Case Report:
Fungal Keratitis Caused by Aspergillus Species

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Abstract

Background: Fungal keratitis (keratomycosis) is the inflammation of the eye’s cornea that results from fungal infection.

Case Report: A 29-yrs-old female patient who wears contact lenses presented with ocular pain, redness and blurred vision. Following failures with previous antibacterial topical treatment, a corneal scraping was sent to the mycology laboratory. Fungal elements have been demonstrated on stained microscopic slide. Subsequently, topical antifungal voriconazole (1%) was administered. The patient started improvement within 2 hours and recovered completely within 48 hours.

Conclusion: Mycological examination is recommended in suspected fungal cases and in ophthalmic cases which did not respond to routine antibacterial chemotherapy.


Introduction

KERATOMYCOSIS (fungal keratitis), caused by species of the hyphomycetes mold Aspergillus, is not uncommon. The first case of fungal keratitis was reported to be caused by Aspergillus in a farmer who was struck in the eye by oat chaff [1].

Aspergillus keratitis is an important ophthalmological problem worldwide, but especially in outdoor workers in agricultural communities in the developing world and in tropical and subtropical areas, where it frequently occurs following traumatic inoculation of Aspergillus conidia into the cornea through injury [2,3].

Aspergillus species were found to be the second commonest fungal isolates after Fusarium species [2]. In recent years, Aspergillus keratitis has been reported to occur following ocular surgical procedures, such as radial keratotomy, laser-assisted in situ keratomileusis and keratoplasty [4] as well as wearing contact lenses [5].

Case Report

A 29-years-old female patient presented to the clinic with ocular pain, redness and blurred vision. The patient was wearing contact lenses. The patient stated that she received topical antibiotics (vigamox) and lubricants. A topical steroid (tobradex) was also used but no improvement was noticed. The patient was subjected to slit lamp examination which showed a corneal infiltrate feathery border Fig. (1).

Subsequent to the contrition of the patient and absence of improvement with steroids and the antibacterial topical treatment, a corneal scraping was sent to the mycology laboratory. Fungal elements, namely hyaline hyphae and aspergillum conidia have been demonstrated on a Gram-stained scraped material Fig. (2).

Subsequently, topical antifungal voriconazole (1%) was administered. The patient showed improvement within 2 hours and was recovered completely with 48 hours.

Discussion

Fungal species belonging to Fusarium, Aspergillus, Candida, dematiaceous fungi, and Scedosporium are frequent causes of infections to the cornea, orbit and other ocular structures [4]. Diagnosis is often achieved by the presence of the typical clinical features. Laboratory diagnosis, or confirmation of diagnosis, is assisted by microscopic detection of fungal elements in scraping, biopsies or other samples. Usually, the culture approves the diagnosis...
and sometimes histopathological, immunohistochemical, or DNA-based assays can be applied [2,4]. Following establishment of diagnosis, antifungal treatment is started; amphotericin B is one of the preferred agents for treating serious ophthalmic mycoses [6].

In the present case, topical antifungal voriconazole (1%) was successful in treatment of the infection. The patient improved within very few hours and was recovered completely within two days.

This finding supports the results of other studies reporting that voriconazole is an effective medicine for managing fungal keratitis [7-9].

Infections of the cornea due to filamentous fungi are a frequent cause of corneal damage in developing countries in the tropics and are usually difficult to treat. Microscopy is an essential tool for the diagnosis of these infections. Knowledge of the local etiology within a region is of value in the management of suppurrative keratitis in the event that microscopy cannot be performed [4].

The present case was diagnosed on the basis of clinical and microscopic findings. We therefore, recommend a mycological examination in suspected fungal cases for rapid diagnosis and management. Such approach is also required in ophthalmic cases which did not respond to routine antibacterial chemotherapy.

References

5- EDDY M.T., STEINBERG J., RICHARD G. and HASSENG-STRAH.

Fig. (1): Fungal keratitis caused by Aspergillus species in a 29-years-old female patient presented with redness, blurred vision and a corneal infiltrate feathery border.

Fig. (2): Corneal scrapingmaterial of a 29-years-old female patient with keratitis, showing hyaline hyphae (A) and a conidial head (B), characteristic for Aspergillus species.
الملخص العربي

إن التهاب القرنية القطرى هو إصابات في القرنية العين بالأحتقان نتيجة للعوامل والأغصان والشققات. حضرت لعملية صيدلة عمرها 39 سنة تستخدم العدسات اللاصقة وكانت تعاني من ألم بالعين وإجبارها وعدم وضوح في الرؤية. وتبين لنا عدم فعالية استخدام بعض المضادات الحيوية الموضعية سابقاً. وعلى الرغم، تم إشارة إلى أن هناك كثرة القرنية وإرسالها لمعالجة الفطر. وبعد الفحص والصبر، تحت الميكروسكوب، شوهدت كائنات فطرية - تبين فيما بعد أن الزراعة أنها من نوع الإسبيرجليس - وبدلاً من ذلك، أظهرت المريض مضادات موضعية فطرية (فورموزانول 1%). تلاه تحسن ملحوظ بعد ساعتين، وشفاء كامل من الأعراض بعد 48 ساعة.

الاستنتاج: يوصي هذا التقرير باستخدام المضادات الحيوية مباشرة في الحالات التي يشتبه بإصابتها بالفطر والحالات التي لا تستجيب للعلاج بالمضادات الحيوية.