Successful management of *Listeria monocytogenes* pericarditis: case report and review of the literature

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Abstract  *Listeria monocytogenes*, although an uncommon cause of illness in the general population, is feared principally because of the morbidity and mortality associated with CNS infections. Cardiovascular involvement with *L. monocytogenes* is very rare, and has been limited to endocarditis.

We describe a case of *Listeria* pericarditis, which occurred in a 60-year-old man with Child-Pugh B cirrhosis who presented to the emergency department with asthenia, anorexia, and respiratory distress. The echocardiogram showed severe pericardial effusion and after pericardiocentesis, *L. monocytogenes* was isolated in the culture of pericardial fluid.

After surgical pericardiectomy with draining of the pericardial effusion and antibiotic treatment with ampicillin, the patient experienced a slow, but full recovery.

Documentation of *L. monocytogenes* pericarditis is an extremely rare entity with very scarce reports in medical literature, and is usually associated with a very poor prognosis. A case report is presented together with a review of the literature.

Keywords  *Listeria monocytogenes* – pericarditis.

INTRODUCTION

*L. monocytogenes* is an aerobic, Gram-positive cocccobacillus affecting gravidas, neonates, elderly, and the immunocompromised. CNS infections, such as meningitis, meningoencephalitis, or abscesses, are the most serious known manifestations of disease because of the associated high morbidity and mortality.

Cardiovascular involvement with *L. monocytogenes* is very uncommon and has been limited to endocarditis. *Listeria* pericarditis is extremely rare, with only seven cases reported in the literature, so the clinical manifestations, optimal treatment, and outcome have not been completely ascertained.

A case report is presented together with a review of the literature.

CASE REPORT

A 60-year-old white patient with Child-Pugh B cirrhosis was admitted to the emergency department with a 15-day history of anorexia, asthenia, and respiratory distress. At the time of the physical examination, the patient was collaborative and eupnoeic. The radial pulse was regular (114 ppm), the temperature was 36.1°C, and the blood pressure was 114/73 mmHg. Cardiovascular examination revealed diminution of the first and second sounds without murmurs. Fine crepitations were heard in the lung bases bilaterally. The liver was palpated 2 cm below the right costal margin. Moderate ascites and pretibial oedema were noted. There were no meningeal signs.

The laboratory findings were as follows: leukocyte count, 16 × 10³/ul; haemoglobin, 9.3 g/dl; platelet count, 257,000/µl; serum creatine, 0.5 mg/dl; SGOT, 93 IU/L, SGTP, 37 IU/L; lactate dehydrogenase, 511 U/L; and urine sediment, normal. The X-ray showed cardiomegaly,
with a small left pleural effusion. The ECG showed sinus
tachycardia.

The echocardiogram showed a moderate pericardial
effusion with fibrin in the apex, without signs of tam-
ponade.

Two days later, the patient experienced clinical deter-
rion with hypotension and respiratory distress. A
repeat echocardiogram revealed a severe pericardial
effusion mainly located to the left ventricular antero-
lateral wall. There were no signs of tamponade. A tech-
nically difficult pericardiocentesis was performed, show-
ing serosanguinous fluid. With a suspicion of purulent
pericarditis, antibiotic treatment with meropenem was
empirically started. Four days later it was switched to
ampicillin in association to gentamicin after isolation of
*L. monocytogenes* from the pericardial fluid culture. No
other focus of infection was demonstrated. A surgical
pericardiectomy was performed the same day, during
which 800 ml of serosanguinous pericardial fluid was
drained.

After an initial period of clinical instability, the
patient experienced slow, but progressive recovery. All
of the blood cultures were sterile. Predisposing factors
other than cirrhosis were excluded (HIV infection,
haemochromatosis, and liquid or solid neoplasms).

The patient was discharged with little pericardial
effusion after 5 weeks of ampicillin therapy (combined
with gentamicin during the 1st week).

Nine months later, the patient was still doing well.

**DISCUSSION**

Cardiovascular involvement with *Listeria* is extremely
rare, and mainly limited to endocarditis. Since the first
report by Khan et al., only six patients with pericarditis
caused by *L. monocytogenes* have been reported in the
medical literature.

From this review some conclusions can be drawn. As
expected, *Listeria* pericarditis occurred in patients
with chronic debilitating conditions, such as cirrhosis
or haemochromatosis, alcoholism, renal insufficiency
under haemodialysis, neoplasms, or disorders character-
zied by dysfunction of cell-mediated immunity, such as
AIDS.

The clinical course can be acute or subacute, and is
frequently characterized by fever, constitutional symp-
toms, and cardiac manifestations.

The diagnosis has been assumed by a clinical picture
of pericarditis together with bacteraemia due to *L. monocy-
togenes*. Isolation of *L. monocytogenes* in the pericar-
dium, which is the gold standard to diagnosis, is very
difficult to obtain.

The optimal treatment of *Listeria* pericarditis is not
entirely known, penicillin being the drug most frequently
used.

The prognosis is usually poor with a high mortality
rate.

Based on our experience, we advocate the use of the
combination of penicillin or ampicillin with genta-
micin, which has shown synergistic activity in vitro
and in vivo, and for these reasons, is the first-choice
therapy of listeriosis.

Moreover, given the high mortality rate of pericardial
involvement, we also think that an invasive approach is
preferred together with antibiogram-directed antibio-
therapy in these patients.

Importantly, very little is still known and more reports
are needed to find the optimal approach to this entity.

**CONFLICT OF INTEREST:** none.

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