Kardiologia Polska
2010; 68, 5: 562–563

ISSN 0022–9032

A case of complete heart block in a patient with HIV and leptospirosis

Całkowity blok przedsionkowo-komorowy u chorego z HIV i leptospirozą

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Abstract

A 32 year-old patient presented with a two-week duration of fever with hepato-splenomegaly with dizziness spells for two days. The patient was found to have HIV and to be leptospira positive. Electrocardiogram showed complete heart block which disappeared after antibiotic treatment. Our case is unique because a combination of HIV, leptospirosis and complete heart block has never before been described in literature.

Key words: HIV, cardiac disease, complete heart block, leptospirosis

Kardiol Pol 2010; 68, 5: 562–563

CASE REPORT

A 32 year-old man presented with fever which had lasted for two weeks with light-headedness and dizziness at rest, and imbalance while walking which he had been suffering for two days. He had been in good health with no medical history or cardiac problems prior to the onset of illness. He was very active, working as a goldsmith and staying away from his wife and children in another city. His family history was negative for any cardiac or connective tissue disorders. Upon presentation, his ECG demonstrated second degree Mobitz type 2 atrioventricular block with intermittent complete heart block and a ventricular rate of 32 beats per minute. Later on, complete heart block with narrow QRS atrioventricular nodal escape rhythm at a rate of 30 beats per minute was present (Fig. 1). Echocardiogram ruled out the presence of any structural cardiac abnormalities.

On examination he had mild icterus with hepato-splenomegaly with bilateral axillary lymphadenopathy. Laboratory examination showed normal electrolytes, leukocytosis and liver abnormalities: total protein decreased to 9.8 gm% with A: G reversal, and increased serum alkaline phosphatase 549 U/L and SGOT-107 U/L SGPT-105 U/L. He was negative for HbsAg and anti HCV antibody. He was positive for HIV with CD4+ count of 119/dL. As the conduction abnormality couldn't be explained, he was tested for leptospirosis which turned out positive, and the patient received ceftrixone. Complete heart block disappeared on the fourth day, when he was discharged and advised to attend an HIV clinic.

DISCUSSION

This is the first case report of an HIV patient who was not receiving any retroviral drug presenting with a conduction abnormality with syncope that responded to antibiotic treatment.

Heart disease is a relatively common post mortem finding in HIV-infected patients (25–75% in autopsy series). Cardiovascular disease may be seen as a direct consequence of HIV infection or as a consequence of anti-retroviral treatment as a part of the lipodystrophy syndrome. As a primary consequence of HIV infection, the most common clinically significant finding is dilated cardiomyopathy associated with CHF, referred to as HIV-associated cardiomyopathy. The diagnosis of HIV-related DCM carries a very poor prognosis, with

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Received: 25.06.2009 **Accepted:** 20.01.2010

Figure 1. ECG. Complete heart block with narrow QRS atrioventricular nodal escape rhythm at a rate of 30 beats per minute

mortality hazard ratio of 4.0 when compared with uninfected controls with idiopathic DCM [1]. In autopsy studies of patients with HIV infection, myocarditis was identified in more than half of the 71 patients evaluated, and biventricular dilatation was present in 10% of cases [2]. Atrial arrhythmias are well described manifestations of HIV infection. However, conduction block has not been described in the literature in a patient not receiving anti-retroviral treatment. Lopinavir-ritonavir is an effective option for the treatment of HIV type 1 (HIV-1)-infected individuals and has been associated with serious bradyarrhythmia.

Jones and Kim [3] reported a case of leptospirosis in a patient with acquired immunodeficiency syndrome. Conduction abnormality and arrhythmias are common manifestations of leptospirosis. An analysis of data from 50 patients with serologically proven leptospirosis demonstrated that 70% of them had ECG abnormalities, with atrial fibrillation being the commonest major arrhythmia noted [4]. Thirty-six percent of patients had conduction system abnormalities and 30% had T-wave changes. Another series reported atrioventricular block in 44% of patients with leptospirosis [5]. A glycoprotein fraction of leptospiral cell wall has been incriminated in the pathogenesis of these rhythm disturbances. This protein is thought to inhibit the Na-K ATPase and may be responsible for arrhythmia [6]. Univariate analysis has shown that cardiac arrhythmia is more common in patients dying of leptospirosis than in the survivors [7].

Our case is unique in two senses. Firstly, presentation of HIV with complete heart blocks has not been described in literature. Secondly, the association of leptospirosis and HIV is rare, and conduction abnormality in this setting has not been described in the literature. It is imperative that a high degree of suspicion for the disease be maintained, particularly in endemic areas. There is a need to increase awareness of the disease so that timely therapy can be instituted.

References

1. Prendergast BD. HIV and cardiovascular medicine. Heart, 2003; 89: 793–800.
2. Anderson DW, Virmani R, Parrillo JE et al. Prevalent myocarditis at necropsy in the acquired immunodeficiency syndrome. J Am Coll Cardiol, 1988; 11: 792–799.
3. Jones S, Kim T. Fulminant leptospirosis in a patient with human immunodeficiency virus infection: case report and review of the literature. Clin Infect Dis, 2001; 33: 31–33.
4. Rajiv C, Manjuran RJ, Sudhayakumar N et al. Cardiovascular involvement in leptospirosis. Indian Heart J, 1996; 48: 691–694.
5. Trivedi SV, Bhattacharya A, Amichandwala K et al. Evaluation of cardiovascular status in severe leptospirosis. J Assoc Physic Ind, 2003; 51: 951–953.
6. Younes-Ibrahim M, Burth P, Castro-Faria M et al. Effect of Leptospira interrogans endotoxin on renal tubular Na, K-ATPase and H, K-ATPase activities. Ann NY Acad Sci, 1997; 834: 684–686.
7. Daher E, Zanetta DM, Cavalcante MB et al. Risk factors for death and changing patterns in leptospirosis acute renal failure. Am J Trop Med Hyg, 1999; 61: 630–634.