Short communication

Neurotrophic corneal ulcer in an HIV patient☆

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ABSTRACT

Case report: We present the case of a 29 year-old man who came to the Emergency Department due to pain in the right eye. There was demonstrated a complete corneal de-epithelialisation. There was no clinical improvement after appropriate treatment, which was complicated by migraine and vomiting. The computerized tomography (CT) scan showed images suggestive of cerebral toxoplasmosis. After the complete tarsorrhaphy a restitution ad integrum was observed.

Conclusion: The diagnosis of a neurotrophic corneal ulcer due to an affected trigeminal nerve in the context of a cerebral toxoplasmosis, tarsorrhaphy is an effective procedure to take in account in corneal epithelial defects resistant to other treatments.

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Úlcera corneal neurotrófica en paciente con VIH

RESUMEN

Caso clínico: Se presenta el caso de un varón 29 años acude a Urgencias de oftalmología por dolor en ojo derecho. Se evidenció una desepitelización corneal completa. Tras un tratamiento adecuado no se evidenció mejoría clínica, complicándose el cuadro con cefalea y vómitos. la tomografía axial computarizada (TAC) evidenció imágenes sugestivas de toxoplasmosis cerebral. Tras la tarsorrhaphia completa se observó una restauración ad integrum del cuadro.

Conclusión: Ante el diagnóstico de una úlcera corneal neurotrófica por afectación del trigémino en el contexto de toxoplasmosis cerebral, la tarsorrhaphy es un procedimiento eficaz a tener en cuenta ante defectos epiteliales corneales resistentes a otros tratamientos.

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Introduction

Neurotrophic ulcers consist of a degenerative corneal condition caused by any noxa that affects corneal sensitivity. The absence of corneal sensitive trophic effects entails the impossibility of corneal healing which associates an epithelial defect, ulceration and even perforation.

Tarsorrhaphy is a simple, efficient and safe procedure for managing various ocular surface conditions such as neurotrophic ulcers due to the involvement of the trigeminal nerve, facial paralysis, lagophthalmos among others, carried out in isolation or in combination with other ocular plastic surgical techniques.

Clinical case

African male, 29, who visits the ophthalmological emergency section due to pain and diminished vision in the right eye (RE). The exploration revealed a visual acuity (VA) of finger counting at 3 m in RE which did not improve with the stenopeic hole, and of 1 in the left eye (LE).

In the anterior biomicroscopy a ciliary injection was observed with complete corneal de-epithelization, stromal edema and folds in Descemet membrane (fig. 1), with the rest of the ophthalmological exploration being normal. It was decided to initiate an occlusive treatment with cycloplegic eyedrops comprising antibiotics. Two days later, apart from not evidencing improvement in the ocular condition, the patient associated holocranial headache and vomiting. It was decided to maintain the ophthalmological treatment and to refer the patient to the internal medicine emergencies for a full assessment. After a systemic exploration, diminished facial sensitivity was evidenced in the fourth branch of the trigeminal, with corneal anesthesia. A computerized axial tomography (CAT) was taken which evidenced triventricular hydrocephalia, with two hypodense areas being observed in the right cerebellum hemisphere and temporal lobe (fig. 2), compatible with edema areas. Internal medicine established antitoxoplasmic oral treatment together with ganciclovir. The magnetic resonance imaging (RMI) with contrast evidenced several space-occupying lesions in the right and left cerebellum hemispheres, in the temporal lobe and the frontal operculum of the left islet surrounded by edema (fig. 3) suggesting cerebral toxoplasmosis. The lumbar puncture yielded normal results. In an additional anamnesis, the patient referred he was HIV-positive for 2 years due to a high risk sexual relationship. He did not refer consuming...
The most frequent etiology of the clinical condition known as corneal anesthesia is the infection of the corneal surface by Herpes Simplex and Herpes Zoster. It is known that corneal sensitive nerves play a crucial role in maintaining the anatomic and functional integrity of the cornea and its epithelium, even though the exact mechanism is yet not fully determined. It is known that the damage of these nerves causes a reduction in metabolism and mitosis of epithelial cells together with an increase of their permeability. The corneal epithelium proliferation is probably regulated by a two-way control, i.e., sensitive neuromediators that promote mitosis in epithelial cells and sympathetic mediators that reduce them. As a result of this neurologic disruption, in neurotrophic ulcers the epithelium defect persists and therefore cannot heal. However, if the ocular surface is protected from the environment with therapeutic contact lenses or tarsorrhaphy, the ulcer almost always heals.

It must be noted that heroine addicts can evidence false corneal neurotrophic ulcers either to direct inoculation of heroine in their eyes as a result of manipulating or inhaling it, which can be difficult to diagnose.

The neurological complications of the human immunodeficiency syndrome (AIDS) are frequently symptoms of opportunistic infections of the central nervous system (CNS), as in this case toxoplasmosis. The reactivation of the latent infection occurs in patients having their immune system compromised, mainly causing meningoencephalitis, but it can also cause a condition of polyradiculoneuritis and miositis. Similarly, cerebral toxoplasmosis is the most frequent cause of space-occupying lesions in AIDS patients (typically in advanced stages or in patients with less than 200 lymphocytes CD4+/μl) characterized by being lesions with mass effect, affecting the basal ganglions. The definitive diagnosis requires brain biopsy which, due to its high morbidity, is reserved only for cases that do not improve with empirical treatment. This clinical condition is more frequent with lower lymphocyte T CD4+/μl counts. In clinical practice, the diagnostic and treatment for cerebral toxoplasmosis are initially presumptive, based on clinic and radiological findings.

The determination of IgM and IgG positive antibodies at the plasma level established the definitive diagnostic of this disease even when this serology is negative at the level of the cerebrospinal fluid because up to one third of cerebral toxoplasmosis patients exhibit repeated negative IgG in the lumbar puncture. However, it must be noted that with these patients we must take into account the differential diagnosis with other diseases affecting the central nervous system such as progressive multifocal leucoencephalopathy, criptococcic meningoencephalitis and malign cerebral lymphoma.

The «HAART» antiretroviral therapy has demonstrated improvements in the efficacy of anti-toxoplasma drugs through our recovery of the immune system, in addition to reducing mortality in HIV-positive patients.

In cases involving neurotrophic corneal ulcers the treatment of the epithelial defects must be established as soon as possible in order to prevent its progression to corneal perforation and the sequels this produces. It must be remembered that, in these cases of severe corneal anesthesia, penetrating keratoplasty exhibits poor results, even after a...
corneal transplant. Thus, the therapeutic alternatives consist in occlusion with patches, placement of contact lenses, botulin toxin injection in the upper eyelid elevator, translocation of a conjunctival flap to the cornea, amniotic membrane transplants and, in the failure of these techniques, the last option to be considered is either temporary or permanent tarsorrhaphy.

In our case, due to the brief period of action exhibited in this patient at the corneal level surface, the amniotic membrane transplant was not utilized. However, as a result of the torpid evolution of corneal de-epithelization which resisted different conservative treatments, it was decided to form a permanent tarsorrhaphy of the 2 external thirds, previously separating the anterior and posterior lamellae of both eyelids to join them together, adding cycloplegic and antibiotic eyedrops and achieving adequate corneal epithelization.

We would like to emphasize the need of establishing this type of treatment if conservative therapeutic efforts fail in these conditions.

Conflict of interest

None of the authors have declared any conflict of interest.

References