

An Atypical Temporal Sequence for Right Heart Endocarditis: Case Report

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ABSTRACT

In 2010, an 82-year-old patient received a diagnosis of stage IV chronic obstructive pulmonary disease, ischemic dilated cardiomyopathy, severe secondary pulmonary hypertension, atrial fibrillation with slow ventricular response, and severe tricuspid regurgitation. In December 2011, he was hospitalized for exacerbation of chronic obstructive pulmonary disease. The patient received antibiotics via injections (for 2 weeks through a peripheral venous catheter). In February 2012, he returned to the hospital with congestive heart failure and vascular purpura skin lesions. The echocardiography examination revealed a rupture of cordage afferent to the septal tricuspid valve. Because blood cultures were sterile after 10 days and no vegetation was revealed, the Duke criteria were not fulfilled. In March 2012, the patient returned with congestive heart failure, fatigue, and anorexia. Echocardiography evaluation then revealed attached septal tricuspid valve vegetation. The Duke criteria were now satisfied. The patient received antibiotics at doses recommended for infective endocarditis, with a favorable outcome.

INTRODUCTION

Infective endocarditis was first described in 1885 by William Osler. Since then, the techniques for a positive diagnosis have evolved continually. Today, the international recommendations are clearly specified [Baddour 2005].

Endocarditis is less frequent in the right heart than the left heart. Right heart endocarditis occurs in patients with congenital heart defects [Di Filippo 2006; Baumgartner 2011], in intravenous drug abusers [Miro 2002; Carozza 2006], after right heart catheterization [Mason 1976; Rowley 1984], and in patients undergoing implantation of a permanent pacemaker [Hong-Barco 1988]. Usually, blood cultures are positive for

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Staphylococcus aureus [Cosson 2003], but *Candida* [Barattella 1999] or *Moraxella* [Perez 1986] are sometimes detected in blood samples. In more than 70% of cases, this disease is associated with acquired immunodeficiency syndrome. Drug abusers become infected when several persons use the same syringe [Frontera 2000]. Sometimes the disease occurs morphologically as an apical right intraventricular mass [Ak 2009] or as a mass attached to the muscular bundle of the right ventricle [Cosson 2003].

CASE REPORT

An 82-year-old patient (an ex-smoker: 20 cigarettes per day for 50 years) came to a first cardiologic evaluation in 2010 because of breathlessness after minor effort and palpitations. They had been occurring for 4 weeks and were aggravated by physical effort. Worth mentioning is that the patient had experienced chest pain typical for angina pectoris for more than 20 years, but he had never been to a cardiologic consultation. Corroboration of the clinical and paraclinical data established the following diagnosis: stage IV chronic obstructive pulmonary disease, chronic respiratory failure, ischemic dilated cardiomyopathy, permanent atrial fibrillation with a slow ventricular rate, severe functional mitral and tricuspid valve regurgitation, severe secondary pulmonary hypertension, congestive heart failure (New York Heart Association class IV), and stage 2 chronic kidney disease.

The patient received the following treatment: inhaled anticholinergics (18 µg/day tiotropium), long-term β-adrenergic agonist, and inhaled corticosteroids (50/500 µg salmeterol/fluticasone twice per day); 350 mg/day retard theophylline; loop diuretics plus potassium-sparing diuretics (20 mg/day furosemide and 50 mg/day spironolactone); sartans (40 mg/day telmisartan); antiplatelet agents (75 mg/day acetylsalicylic acid); oxygen therapy at home (4-6 L/minute, 6-8 hours/day). He slowly progressed during 10 days of treatment, with improvement of the edema and the breathlessness.

