Endogenous endophthalmitis secondary to urosepsis caused by Gram-negative bacteria. A case report

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Background: Endogenous endophthalmitis is a rare intraocular infection, responsible for 2-15% of endophthalmitis cases. It is related to a systemic infection in up to 52-90% of cases, in the context of systemic infections such as liver abscesses, pneumonia, urinary tract infections, meningitis, intravenous drug users and fungemia, associated with urosepsis. It has a mortality rate of 4%. Predisposing entities are intravenous drug use, type 2 diabetes, cancer, lupus, liver disease, among others. This occurs mainly by hematogenous dissemination caused by an extraocular focus crossing the oculohematogenous barrier, being more frequent its etiology by grampositive bacteria (60% in North America). Endogenous endophthalmitis is considered a serious and rare intraocular infection resulting from hematogenous dissemination from a focus distal to the eyeball. The most common presentation of endophthalmitis is due to a local primary infection. However, the presentation secondary to this condition is equally extraordinary. We present the case of a patient with type 2 diabetes who was poorly refractory to treatment with diabetic ketoacidosis triggered by a concomitant urinary tract infection and sudden presentation of bilateral blindness secondary to endophthalmitis. Initially, symptoms suggestive of diabetic ketoacidosis accompanied by data of systemic inflammatory response with a septic focus detected in the urinary tract were presented. A urine culture obtained Escherichia coli growth and the sudden-progressive presentation of blindness were elements that led us to suspect endogenous endophthalmitis secondary to hematogenous dissemination.

Keywords: Endophtalmitis, E. Coli.

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ndogenous endophthalmitis is a rare infection, responsible for 2-15% of endophthalmitis, and is related to systemic infection in up to 52-90% of cases. Predisposing entities are intravenous drug use, type 2 diabetes, cancer, lupus, liver disease, among others. It occurs mainly by hematogenous dissemination caused by an extraocular focus crossing the oculohematogenous barrier, with a more frequent gram-positive etiology. It is related to systemic infection in up to 52-90% of cases, in the context of infections such liver systemic as abscesses. pneumonia, urinary tract infections, meningitis, intravenous drug users, and fungemia1; associated with urosepsis, it has a mortality rate of 4%.

Case report

A 42-year-old female with a personal pathological history referring to type II diabetes, poor adherence to treatment is presented; she goes to the emergency room secondary to discomfort of 1 week with dysuria, bladder tenesmus, pollakiuria added to abdominal pain, nausea, vomiting, giving a diagnosis of diabetic ketoacidosis with management based on liquids, insulin infusion and empirical antibiotic therapy, being discharged due to clinical improvement; two days later she perceives icteric tint in the sclerae, abdominal distension, postprandial fullness, decreased visual acuity in both eyeballs,

From the Internal Medicine Department at Hospital General de Puebla "Dr. Eduardo Vázquez Navarro". Puebla, México. Received on September 17, 2024. Accepted on September 22, 2024. Published on September 24, 2024 periorbital edema with abundant non-fetid yellowish exudate starting in the right eyeball and progressing to the left, hyperemic erythematous eyelid, without pain, inability to open the eye, admitted with deterioration of the state of alert, signs of hypoperfusion, blood pressure of 80/55 mmHg, fever of 39.5 ° C starting aminergic support; She reports no perception of images in both eyes, only flashes of light. She was assessed by otorhinolaryngology, diagnosing probable rhino-orbital mucormycosis and starting a regimen with Amphotericin B; a simple CT scan of the skull and orbits was performed, reporting an increase in the volume of soft tissues at the right orbital level, with no further relevant findings. A urine culture and collection of ocular secretion and central blood culture were performed, reporting the isolation of Escherichia coli in the three samples, giving targeted therapy according to the antibiogram with no improvement at the ocular or systemic level; an ophthalmology consultation was made, deciding on evisceration of both eyeballs with improvement of the clinical picture, thus resolving the clinical case.

Discussion

This pathology has an incidence of 5-15% with right ocular predilection.3 The main trigger was a poorly treated UTI by E. coli with hematogenous dissemination. The incidence in North America for gram-negative bacteria is extremely low, where urosepsis in diabetic patients has been associated with severe endophthalmitis, with Klebsiella being the most frequently isolated organism.2,4 The most frequent symptom is vision loss (89%), followed by ocular pain (48%) and fever (37%). Treatment should be started without a positive culture, since intraocular infection by gram-negative bacteria is rapid and aggressive, where the most commonly used antibiotics are vancomycin + ceftazidime; one of the important limitations in the treatment of this pathology is related to the fact that the vitreous body and aqueous humor are barriers to the spread of a significant number of antibiotics.

Conclusion

Endogenous endophthalmitis is considered an ocular or extraocular disease in which in most cases little attention is given to the intimate relationship between systemic and ocular disease, leading to a delay in diagnosis and treatment, the latter being surgical given the time of diagnosis and complications presented secondary to the delay in diagnosis, so suspicion is essential to give timely treatment and avoid its devastating complication which is ocular evisceration. We consider the importance of this clinical case because there are few reported cases as it is a rare pathology leading us to first take as a final diagnosis its probable differentials and thus opt for an inadequate therapy predisposing to complications.

Conflicts of interests

We declare no potential conflicts of interest of any of the authors in this scientific report.

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