

Massive haemorrhagic pericardial effusion as the cardiac manifestation of *Salmonella enteritidis* infection in a severely immunocompromised patient

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SUMMARY

A 41-years-old gentleman was admitted for reduced effort tolerance with non-specific symptoms of weight loss and generalised body weakness. Chest X-ray (CXR) showed cardiomegaly. Echocardiography showed a large pericardial effusion with septation. Emergency pericardiocentesis was performed and pericardial fluid culture grew *Salmonella enteritidis* (*S. enteritidis*). He tested positive for the retroviral disease, with a CD4 count of 10 cells/ μ L. Intravenous (IV) ceftriaxone was administered. A pericardial drain was inserted due to the rapid re-accumulation of pericardial fluid after the initial pericardiocentesis. He also had drainage of his left pleural effusion. He had a guidewire exchange of pericardial drain around 2 weeks after admission, with flushing performed whenever the flow was poor. A repeat echocardiogram showed early signs of constrictive pericarditis with residual pericardial effusion in which intra-pericardial fibrinolysis was considered. He was started on antiretroviral therapy (ART) and his condition remained stable. The pericardial drain was kept throughout his admission. Unfortunately, he developed severe sepsis and succumbed to it about a month post-admission.

INTRODUCTION

Acute pericarditis manifesting with massive haemorrhagic pericardial effusion is a potentially life-threatening condition that should be identified and treated early. Non-typhoidal *Salmonella* infection is a recognised but rare cause of pericarditis with pericardial effusion.

More than 200 serovars of *Salmonella* had been identified to have clinical implications in human.¹ The first case of non-typhoidal *Salmonella* pericarditis by *S. choleraesuis* was reported in a 36-years-old woman in 1936. In 1961, seven other cases were reported infected by *S. typhimurium*, *S. paratyphi A*, *S. blegdam* and *S. Newport*. The majority of the cases involved children under 2 years of age.² In recent years, there have been reports of non-typhoidal *Salmonella* causing pericarditis with pericardial effusion, mainly in immunocompromised adult patients. We report a case of massive haemorrhagic pericardial effusion due to *S. enteritidis* pericarditis in a severely immunocompromised patient with an advanced retroviral disease.

CASE PRESENTATION

A 41-years-old man who was a non-smoker and non-alcohol drinker presented with unintentional weight loss of up to 8 kg, loss of appetite, lethargy, reduced effort tolerance, and unwell for 3 months. He was sexually active with multiple male partners.

He was admitted to a district hospital for symptomatic anaemia 1 week and was transfused with two pints of packed cells around 1 week before his current presentation.

However, his general condition did not improve after discharge, thus, he presented to our hospital, which is a tertiary referral hospital. His vital signs showed blood pressure of 120/72 mmHg, heart rate of 126 beats per minute, a temperature of 36.7°C and respiratory rate of 28 breaths per minute. On examination, he appeared cachectic-looking and had oral thrush and generalised macular rashes. Auscultation of his lung and heart revealed left lower zone crepitations with no audible murmur or pericardial rub.

Laboratory examinations showed pancytopenia with a white cell count of $2.77 \times 10^3 \mu$ L predominantly neutrophil of 77%, haemoglobin of 7.9 g/dL, platelet of $40 \times 10^3 \mu$ L and C-reactive protein (CRP) of 952 nmol/L. 12-lead electrocardiogram (ECG) showed ST-segment elevation at leads II, III, aVF and V2-V6 (Figure 1A). CXR showed cardiomegaly with a globular heart (Figure 1B). Bedside transthoracic echocardiogram (TTE) showed a massive pericardial effusion with septation, with the deepest pool of 4 cm (Figure 2A) and also left pleural effusion.

An emergency pericardiocentesis was performed and drained about 500 ml of haemorrhagic pericardial fluid. Pericardial fluid analysis showed a total protein of 63 g/L, lactate dehydrogenase (LDH) of 1,787 U/L and glucose level of <0.11 mmol/L. The ratio of pericardial fluid to serum protein and LDH were 0.84 and 3.64, respectively which indicate exudative pericardial effusion based on Light's criteria. His pericardial fluid grew *S. enteritidis*. Other investigations performed on the pericardial fluid such as cytology, acid-fast bacilli (AFB) and TB GeneXpert study were negative. His human immunodeficiency virus (HIV) and hepatitis B tests were positive. His CD4 cell count was 10 cells/ μ L.