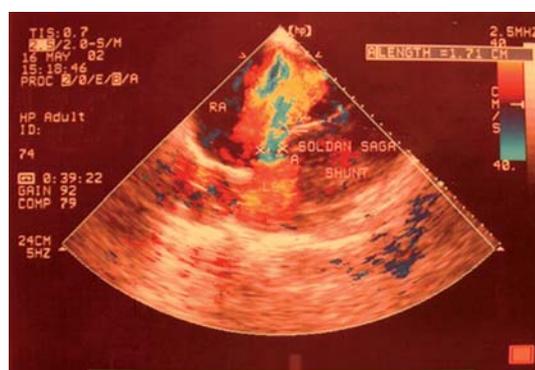


Figure 3. Echocardiography revealed left-to-right shunting through the secundum type ASD

phenomenon is that larger defects sometimes may increase in size in time and require treatment [8].

Today the golden standard closure method of ASD is surgical treatment [5]. It can be fashioned with considerable invasive investigations through different approaches such as standard sternotomy, mini-thoracotomy, robotic surgery, etc.

Long standing ASDs are generally associated with right heart dilatation as well as tricuspid valve regurgitation to various degrees. Although in debate, especially repair of moderate to severe

degree tricuspid regurgitation is advocated. Since the regurgitation is a functional consequence, repair of ASD itself in the long run aids in right ventricular functions, hence the tricuspid regurgitation. Especially in adult patients, concomitant repair of tricuspid regurgitation is helpful for the myocardial functions and patients' early postoperative functional status [6, 8].

Another issue about ASD closure is catheter-based treatment options. They have been very popular in recent years and have been applied worldwide for the treatment of ASDs [9]. They are applied with high success rates in suitable cases comparable with surgical results and shorter duration of hospital stay. They can be applied no matter the age. Also in the literature there are reports about the rescue usage of catheter-based ASD closure [10].

In the presence of ASD attention is frequently focused on the pulmonary artery pressure and pulmonary vascular resistance. The protective decompressive function of an interatrial communication on the left ventricular myocardium is reluctantly ignored [11]. Closure of large defects in the elderly requires careful evaluation for complicating factors such as left ventricular diastolic dysfunction resulting in increased left atrial pressure following closure of decompressive interatrial communication [12]. Thus, not in the early childhood period but especially in old age ASD closure with percutaneous methods requires vital prerequisites.

In conclusion, ASD is a very rarely seen congenital cardiac defect in very old age [2]. Patients usually present with Eisenmenger's syndrome and are accepted as inoperable [3]. Our case is one of the rare patients reported in the literature who still has left-to-right shunt with operable secundum type ASD.

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