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Listeria monocytogenes, a rare cause of endophthalmitis

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Sir,

Listeria monocytogenes is a ubiquitous Gram-positive rod that is found in food and is responsible for gastrointestinal infections due to the consumption of unpasteurized dairy products or contaminated meat and vegetables. Rarely, it produces invasive disease that primarily affects immunosuppressed patients, chronic diseases, intravenous drug use, malignancies, the elderly and pregnant women; mainly causing bacteremia and meningitis [1-3]. *L. monocytogenes* is a rare and serious cause of endophthalmitis, which can lead to vision loss [3]. The first case reported in the literature of endophthalmitis due to *L. monocytogenes* was in 1967 by Goodner and Okumoto [4], since then have been published 25 cases. Endophthalmitis of endogenous cause, less frequent than the exogenous one, is due to blood-borne seeding from a place far from the eye and is related to the presence of predisposing factors, such as cirrhosis or haemochromatosis [5].

We present a case report of endogenous endophthalmitis due to *L. monocytogenes* in a cirrhotic patient. A 55-year-old patient presented a painful red eye and visual disturbance in the right eye for 1 month. His personal history includes liver cirrhosis due to Hepatitis C virus (HCV) and ethanol, having started 2 weeks before the antiviral treatment for HCV. The temporal relationship between the initiation of antiviral treatment and the clinical uveitis made the physicians suspect a causal relationship (there are cases described), so the treatment was suspended. Several serological tests were requested in the aqueous humor for screening of acute infectious pathology in an immunosuppressed patient. Valganciclovir oral

plus ophthalmological treatment was empirically initiated, without clear improvement. In view of the poor evolution of panuveitis, a vitrectomy was performed and sent for culture and virus study to microbiology.

The sample was cultured on aerobic and anaerobic blood agar (Beckton Dickinson Columbia Agar 5%), chocolate agar and thioglycolate. The study of the virus in the vitreous humor (simple herpes virus, virus varicella zoster and cytomegalovirus) was negative. In Gram stain, Gram-positive bacilli were observed and after 18 hours of incubation, gram-positive bacilli grew in pure culture on both, blood and chocolate agar, catalase positive and oxidase negative. They were identified by mass spectrometry (MALDI-TOF MS, Bruker Biotyper) as *L. monocytogenes* with a 2,25 score. The minimum inhibitory concentration (MIC) to the different antibiotics was performed by the MIC test method on Mueller Hinton agar with 5% sheep blood and incubated at 37 °C 24 h. The MIC values were interpreted following the EUCAST cutoffs for *Listeria*. *L. monocytogenes* was susceptible to ampicillin (0.5 mg/L), erythromycin (0.25 mg/L) and meropenem (0.19 mg/L) and resistant to trimethoprim/sulfamethoxazole (0.19 mg/L). Treatment was started intravenously with ampicillin for 3 weeks, associating gentamicin for 2 weeks. At the ophthalmologic level, the treatment was changed to intravitreal ofloxacin (every 6 hours for 10 days). The sample was sent to the National Center of Microbiology for its characterization and the result was *L. monocytogenes* group 4 (IVb). Blood cultures were negative and the origin of the infection could not be established, although it could be ruled out that it was due to an exogenous cause due to the absence of previous treatment or eye surgery.

Most of patients who present endophthalmitis due to *L. monocytogenes* have poor visual acuity results even with adequate antibiotic treatment, especially due to a delay in the diagnosis since it is not a frequent pathology [1]. Because of

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this, a diagnosis and early treatment of endophthalmitis due to *L. monocytogenes* is crucial, and should be considered in the differential diagnosis of immunosuppressed patients with anterior uveitis and high intraocular pressure [6]. In our case, the diagnosis was delayed one month after presenting the symptoms, which explains the non-recovery of visual acuity, even with the appropriate antibiotic treatment. In endogenous endophthalmitis it is common not to find the source of the infection, despite taking samples for its search, as it happened in our case.

Ampicillin is the treatment of choice, and it was the antibiotic used in this patient [7]. In summary, it is crucial to highlight the importance of taking samples for microbiological culture for the diagnosis of endophthalmitis due to *L. monocytogenes*, since they are the key to the diagnosis and early treatment of this pathology so difficult to diagnose due to its rare but serious presentation.

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CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest

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