Papillary Muscle Rupture Complicating a Papillary Muscle Abscess

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ABSTRACT

Spontaneous rupture of a papillary muscle from a papillary abscess is extremely rare. Most cases of papillary muscle ruptures are due to myocardial infarction or trauma. We describe the clinical course of a 68-year-old man who died from a papillary muscle rupture as a complication of a papillary muscle abscess due to Streptococcal pyogenes septicemia. (Korean Circulation J 2006;36:242-244)

KEY WORDS: Mitral valve insufficiency; Papillary muscles; Streptococcus pyogenes.

Introduction

Myocardial abscesses have been reported in 0.2% to 1.5% of autopsies. Most cases have occurred as a complication of generalized sepsis or endocarditis. In rare cases, rupture of a papillary muscle may develop as a complication of a myocardial abscess.10 This complication has been diagnosed by transthoracic and transesophageal echocardiography.21 We report a case of a patient in whom a papillary muscle rupture was caused by a papillary muscle abscess.

Case

A 68-year-old man was referred to our hospital because of an unrelenting fever and vomiting. One week prior to his admission, he was hospitalized at another hospital because of fever, nausea, and malaise. Thereafter, his general condition acutely declined. He had been diagnosed as having non-insulin-dependent diabetes mellitus and angina 10 years before this time. On admission, his blood pressure was 100/60 mmHg, his body temperature was 38.9°C, and his pulse rate was 110 beats/min. A physical examination revealed a 2/6 systolic murmur at the apex.

The results of the complete blood count revealed normocytic, normochromic anemia and leukocytosis (17,000/μL). An elevated erythrocyte sedimentation rate (36 mm/hr) and C-reactive protein level (195.5 mg/L) were demonstrated. He had azotemia with a serum creatinine level of 2.4 mg/dL and a blood urea nitrogen level of 52 mg/dL. The patient’s creatinine kinase (CK) level was 49 U/L and his troponin T level was 0.053 ng/mL. Both values were normal (CK: 32-187 U/L, troponin T: 0-0.1 ng/mL). Chest radiography revealed mild cardiomegaly and sinus tachycardia was detected by electrocardiogram. Blood cultures were positive for Streptococcus pyogenes. The patient was treated with antibiotics (ampicillin and sulbactam) for 3 days. However, the patient’s status did not stabilize. Therefore, transthoracic echocardiography was performed. A transthoracic echocardiogram identified severe mitral regurgitation and a fluttering round hyperechoic mass on the anterior mitral leaflet (Fig. 1A, B). The patient underwent an emergency mitral valve replacement through a median sternotomy under extracorporeal circulation. Intraoperatively, a rupture of the anterolateral papillary muscle caused by a papillary muscle abscess was demonstrated (Fig. 2). A microscopic section of the ruptured papillary muscle revealed the formation of a focal abscess with neutrophil infiltration (Fig. 3). The patient expired due to multiple organ failure 13 days after the cardiac operation.

Discussion

The most common cause of papillary muscle ruptures...
is an occlusion of a coronary artery with a myocardial infarction affecting the base of the papillary muscle. An ischemic rupture of the papillary muscle could be ruled out in our patient, who was suffering from ste-