

# Large Mural Vegetation Attached to the Left Ventricular Outflow Tract: A Case Report

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## ABSTRACT

We describe an unusual case of staphylococcal endocarditis with vegetation attached to the left ventricular outflow endocardium in a patient with chronic severe aortic regurgitation that was diagnosed by transthoracic echocardiography. There was no involvement of aortic valve endocardium confirmed by transthoracic echocardiography, transesophageal echocardiography, and macroscopically in the operation. This report confirms that chronic endocardial trauma may provide a fertile nidus for the development of bacterial vegetation.

## INTRODUCTION

Primary mural endocarditis is the infection of the endocardium of the cardiac chambers other than on the endocardial surface of valves. We describe an unusual case of staphylococcal endocarditis with vegetation attached to the left ventricular outflow endocardium in a patient with chronic severe aortic regurgitation.

## CASE REPORT

A 40-year-old woman with chronic rheumatic aortic regurgitation presented with complaints of high fever, sweating, and fatigue. Her temperature was 40°C, heart rate was 118 beats/min regularly, and blood pressure was 135/45 mmHg. On auscultation, a 4/6 diastolic murmur was heard in the aortic and mesocardiac area. Transthoracic echocardiography (TTE) revealed a mobile echo dense structure (20 × 17 mm) on the septal surface of the left ventricular outflow tract, just 2 centimeters below the aortic annulus. The aortic leaflets were free of vegetation. The patient was admitted, and routine biochemical and hematological analyses and 4 separate blood samples for blood culture at intervals of 30 minutes were taken. Antibiotic therapy was started immediately after blood sampling. Transesophageal echocardiography (TEE) revealed the same findings as TTE; a mobile echo dense structure (20 × 17 mm)

Received August 29, 2006; received in revised form September 22, 2006; accepted September 6, 2006.

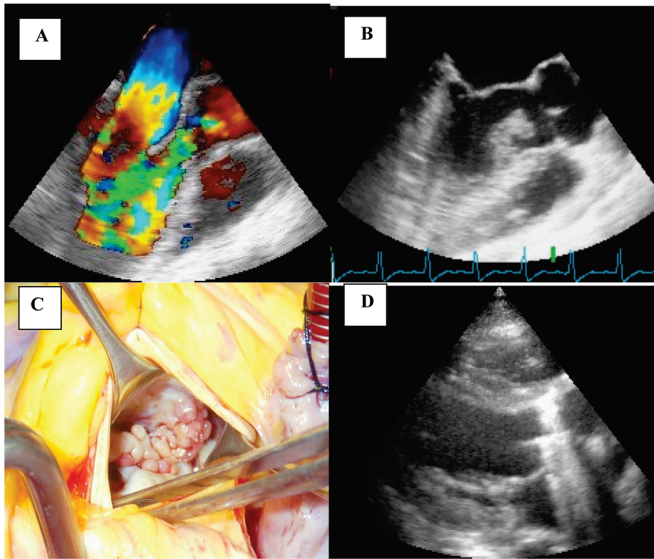
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on the septal surface of the left ventricular outflow tract; no vegetation on the aortic leaflets or periannular abscess of the aortic area was observed (Figure, A and B). *Staphylococcus aureus* had grown on the blood cultures. On the 48th hour of treatment, peripheral embolization to the left lower extremity was detected. TTE was immediately performed and a 50% decrease in the size of the vegetation was observed. Because of the large diameter of the vegetation and the high risk of recurrent embolization due to the mobile nature, emergent surgery was performed. Aortic valve leaflets were free of vegetation intraoperatively (Figure, C) and the large vegetation on the interventricular septum (Figure, C) was excised. Because of severe aortic regurgitation, the native valve was replaced with a 27 SJ mechanical prosthetic valve (St. Jude Medical, St. Paul, MN, USA). Postoperative TTE revealed normal mechanical valve function, and the left ventricle outflow tract was clear (Figure, D). At follow-up, there was no growth on the blood cultures. The patient was clinically stable, and biochemical parameters were normal. Having completed the full course of antibiotic treatment, the patient was discharged with no postoperative complications.

## DISCUSSION

Infective endocarditis is most commonly seen on heart valves, but vegetations may also develop on other intracardiac localizations [Buchbinder 1972; Vilacosta 1990]. Primary mural endocarditis is the infection of the endocardium of the cardiac chambers other than the endocardial surface of valves.

The 2 most important factors in development of infective endocarditis are damaged endothelial surface and/or dysfunctional endothelium and associating bacteremia. It has been proved that normal valvular endothelium is resistant to even experimentally produced high levels of bacteremia. In our case, although there was no involvement of aortic valve endocardium confirmed by TTE, TEE, and macroscopically in the operation, a vegetation was detected at the site where aortic regurgitation jets hit the septal left ventricular outflow tract. The first mural endocarditis case involved an intravenous drug abuser reported by Mullen and colleagues [Mullen 1986]. Later, Herzog and colleagues [1988] detected mural endocarditis in the left ventricle by TTE in an immunosuppressant case, and Leung and colleagues [1989] detected mural endocarditis in a patient with leukemia. There are primary mural endocarditis cases that were diagnosed by



A, Severe aortic regurgitation on transesophageal echocardiography. B, Vegetation on the interventricular septum on transesophageal echocardiography long-axis view. C, Intraoperative view of vegetation just beneath the aortic valve. D, Postoperative transthoracic echocardiography view of the aortic mechanical valve.

TEE [Shirani 1995]. With a detailed investigation of the literature, we found a case reporting a vegetation involving

the interventricular septum together with mitral and aortic valves in a patient with subvalvular aortic stenosis [LeJemtel 1979]. In our case, we thought that chronic traumatization of the septal surface caused by the aortic regurgitation jet might have harmed endocardial integrity and/or function and might have been responsible for the formation of a fertile nidus and the development of infective endocarditis.

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