



ELSEVIER

Contents lists available at ScienceDirect

Heart &amp; Lung

journal homepage: [www.heartandlung.com](http://www.heartandlung.com)

## Case Report

## Right-sided infective mural endocarditis complicated by septic pulmonary embolism and cardiac tamponade caused by MSSA

Weifang Wu, MD <sup>a,\*</sup>, Sikang Ye, MD <sup>b</sup>, Ge Hui Chen, MD <sup>c</sup><sup>a</sup> Intensive Care Unit, The First Affiliated Hospital, College of Medicine, Zhejiang University, 79 Qingchun Road, Hangzhou 310003, China<sup>b</sup> Intensive Care Unit, The Fourth Affiliated Hospital, Zhejiang University School of Medicine, Yiwu 322000, China<sup>c</sup> Intensive Care Unit, Jinyun People's Hospital, 321400, China

## ARTICLE INFO

## Article history:

Received 1 May 2018

Accepted 12 May 2018

Available online

## Keywords:

Mural endocarditis

Purulent pericardial effusion

Tamponade

## ABSTRACT

The appearance of right-sided mural infective endocarditis has rarely been reported. Here, we report the case of a 40-year-old male with a history of alcoholic liver disease who presented with a partial loss of consciousness and fever. Chest computed tomography scans showed multiple pulmonary infiltration sites and cavities. A repeat transthoracic echocardiogram detected a vegetation on the right ventricular surface of the interventricular septum middle segment, as well as pericardial effusion. Blood, pericardial fluid, sputum, and scalp effusion cultures were positive for methicillin-sensitive *Staphylococcus aureus*. We diagnosed the patient with infective mural endocarditis complicated by septic pulmonary embolism, pericardial effusion, and cardiac tamponade. The patient was successfully treated with pericardiocentesis and appropriate antibiotics. Right-sided mural endocarditis complicated by pericardial effusion and cardiac tamponade is an uncommon condition in clinical practice. This case confirms the usefulness of transthoracic echocardiography in the early recognition of primary mural endocarditis and its associated complications.

© 2018 Elsevier Inc. All rights reserved.

## Introduction

Right-sided mural endocarditis is a rare type of infective endocarditis (IE) with a diverse, non-specific presentation. Purulent pericardial effusion and cardiac tamponade are rare but fatal conditions. To our knowledge, purulent pericardial effusion is a rare complication of endocarditis, and the prognosis worsens once the condition develops into cardiac tamponade. However, due to atypical clinical symptoms, the early diagnosis of purulent pericardial effusion is challenging in clinical practice. Here, we describe a case of isolated right-sided mural IE without involvement of the cardiac valves that was complicated by acute purulent pericardial effusion rapidly progressing to cardiac tamponade in a patient with alcoholic liver disease.

## Case

A 40-year-old male was admitted to the Infectious Disease Department of our hospital with a partial loss of consciousness and a fever that began 1 day earlier. His medical history included alcoholic liver disease that began 3 years prior. No risk factors, including a recent dental procedure or surgery, were found in the patient's medical history. He lived with his 14-year-old son, consumed 100 g of alcohol every day for almost 20 years, and never used any illicit drugs. On physical examination, the patient appeared confused. His body temperature was 38.1 °C, his pulse rate was 101 beats/min, his respiratory rate was 33 breaths/min, his oxygen saturation was 97% on nasal catheter oxygen inhalation, and his blood pressure was 93/55 mmHg with vasopressor drug treatment. One day later, the patient's blood pressure was still unstable and lactic acid levels were high, so the patient was admitted to the intensive care unit for further management. On arrival to the intensive care unit, a physical examination revealed decreased breath sounds on the right lower lung field. No heart murmurs were heard. The liver was palpable 3 cm below the costal margin. There were hemorrhagic nodular lesions on the left palm and splinter hemorrhages on the patient's fingers (Figure 1). A laboratory analysis of the patient's blood showed neutrophilic leukocytosis, thrombocy-

Authors' contributions: 1. literature research: GeHui Chen. 2. data acquisition: Sikang Ye. 3. manuscript preparation, editing and review: Weifang Wu.

The English in this document has been checked by at least two professional editors, both native speakers of English. For a certificate, please see: <http://www.textcheck.com/certificate/qZ9YXh>.

\* Corresponding author.

E-mail address: [wwficu@zju.edu.cn](mailto:wwficu@zju.edu.cn) (W. Wu).

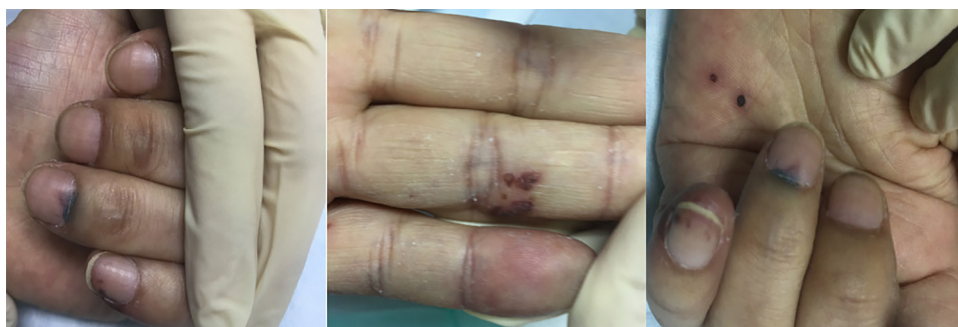


Fig. 1. Splinter hemorrhages on the nail bed of the fingers, hemorrhagic-nodular lesions on the the pad of finger and left palm.

