Short communication

Fungal keratitis caused by Colletotrichum spp. A presentation of case

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ABSTRACT

Case report: A 23-year-old male with an unremarkable past medical history suffered an injury in the right eye two days prior to presentation due to a freak accident with a branch of a lemon tree. The slit-lamp examination showed a central corneal erosion with a white tree-shaped stromal infiltrate and Tyndall +/++ in anterior chamber. Cultivation of corneal scraping was positive for Colletotrichum spp. The patient responded favorably to topical amphotericin.

Discussion: Colletotrichum spp. is an uncommon cause of keratitis, usually secondary to corneal erosion caused by plant material and should be included in the differential diagnosis of fungal keratitis.

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Queratitis fúngica por Colletotrichum spp. A propósito de un caso

R E S U M E N

Caso clínico: Paciente varón de 23 años sin antecedentes personales de interés que acude por traumatismo con rama de limonero en ojo derecho hacía dos días. En la biomicroscopia se observaba una erosión corneal central, un infiltrado estromal arboriforme blanquecino y un tyndall +/++. El cultivo de raspado corneal fue positivo para Colletotrichum spp. El paciente respondió favorablemente a la anfotericina tópica.

Discusión: Colletotrichum spp. constituye una causa infrecuente de queratitis, secundaria generalmente a erosiones ocasionadas por productos de origen vegetal y debe ser incluido en el diagnóstico diferencial de las queratitis fúngicas.

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Introduction

The cornea can be affected by any species of fungus. Over 100 fungi have been identified as causing fungal keratitis (FK).\(^1\) This disease is more frequent in tropical countries but is rare in cool and cold climates, even though in recent years FK has increased due to technical diagnostic developments as well as increased incidence.\(^2\)

The risk factors for FK are diverse\(^3\): chronic ocular surface disease, contact lenses, atopic disease, use of topical steroids, corneal surgery and diabetes mellitus among others, although in most cases ocular trauma is a part of the patient history.\(^2\)

The main pathogens causing FK are yeasts such as Candida\(^2,3\) and filamented septated non-pigmented fungi such as Fusarium and Aspergillus\(^2,3\).

The authors present an FK case caused by an unusual fungal species in ophthalmology such as Colletotrichum spp. Colletotrichum is a filamented septated and pigmented fungi, which parasites subtropical and tropical plants and is difficult to identify with culturing.\(^4\) It can be observed under microscope with its characteristic canoe-shaped form.\(^4\)

Clinical case

Male, 23, without relevant personal history who visited the emergency section due to right eye (RE) traumatism caused by a lemon tree branch 48 h earlier.

Ophthalmological examination revealed visual acuity of one in both eyes. RE biomicroscopy showed moderate conjunctival hyperemia and upper temporal corneal erosion with whitish and arborescent stromal infiltrate, the central area of which stained under fluorescein. The anterior chamber exhibited a Tyndall of ++ (Figs. 1 and 2).

Corneal sample was taken for culturing and Gram staining, while establishing treatment with broad spectrum and reinforced antibiotics: vancomycin 25 mg/ml and ceftazidime 50 mg/ml, alternating every hour.

The following day, the Gram staining showed the pathogen organism as gram-positive. Agar Sabouraud culture exhibited fungi growth after 72 h.

With said results at hand, topical treatment was established with amphotericin B at a concentration of 0.5 mg/ml every 4 h without respecting sleep, as well as tobramycin every 3 h.

One week after obtaining the sample and having the confirmation of fungal keratitis, our laboratory sent the sample to the National Microbiology Center (Carlos III Health Institute in Majadahonda), which returned the results of minimum inhibiting concentrations determination: 5-fluorocytosine (128 μg/ml), amphotericin B (0.5 μg/ml) and itraconazole (1 μg/ml). Upon exhibiting sensitivity to amphotericin B, the same treatment pattern was maintained.

Three weeks later, biomicroscopy revealed slight conjunctival hyperemia with increasingly transparent and smaller corneal infiltrates. Due to this positive evolution, amphotericin B was reduced to one drop every 6 h, respecting sleep, and progressively reducing the treatment in the course of 6 more weeks up to suspension. Slit lamp exploration revealed upper temporal corneal leukoma, a vestige of the former disorder (Figs. 1 and 2).

Three months after disorder onset, the pathogen was identified as Colletotrichum spp. by the Carlos III Health Institute.

Discussion

Colletotrichum is an infrequent cause of FK. Out of 125 FK cases diagnosed in the Bascom Palmer Institute in Florida in 1994, only one case (0.8%) was found to be caused by Colletotrichum atramentum.\(^3\) Subsequently, another review covering the period from January 1990 to February 2001\(^4\) in the same institution identified 10 cases of Colletotrichum (2.8%) out of 360 positive cultures for fungi, isolating Gloeosporioides and Dematium.\(^5\)

FK caused by filamented fungi such as Colletotrichum are more frequent in tropical regions\(^6\) and in most cases affected normal eyes after corneal abrasion caused by some type of vegetal substance\(^6\). These keratitis are generally central or paracentral with irregular, seesaw or arborescent edges accompanied by anterior stromal infiltrate. Occasionally, brown pigmentation appears in the ulcer substrate. The evolution of keratitis caused by Colletotrichum is slowly progressive in comparison with Aspergillus and Fusarium. For its identification by culturing, the most frequently used media are Sabouraud dextrose agar (SDA), potato dextrose agar (PDA) and moderate yeast agar, and the optimum growth temperature is of 25 °C, characterized by the formation of conidia with appressorium and acervulum with mushrooms.
The cases reported herein represents the first reported positive culturing of *Colletotrichum* in our country. Even though our patient evolved positively with antifungal pharmacological treatments, in a high percentage of cases FK exhibits torpid evolution affecting visual acuity. Accordingly, early identification and immediate treatment is crucial for avoiding complications such as corneal perforation and endophthalmitis which would require surgical intervention.

Despite the absence of consensus regarding the pharmacological treatment of FK, it has been determined in vitro that *Colletotrichum* has greater sensitivity to clotrimazole followed by miconazole, lactones and amphotericin B. As in this case, other authors have found that *Colletotrichum* is mainly sensitive to amphotericin B and also responds to natamycin.

Even though *Colletotrichum* continues to be a rare cause of FK, the authors believe that due to its potential severity it must be included in differential diagnostic for fungal corneal infections.

**Conflict of interests**

No conflict of interests has been declared by the authors.

**References**