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Case Report

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An unusual clinical presentation of isolated tricuspid valve endocarditis: Acute leukosis

Murat Akcay[a*], Okan Gulel[a], Serkan Burc Deser[b], Omer Gedikli[a]

[a] *Department of Cardiology, Faculty of Medicine, Ondokuz Mayis University, Samsun, Turkey*
[b] *Department of Cardiovascular Surgery, Faculty of Medicine, Ondokuz Mayis University, Samsun, Turkey*

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*** Correspondence to:**
Murat Akcay
Department of Cardiology,
Faculty of Medicine,
Ondokuz Mayis University,
Samsun, Turkey
e-mail: drmuratakcay@hotmail.com

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ABSTRACT

Right-sided infective endocarditis (IE) is observed especially in patients using intravenous medications or illicit drugs, and who have right-sided pacemaker, central venous catheter, or congenital heart disease. We present a case of successful medical and surgical treatment for isolated tricuspid valve infective endocarditis with abnormal hematological and pulmonary findings in a young woman without predisposing risk factors.

1. Introduction

Right-sided infective endocarditis (IE) is observed especially in patients using intravenous medications or illicit drugs, and who have right-sided pacemaker, central venous catheter, or congenital heart disease (Weymann et al., 2012). Isolated tricuspid valve IE is the least common one with the incidence of 5 to 10% in the literature and is considerably rare in the absence of predisposing risk factors (Weymann et al., 2012, Chahoud et al., 2016). In this report, we present a case of successful medical and surgical treatment for isolated tricuspid valve IE with abnormal hematological and pulmonary findings in a young woman without predisposing risk factors.

2. Case

A 31-year-old female patient was admitted to our hospital with the complaints of high fever, dyspnea, weight loss and night sweats. The patient had no known chronic systemic disease or substance abuse, and was not taking any medication or dental treatment. Physical examination revealed respiration rate of 25/minute, body

temperature of 39ºC, heart rate of 110/minute, blood pressure of 100/60 mmHg, and hepatosplenomegaly, axillary lymphadenopathy. She had no infectious focus in the skin, join, genitourinary tract, gastrointestinal tract and maxillofacial area. She only described small superficial skin erosion three week ago in clinical history. She had only a systolic murmur, grade 2 over 6, at the left sternal area. Laboratory findings at admission were as follows: hemoglobin 7.2 g/dl (normal range: 12-16), white blood cell count 25.3x103 cells/µl (normal range: 4.0-10.5), platelet count 1.100x103 cells/µl (normal range: 140-400), erythrocyte sedimentation rate 77 mm/hour, and C-reactive protein 6.8 mg/lt (normal range 0-5). The patient was admitted to the hematology service with diagnosis of acute leukosis. The peripheral blood smear was performed. It was rich in functional platelets and showed dominance of reactive segmented cells. While planning the bone marrow biopsy, most important finding was determined during transthoracic echocardiography. There was a mobile mass with dimensions of 19x21 mm on tricuspid valve (Fig.1a). With the suspicion of tricuspid valve IE, antibiotic therapy with cefazolin (6 g/day) and gentamicin (240 mg/day) was started. All blood cultures were positive for methicillin-sensitive staphylococcus aureus which was sensitive to the given antibiotics. Meanwhile, thorax computed tomography showed pulmonary infiltrates, pleural effusion, atelectasis, and hilar lymph nodes on the right side, all of which might indicate septic pulmonary embolism or pneumonia due to vegetation (Fig. 1b). Since fever continued and vegetation size increased at follow-up despite antibiotic therapy, surgical operation was decided. Bioprosthetic valve was implanted instead of necrotic and degenerated native tricuspid valve (Fig. 1c-d). The patient's hematological parameters improved. It thought reactive thrombocytosis and leukocytosis secondary to the infection. The same microbiological agent was identified in the cultures taken from tricuspid valve. After operation, antibiotic treatment was completed to six weeks and the patient was discharged from hospital without complication. The patient has been under medical follow-up for one year without symptoms.

