■ AV block due to lyme disease

Larisa Ščetić Mešan*,
Alma Agačević,
Nedžad Hadžić

Public Health Institution
Hospital Travnik, Travnik,
Bosnia and Herzegovina

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***ADDRESS FOR CORRESPONDENCE:** Larisa Ščetić Mešan, Javna ustanova Bolnica Travnik, Kalibunar bb, 72270 Travnik, Bosnia and Herzegovina. / Phone: +387-61-328-674 / E-mail: larisa.scetic@gmail.com

ORCID: Larisa Ščetić Mešan, <http://orcid.org/0000-0003-1709-7366> • Alma Agačević, <http://orcid.org/0000-0003-4671-0991>
Nedžad Hadžić, <http://orcid.org/0000-0002-0261-3754>

Background: Lyme disease (LD) is a tick-borne systemic infectious disease caused by the spirochete *Borrelia burgdorferi*. Clinical manifestations are various. Approximately 2/3 of patients have disseminated form of disease such as Lyme carditis (LC), present in <1% of patients in Europe. The cardinal manifestation of LC is a self-limited conduction system disease, most frequently involving the atrioventricular node and leading to varying degrees of AV nodal block.¹⁻³

Case Report: 48-year-old male without any known past medical or family history of cardiovascular disease presented with postural dizziness, presenting 2 months prior to admission. He was employed in the forest industry and reported allegedly tick bite. Physical examination on admission did not reveal any skin rash. Initial blood work was within normal limits. EKG on admission showed second degree AV block, and RBBB. Holter EKG revealed AV conduction abnormalities; varying from second (Mobitz II) to third degree AV block. Echocardiography revealed hypokinesis of inferoposterior wall. An exercise stress test showed no signs of coronary insufficiency. Considering patients' risk of exposure to infected ticks and history of a tick bite, serological tests were performed, revealing elevated IgG levels for *B. burgdorferi*. After antibiotic therapy his heart block resolved.

Discussion: The diagnosis of LC is challenging: it is usually made in the presence of other manifestations and stages of LD. In differential diagnostic rethinking we considered ischemic etiology which was eventually excluded according to course of the disease and serological findings. Patients suspected of having early disseminated or late disease are diagnosed clinically and serologically. Positive serologic testing is not by itself diagnostic, nor does negative serologic testing exclude the diagnosis. There is an overall consensus in favour of antibiotic treatment but dosage and duration of treatment is still unclear.

Conclusion: The diagnosis of LC is not always obvious but may be diagnosed if there is a high degree of suspicion. Serological results should always be interpreted in the context of the patient's clinical condition or course of the disease. This case also demonstrated the importance of detailed history taking.

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LITERATURE

1. Karmacharya P, Aryal MR. Heart stopping tick. *World J Cardiol.* 2013;5(5):148-50. DOI: <http://dx.doi.org/10.4330/wjc.v5.i5.148>
2. Scheffold N, Herkommer B, Kandolf R, May AE. Lyme carditis--diagnosis, treatment and prognosis. *Dtsch Arztebl Int.* 2015;112(12):202-8. DOI: <http://dx.doi.org/10.3238/arztebl.2015.0202>
3. Torbahn G, Hofmann H, Allert R, Freitag MH, Dersch R, Fingerle V, et al. Efficacy and safety of pharmacological agents in the treatment of erythema migrans in early Lyme borreliosis-systematic review protocol. *Syst Rev.* 2016 May 3;5:73. DOI: <http://dx.doi.org/10.1186/s13643-016-0251-3>