Annals of Medicine and Surgery 7 (2016) 83–86

Contents lists available at ScienceDirect

Annals of Medicine and Surgery

journal homepage: www.annalsjournal.com

Case report

Pericardial salmonella with cardiac tamponade and ventricular wall rupture: A case report

Gaurav Chand [a, *], Ruby Jhaj [a], Kumar Sanam [b], Prabhat Sinha [c], Patrick Alexander [b]

[a] Department of Internal Medicine, St. John Providence Hospital and Medical Center, 16001 W Nile Mile Road, Southfield, MI 48075, USA
[b] Department of Cardiology, St. John Providence Hospital and Medical Center, 16001 W Nile Mile Road, Southfield, MI 48075, USA
[c] Department of Pulmonology and Critical Care, St. John Providence Hospital and Medical Center, 16001 W Nile Mile Road, Southfield, MI 48075, USA

HIGHLIGHTS

- Patient with *Salmonella* pericarditis complicated by tamponade and ventricle rupture.
- *Salmonella enteriditis* bacteremia secondary to a cardiac source.
- Promptly diagnose and treat patients with hemodynamic compromise from tamponade.
- Consider a cardiac etiology when faced with *Salmonella* bacteremia.

ARTICLE INFO

Article history:
Received 7 November 2015
Received in revised form
17 March 2016
Accepted 17 March 2016

Keywords:
Salmonella pericarditis
Pericarditis
Tamponade
Ventricle rupture
salmonella enteriditis

ABSTRACT

Introduction: Non-typhoidal Salmonella (NTS) is mostly restricted to gastroenteritis; however, we report a case of Salmonella pericarditis complicated by tamponade and spontaneous ventricular wall rupture.
Case presentation: A 67-year-old male presents to the Emergency Department with complaints of fevers, chills and body aches. A chest radiograph displayed an infiltrate and an electrocardiogram suggested acute pericarditis. An echocardiogram revealed a small pericardial effusion without tamponade. Broad-spectrum antibiotics were initiated until Salmonella was discovered in blood cultures. The hospital course was complicated by sudden decompensation, and a repeat echocardiogram displayed a large effusion with constrictive physiology. During a pericardial window, the tissue was noted to have a thickened appearance with a complex effusion. The following day, the patient developed increased chest tube drainage, hypotension and acidosis, requiring an emergent sternotomy. The right ventricle was friable and had spontaneously ruptured. After ventricular repair and pericardiectomy, the tissue was sent for cultures and pathology. The specimen revealed Salmonella enteriditis. Treatment with ceftriaxone and ciprofloxacin was initiated. On postoperative day four, the patient was successfully extubated. Repeat blood cultures were negative.
Discussion: In our review of literature, only 19 cases of NTS pericarditis have been reported. Prior to our case, salmonellosis resulting in ventricular rupture has been reported once. Early diagnosis and treatment is crucial in minimizing morbidity and mortality. Clinical suspicion based on electrocardiogram and hemodynamic assessment is critical in suspecting pericardial effusion in a patient with nonspecific symptoms and Salmonella bacteremia. The key to recovery involves aggressive treatment, including pericardiectomy and antibiotic treatment.

1. Introduction

Salmonella is a non-spore forming, gram-negative, facultatively anaerobic bacillus. Non-typhoidal salmonella (NTS) is mostly restricted to gastroenteritis secondary to food contamination; however, cardiovascular manifestations may occur though are extremely rare [1,2]. Here, we report a case of *Salmonella* pericarditis complicated by spontaneous cardiac tamponade and ventricular wall rupture. A cardiac tamponade results from an accumulation of fluid around the pericardium, which causes reduced cardiac output and hemodynamic compromise. It is a syndrome that is classified as a medical emergency as it is associated with a high mortality if not addressed in a timely fashion.

* Corresponding author.
E-mail address: gauravchand.do@gmail.com (G. Chand).

http://dx.doi.org/10.1016/j.amsu.2016.03.024

2. Case report

A 67-year-old gentleman presented to the emergency department with complaints of fevers, chills, body aches and productive cough ongoing for five days. He also noted dyspnea at rest and on exertion. He denied any sick contacts or significant pet exposure. He traveled to the Philippines earlier that year.