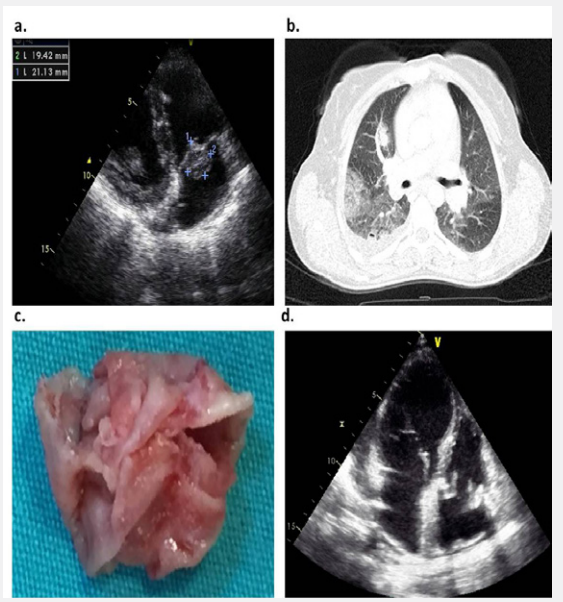

Fig. 1. Transthoracic echocardiographic view showing the vegetation attached to tricuspid valve (arrow indicates the vegetation, TV=tricuspid valve, RV=right ventricle, RA=right atrium), 1b. Chest tomography showing the pulmonary infiltrates, effusion and atelectasis. 1c. Appearance of excised tricuspid valve and vegetation during operation. 1d. Transthoracic echocardiographic view showing the bioprosthetic tricuspid valve.

3. Discussion

Symptoms and signs of right-sided IE are usually less prominent than the left-sided one, and septic pulmonary embolism or pneumonia is the leading clinical feature in some cases (Revilla et al., 2008; Wilczynska et al., 2010; Weymann et al., 2012; Chahoud et al., 2016). Right-sided IE is common in patients using intravenous drugs, and in those with indwelling cardiac devices or congenital heart problems (Weymann et al., 2012). These patients usually have severe comorbidities such as renal failure, diabetes mellitus, cancer, or HIV infection (Ortiz et al., 2014; Chahoud et al., 2016). Our case was unusual in that the patient did not have these predisposing risk factors and she had abnormal hematological (i.e., high platelet) and pulmonary (i.e., septic embolism, pneumonia) findings due to IE.

For diagnosis, high clinical suspicion is required in patients presenting with unusual clinical features and pyrexia of unknown origin. Infective endocarditis should be kept our mind (Wilczynska et al., 2010; Chahoud et al., 2016). These patients should be assessed without delay by transthoracic echocardiography. In tricuspid valve IE, the most common microorganism isolated is staphylococcus aureus, accounting for 50% to 80% of all cases (Revilla et al., 2008; Wilczynska et al., 2010; Ortiz et al., 2014). Streptococcal tricuspid valve IE is rare and is usually in combination with left-sided IE. Methicillin-resistant Staphylococcus spp. is frequently due to hospital-related causes (Revilla et al., 2008; Ortiz et al., 2014). Most cases are treated with appropriate antibiotics. Cardiac surgery is required in approximately 29% of patients (Revilla et al., 2008). These patients requiring operation usually have large vegetation, leaflet destruction, inability to eliminate bacteremia, or right-sided heart failure. Virulence of causative organism and vegetation size are the major determinants for prognosis (Revilla et al., 2008; Ortiz et al., 2014).

Conclusion

We presented the isolated tricuspid valve IE with abnormal hematological and pulmonary findings in a young woman without predisposing risk factors. For diagnosis, high clinical suspicion is required and when the patients with unusual clinical features, at pyrexia of unknown origin, infective endocarditis should be kept our mind.

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