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Acute Myopericarditis An Uncommon Presentation of Severe Leptospirosis

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ABSTRACT

Leptospira infrequently involves the Cardiovascular system due to underestimated statistics. This case is a 45 years old male, a daily laborer residing in the chengalpattu district of Tamilnadu, a tropical endemic area for Leptospira. The patient initially came to OPD with fever, headache and myalgias. All investigations were done, and was diagnosed Leptospirosis (Ig M positive and MAT positive), and specific treatment was given. Patient had mild chest pain and got admitted in hospital after a week. Echocardiography showed pericardial fluid (approximately 200 cc) with no cardiac tamponade and pericardial thickening. ECG showed supraventricular arrhythmia (with normal previous ECG) and elevated cardiac biomarkers. Many case reports show asymptomatic cardiovascular involvement in severe leptospirosis. follow up needed in all patients with uncomplicated leptospirosis and cardiac vascular involvement evaluation with an ECG and cardiac enzymes to avoid complications to the patient.

Keywords: Leptospira, Echocardiography, pericardial fluid, ECG.

Case Discussion

A 45-year-old Alexander, who came from Chengalpattu endemic area for leptospirosis and Malaria. Initially he presented to the Hospital with high-grade fever, headache, and myalgias, and he was tested for Leptospirosis, confirmed by positive Leptospira IgM, negative IgG, and highly positive Microscopic Agglutination Test, and indicated doxycycline (for 6 days course). He was admitted with mild chest pain, severe lower limb edema, acute headache, polymyalgia, and foamy urine. Although, on admission we ruled out any hepatic, kidney, pulmonary, and cardiac complications, at that point, he was presenting a leptospirosis infection.

On examination

Patient in poor general condition, b/l lower limb edema, eyes look red.

Cardiovascular: Rhythm, tachycardia, no murmurs; All other system examination is unremarkable.

Laboratory

Elisa for leptospirosis: Microagglutination reagent in tube (MAT); Leptospirosis: Autummalis 1/400/Canicola 1/200; Chest X-ray: Increased cardiac silhouette with atrial effacement and right ventricle edges. He presented with chest pain and echocardiography: pericardial fluid (approximately 200 cc) with no cardiac tamponade, thickening of visceral and parietal (+/- 5mm) pericardium and electrocardiogram shows simple and aberrant supraventricular arrhythmia with isolated extrasystoles and raised cardiac enzymes (Creatine phosphokinase: 800 U/L, Creatine phosphokinase-M: 5 ng/ml, Myoglobin: 143 ng/ml and Troponin I: 0.9 ng/ml) Proteinuria: 0.86g/24h.

Leptospirosis with chest pain associated with the laboratory and imaging and the Reactive MAT, gives a differential diagnosis of rare manifestation of Myopericarditis due to Severe *Leptospira*. In addition, other infective and autoimmune aetiologies were excluded, such as dengue haemorrhagic fever or other arboviruses, autoimmune multi-system disorders such as systemic lupus erythematosus, and vasculitis were also differentiated. The patient recovered with antibiotics and anti-inflammatory medication to ensure the pericardial complication.

Discussion

Leptospirosis is a generalized, systemic disease, mainly Vascular lesion, affecting predominantly capillaries is a characteristic feature of leptospirosis and responsible for edema and haemorrhagic diathesis. Therefore, highly sensitive and specific MAT is the gold standard serological test for the high positive diagnosis in this patient (Jorge et al., 2014).

Multiple factors may cause clinical manifestations that suggest cardiac involvement. Multiple electrocardiographic changes occur in leptospirosis, very commonly atrial fibrillation, atrioventricular conduction blocks and non-specific ventricular repolarization abnormalities. The diagnostic value of echocardiographic evidence and cardiac biomarkers is unknown (Andre, 2000).

There is no specific management to prevent or treat cardiac involvement in leptospirosis; In this patient, we started anti-inflammatory treatment for pericarditis which has been well defined with first-line agents represented by NSAIDS drugs and colchicine, second-line agents, low-dose corticosteroids (slow tapering), and for specific indications (Abdulkader et al., 2002).

In this case, at first cardiac complication is not present. The disease *Leptospira Interorgan* has two clinical stages, and it is specifically in the second week of disease, immune phase. Follow-

up is compulsory for at least 4 weeks after the febrile stage in patients with a confirmed diagnosis of Leptospirosis, because patients can decompensate and are predisposed to get complicated. Thus, this case is the report of leptospirosis presenting acute myocarditis and pericarditis due to Leptospirosis.

Conclusion

In conclusion, leptospirosis is a cause of myopericarditis in endemic places. In addition, *Leptospira* causes several cases of idiopathic myocarditis. If the patient has leptospirosis, we should always consider cardiac involvement, take an ECG, cardiac enzymes and rule out cardiovascular involvement.

Author contribution

Jayakanthan S, Manimaran R, Sathyanarayanan M, Bharathi Raja K encouraged and supervised the findings of this work. All authors discussed the results and contributed to the final manuscript.

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Conflict of interest: Nil

Study significance: Several case reports show asymptomatic cardiovascular involvement in severe leptospirosis. follow up needed in all patients with uncomplicated leptospirosis and cardiac vascular involvement evaluation with a ECG and cardiac enzymes to avoid complications to patient.

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