ISSN: 2474-3658

Elavia et al. J Infect Dis Epidemiol 2020, 6:160
DOI: 10.23937/2474-3658/1510160
Volume 6 | Issue 5
Open Access

Journal of
Infectious Diseases and Epidemiology

CASE REPORT

Ocular Manifestation of Lyme Disease: A Rare Case of Branch Retinal Vein Occlusion

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Introduction

Lyme disease (LD) is the most common vector-borne infection in the US with multiple clinical manifestations occurring at different stages of the disease. The most common ocular manifestation of LD is conjunctivitis (10%) [1]. Literature describing other ocular manifestations is scarce with very few cases reported worldwide, and only one involving branch retinal vein occlusion (BRVO). Here we report the second case of LD with unilateral BRVO.

Case

A 63-year-old male from Northeastern Pennsylvania presented in fall with the complaint of sudden onset of blurred vision in the right eye. This was preceded by a history of Lyme arthritis diagnosed with positive immunoglobulin titers (IgG and IgM) on Western blot analyses of the synovial fluid four weeks ago. His past medical history was remarkable for hypertension and hyperlipidemia. The sudden decrease in right eye visual acuity was moderate and reported at all distances. The patient denied any photopsia, floaters, trauma, eyeglasses or previous episodes of blurred vision. There was no history or clinical evidence to suggest a vasculitic, hematologic or hypercoagulable condition. Skin exam was negative for a rash. At presentation, the best-corrected visual acuity (BCVA) was 20/60 in the right eye. Fluorescein angiography of the right eye showed BRVO with macular edema. No abnormalities were found in the left eye. Patient was treated with doxycycline and prednisone with clinical improvement.

Discussion

LD causes a multitude of systemic manifestations, which may present in stages with overlap in the clinical features of each stage. Ocular findings in LD are rare and have only been reported in very few case studies [2-6]. These include iritis, keratitis, iridocyclitis, retinal vasculitis, choroiditis, optic neuropathy, and uveitis, among which conjunctivitis is the most common (10%) [7]. Here we present the second case of BRVO related to LD. BRVO was first reported in a Finland case series in 2000, where it was identified in one out of ten cases of Lyme-associated uveitis [7]. The main reported symptoms in patients with uveitis were decreased visual acuity, similar to our patient. Our case is special in a sense that ocular symptoms started within 4 weeks of Lyme arthritis, compared to late onset ocular involvement in previously reported cases. Studies have shown evidence for oral doxycycline to be effective in most patients, as was the case in our patient. Intravenous antibiotics have reported high effectiveness for neuro-ophthalmic manifestations and for those with failed oral regimens.

Conclusion

Ocular Lyme disease is rare and therefore is diagnosed after exclusion of other inflammatory, trauma, vascular and infectious etiologies. Due to this, treatment recommendations vary largely and are based more on individual patient response.

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Citation: Elavia N, Li S, Wang Y, Yusuf I, Weisenreider J (2020) Ocular Manifestation of Lyme Disease: A Rare Case of Branch Retinal Vein Occlusion. J Infect Dis Epidemiol 6:160. doi.org/10.23937/2474-3658/1510160

Accepted: September 11, 2020: **Published:** September 13, 2020

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