His past medical history is significant for hypertension, diabetes mellitus, hyperlipidemia, hepatitis B and a previous stroke without any residual deficits. The patient is a retired nurse of thirty-seven years, reporting no tobacco or illicit drug usage and occasional social alcohol use. In the emergency department, initial vital signs yielded a blood pressure of 130/71 mm of Mercury, heart rate of 95 beats per minute, respiratory rate of 20 breaths per minute, temperature of 102.4° Fahrenheit and an oxygen saturation of 95% on room air. Physical examination revealed bibasilar, inspiratory crackles and decreased air entry but was otherwise unremarkable. Electrocardiogram (ECG) revealed ST-segment elevations in leads II, III, aVF, V5 and V6 without reciprocal changes (Fig. 2). A chest radiograph displayed bilateral pleural effusions with possible bibasilar opacities (Fig. 1). Complete blood count results included a white blood cell count, 15.4 K/μL; hemoglobin, 13.8 g/dL; hematocrit, 39.2%; and platelets, 257 K/μL. Chemistry panel showed sodium, 125 mmol/L; potassium, 4.6 mmol/L; chloride, 93 mmol/L; CO2, 18 mmol/L; blood urea nitrogen, 30 mg/dL; and creatinine, 1.9 mg/dL. A bedside echocardiogram was conducted, which revealed a small pericardial effusion without tamponade physiology and preserved biventricular function. Blood cultures were drawn, and the patient was subsequently admitted for sepsis secondary to community-acquired pneumonia and acute pericarditis. He was started on broad-spectrum antibiotics. The following day, preliminary blood cultures revealed a gram-negative bacilli bacteremia.

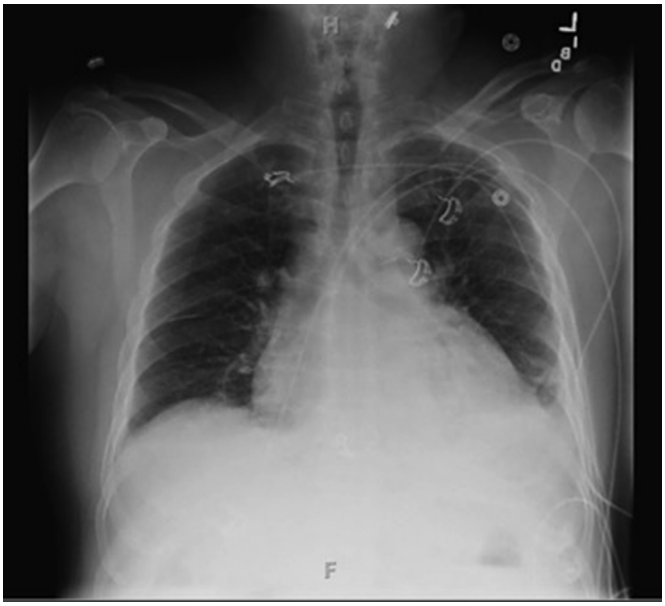

Fig. 1. Chest Radiograph – A chest radiograph exhibiting an enlarged cardiac silhouette and blunting of the costophrenic angles bilaterally.

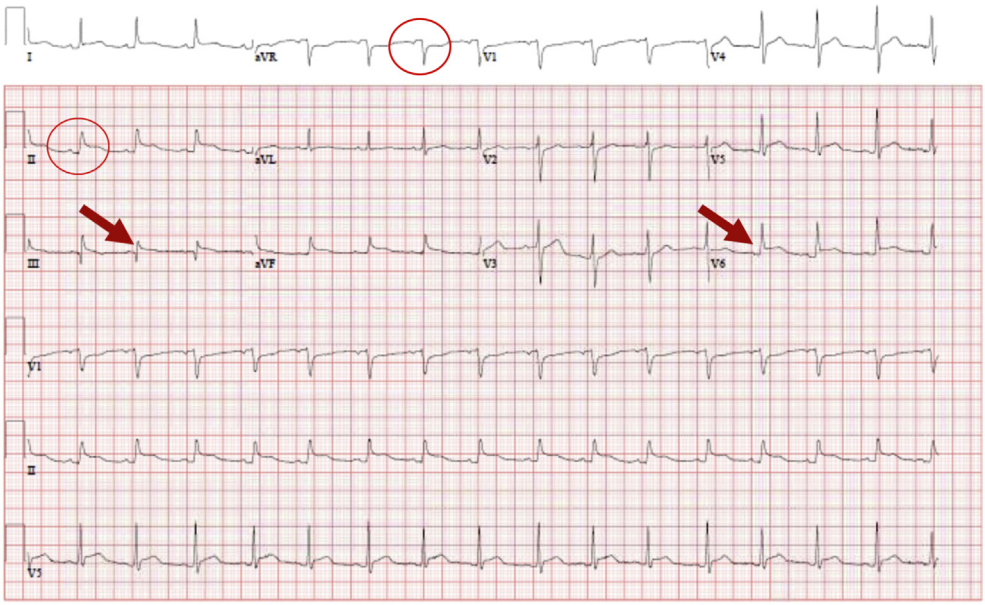

Fig. 2. Electrocardiogram – A 12-lead electrocardiogram revealed ST-segment elevations in leads II, III, aVF, V5 and V6 without reciprocal changes. PR depression is also noted in lead II with PR elevation in lead aVR, which is specific for pericarditis.