In December 2011, the patient returned to the hospital in critical condition after 2 weeks of deterioration at home, with cough, purulent expectoration, breathlessness at rest, and edema. The echocardiography examination revealed the same aspects as in 2010. During this hospitalization, the patient received conventional treatment for cardiac and respiratory

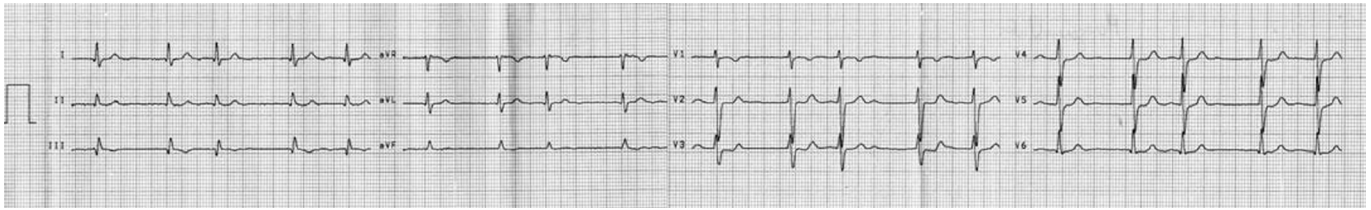


Figure 1. Electrocardiogram of atrial fibrillation with slow ventricular rate, biventricular hypertrophy.

disease, plus β -lactamines (1.5 g amoxicillin administered every 8 hours for 2 weeks via a peripheral vein catheter). He showed clinical improvement and was discharged. In February 2012, however, the patient returned in critical condition, with congestive heart failure and skin vascular purpura. An echocardiography examination revealed rupture of the septal tricuspid cordage, which suggested infective endocarditis.

Because blood cultures were sterile (he had previously been receiving antibiotics) and no vegetation was revealed, his condition did not satisfy one of the major Duke criteria. The patient's condition satisfied only 2 minor criteria (for right heart endocarditis: preexistent tricuspid regurgitation and repeated intravenous injections). In March 2012, the patient returned, again in critical condition, this time with fatigue, anorexia, and congestive heart failure. The electrocardiogram had the same aspect as in 2010 (Figure 1). The echocardiogram revealed vegetation (24 × 9.5 mm) attached to the septal tricuspid valve (Figure 2). This finding represented one of the major Duke criteria for right heart endocarditis: oscillating intracardiac mass on the tricuspid valve. He already had the 2 aforementioned minor criteria, so the diagnosis of endocarditis was certain. The patient received 4 weeks of treatment, which consisted of 3 g sulbactam/ampicillin intravenously every 6 hours and 400 mg ciprofloxacin by intravenous perfusion every 12 hours. This treatment produced a favorable clinical evolution. Over time, the morphologic aspect of the vegetation improved, with diminishing echogenicity and dimensions.

The patient cannot be treated surgically, because of his multiple diseases and his advanced age.

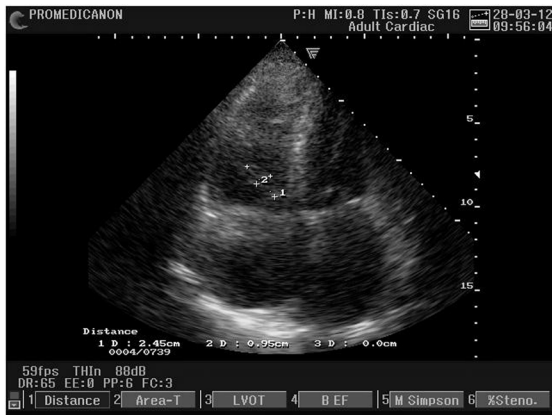


Figure 2. Transthoracic echocardiography image (apical view of 4 chambers) of vegetation attached to the septal tricuspid valve.

DISCUSSION

Right heart infective endocarditis is a rare disease, but it has the potential for severe complications [Mesbahi 1991]. Usually, this severe disease affects patients in the categories mentioned in the Introduction. The presented patient was a special category (repeated intravenous antibiotics through a peripheral vein catheter for medical purposes). Another particular feature of this case was the atypical temporal sequence of the morphologic findings (initially, rupture of the cordage afferent to the infected septal tricuspid valve was revealed; later, echocardiography revealed the vegetation). The presented case illustrates the importance of the corroboration of clinical and imaging data for a correct diagnosis. Discrete signs (rupture of the cordage, vascular purpura skin lesions) were important for the clinical judgment, but they were not sufficient for a positive diagnosis (ie, fulfilling the Duke criteria).

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