Infective Endocarditis with Isolated Double Chambers of the Right Ventricle during Adulthood

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ABSTRACT

Isolated double chambers of the right ventricle (DCRV) are a rare variant of congenital heart disease. We report here on a case of right-sided infective endocarditis with isolated DCRV that presented in adulthood. (Korean Circulation J 2007;37:180-182)

KEY WORDS: Endocarditis; Congenital heart defect.

Introduction

Congenital heart disease (CHD) is a major factor that predisposes people to infective endocarditis (IE). IE has a high mortality rate, up to 10%, and the incidence of IE associated with CHD in adulthood has been reported to be recently increasing due to the long-term survival of CHD patients. Therefore, more attention is gradually being paid to IE. Right-sided IE occurs in about 5-10% of the total IE cases, and the presence of uncorrected CHD is considered as the most important predisposing risk factor for patients with right-sided IE in Korea. We report here on a case of pulmonary valve endocarditis with isolated double chambers of the right ventricle (DCRV).

Case

A 56-years-old woman, who was diagnosed with isolated double-chambers of the right ventricle (DCRV) (Fig. 1) 12 months ago, was admitted for her recurrent high fever. She had been treated with only intermittent empirical antibiotics at a local clinic for a high fever; this fever had developed 2 months after the diagnosis of DCRV. At the time of the diagnosis of DCRV, this patient had refused surgical treatment. Prior to the onset of fever, there was no history of dental procedure, tattoo, acupuncture, ear piercing or intravenous drug abuse; there was a history of right cardiac catheterization for making the diagnosis of DCRV.

On physical examination, a systolic ejection murmur was noted at the left parasternal border. In addition to the mild cardiomegaly shown on chest radiography, an electrocardiogram showed right ventricular hypertrophy with right axis deviation, and this was suggestive of right ventricular overload. However, there were no objective signs suggesting infective endocarditis.

The two-dimensional (2D) transthoracic echocardiography on a right ventricular outflow view showed the large oscillating vegetation attached to the pulmonary valve with a turbulent Doppler color flow jet across a stenotic mid-right ventricle to the dilated pulmonary artery (Fig. 2), and the pressure gradient between the pulmonary artery and the right ventricle was 30 mmHg. Enterococcus faecalis was positive from blood cultures that were drawn more than 12 hour apart. The diagnosis of IE was made based on Duke’s Criteria. After treatment with combination antibiotics for 8 weeks, the vegetation was resolved.

Discussion

It is reported that about 10-20% of IE is associated with preexisting CHD. Although, most of the CHD patients have a high risk of IE, ventricular septal defect, patent ductus arteriosus, aortic valve abnormalities and tetralogy of Fallot are considered the common preoperative factors for IE. However, to the best of our knowledge, IE in a DCRV patient has never been
reported on. This is the first case report to demonstrate pulmonic valve IE with isolated DCRV.

DCRV is a congenital cardiac anomaly in which the right ventricle is divided into two chambers, a proximal high-pressure (anatomically lower) chamber and a distal low-pressure (anatomically higher) chamber, by anomalous muscles or fibrous tissues in the right ventricular cavity.67-8 The isolated DCRV is an exceptionally rare condition. It is most commonly associated with a membranous type ventricular septal defect (VSD),8 and most cases of DCRV are diagnosed and treated during childhood. By contrast, an initial presentation during adulthood has rarely been reported on.79

Many cases of right-sided IE are related to intravenous drug addiction in the western countries. In Korea, the most important risk factor for right-sided IE is known
to be uncorrected CHD. In our present case, DCRV might be the risk factor for right sided IE on the pulmonic valve.

IE is considered to be one of the important complications in the adult population suffering with congenital heart disease. Chronic hypoxia, previous cardiovascular operation, repair with foreign material, cardiac interventional procedures and dental procedures have been suggested to be predisposing factors for IE in these patients. However, the predisposing factors for IE are difficult to identify in the large majority of patients with known CHD. Moreover, most of these CHD patients have not undergone regular medical check-ups. The previous cardiac catheterization might be the predisposing risk factor for our IE patient, who had known CHD. This present case exemplifies the importance of physicians being aware of this disease and the appropriate treatment for those patients with underlying CHD to prevent complications.

REFERENCES