topenia, elevated inflammatory markers, hypoalbuminemia, increased serum bilirubin, and abnormal liver test results (Table 1). An electrocardiogram showed sinus tachycardia. Transthoracic echocardiography (TTE) revealed a slight thickening of the left ventricular wall, a decrease in left ventricular systolic function, and a small amount of pericardial effusion. There was no vegetation observed in the heart. A computed tomography (CT) scan of the head showed subcutaneous swelling at the top of the right skull. Chest CT scans showed multiple pulmonary infiltrates in both lung fields, multiple pulmonary infiltration in both lung fields. And cavities were formed in the upper lobe, and two lung bilateral pleural effusions and small pericardial effusions were found (Figure 2). Abdominal CT showed severe fatty liver disease, splenomegaly, and pelvic effusion. After collecting multiple blood cultures, antibiotic treatment with meropenem (1 g q8h) and daptomycin (0.5 g qd) was started due to suspicion of septic shock. After a period of treatment, the patient regained consciousness, his circulation stabilized, and the inflammation index decreased, but a moderate fever persisted. On the 5th day of hospitalization, the patient's blood pressure dropped acutely to 60/40 mmHg. His hypotension remained refractory to fluids and required high-dose vasopressor support. Central venous catheterization via the right internal jugular vein showed elevated pressure (16 mmHg). Bedside TTE was performed to reevaluate cardiac function. TTE revealed a massive pericardial effusion, diastolic collapse of the right ventricle, and a hyperechoic mass on the right ventricular surface of the interventricular septum middle segment and inferior vena cava dilatation (Figure 3, and Video 1). IE complicated by pericarditis and cardiac tamponade was confirmed. Emergent bedside pericardiocentesis was performed, yielding 500 ml of yellow turbid fluid. After pericardial puncture, the patient's blood pressure gradually improved, his urine volume increased, and his lactate level decreased to normal. Blood, pericardial fluid, and sputum and scalp effusion cultures were positive for methicillin-sensitive *Staphylococcus aureus* (MSSA), so the

antibiotics were adjusted to amoxicillin/clavulanate potassium (1.2 g q6h) and daptomycin (0.5 g qd). Finally, the patient was discharged in stable condition and was transferred to his local hospital to continue treatment (Table 2).

## Discussion

This case is important for several reasons, including: isolated right-sided mural IE involving non-valvular endocardium in a patient with alcoholic liver disease; the localization of the vegetation in the interventricular septum; and the rare complications that included septic pulmonary embolism, acute purulent pericarditis, and cardiac tamponade.

IE vegetations are usually located intracardially and typically involve the valves. Infective mural endocarditis in the absence of valvular lesions is rare, especially in adult patients. Mural endocarditis has been found in all cardiac chambers, but attachment of the vegetation to the right heart is not common. The incidence of isolated right-sided mural endocarditis is unclear, but there have only been 14 reported cases in the literature between 1990 and 2017 (Table 2).<sup>1-14</sup> The mean age at presentation in these cases was 37 years, and the majority of patients were male. The mechanism of mural right-sided endocarditis is unclear. Probable reasons for the low incidence include the low pressure gradient within the right heart, the lower oxygen content of venous blood, the lower prevalence of right-sided congenital malformations, and differences in the covering and vascularization of the right heart endothelium.<sup>15</sup> Many factors can contribute to the development of IE, including intravenous drug use, congenital heart disease, hospital-related infections (e.g., central venous catheterization, dialysis, and the placement of pacemaker electrodes), and immunodeficiency disease.<sup>16</sup> Alternatively, mural endocarditis may result as an extension of an infection from underlying myocardial abscesses in critically ill patients.<sup>17</sup> In the 14 case reports discussed, 11 (79%) had risk factors,

Table 1  
Laboratory results

	Presentation	Reference value		Presentation	Reference value
Hb (g/L)	96	131-172	Urea (mmol/L)	29.3	2.9-8.2
WBC ( $\times 10^9/L$ )	14.2	4-10	Cr ( $\mu\text{mol/L}$ )	105	59-104
Plat ( $\times 10^9/L$ )	29	83-303	Alb (g/L)	21.2	35-55
CRP (mg/L)	168	0-8	TB ( $\mu\text{mol/l}$ )	168	0-21
PCT (ng/ml)	50.68	0-0.5	DB ( $\mu\text{mol/l}$ )	126	0-5
INR	1.69	0.85-1.15	ALT (U/L)	80	5-40
APTT (S)	39.4	22-36	AST (U/L)	317	8-40
D-dimer ( $\mu\text{g/l}$ )	9791	0-700	GGT (U/L)	458	11-50
			ALP (U/L)	292	40-150
			CHE (U/L)	1451	4500-13000

Hb: hemoglobi, WBC: white blood cell, Plat: Platelets, CRP: C-reactive protein, PCT: procalcitonin, INR: international normalized ratio, APTT: activated partial thromboplastin time, Urea: urea nitrogen, Cr: Creatinine, Alb: albumin, TB: total bilirubin, DB: direct bilirubin, AST: aspartate aminotransferase; ALT: alanine aminotransferase, GGT: gammaglutamyltransferase; ALP: alkaline phosphatase, CHE: cholinesterase.

Download English Version:

<https://daneshyari.com/en/article/8570300>

Download Persian Version:

<https://daneshyari.com/article/8570300>

[Daneshyari.com](https://daneshyari.com)