Corneal ulcer debridement combined with corneal stromal injection in the treatment of fungal keratitis: a case report

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Fungal keratitis is a common infectious corneal disease. The etiology is often seen in fungal infection secondary to corneal trauma. Characteristics: slow onset and long course of disease. If the pathogenic microorganisms cannot be identified and effective treatment can not be implemented as soon as possible after the onset of the disease, it will bring a lot of harm to the eyes of patients, and even lead to blindness. At present, the main treatment is corneal ulcer debridement and antifungal eye drops. However, due to the characteristics of corneal tissue, antifungal drugs cannot penetrate the cornea, which may lead to prolonged disease duration and poor infection control. At present, thorough debridement of corneal ulcer and injection of antifungal drugs into the corneal stromal layer, combined with antifungal eye drops, have been used to control infection, and significant curative effects have been achieved [1].

Case presentation

1.General Information

The patient, a 35 year old male, was hospitalized for 6 days due to eye pain and blurred vision. Six days ago, small flying insects accidentally flew into the left eye. After rubbing the eyes, they developed left eye grinding, eye pain with blurred vision, without eye swelling, headache, nausea and other discomfort. They visited the local hospital and were given levofloxacin eye drops to the left eye four times a day. Chloramphenicol eye drops + dexamethasone sodium phosphate injection to the left eye four times a day. The ocular irritation symptoms were not significantly alleviated.

2.Examination Information

Naked eye vision: 0.25 in the right eye and 0.1 in the left eye. Slit lamp: mixed congestion of palpebral bulbar conjunctiva in the left eye; The corneal epithelium fell off, white ulcer foci deep into the stromal layer could be seen on the nasal side, pseudopodia could be seen around, edema and turbidity could be seen (Fig. 1), and the anterior segment of the right eye (-). OCT of the anterior segment of the left eye: the corneal epithelium of the left eye is not smooth, strip-shaped hyperreflective signals can be seen between layers, the corneal endothelium is not smooth, and the local cornea is thin (Fig. 2). Fungal smear examination of the left eye: a large number of hyphae and occasional spores were seen under 10%koh and Gram staining microscope. Bacterial smear examination: gram staining: suspected gram positive bacilli are occasionally seen.

3.Diagnosis

Preliminary diagnosis: fungal corneal ulcer in the left eye; Binocular refractive error.

4. Treatment

After admission, the patients were treated with antifungal drugs, and under local infiltration anesthesia, the left eye corneal ulcer debridement + corneal ulcer cauterization + corneal stromal injection (Fig. 2). After surgery, the patients were given voriconazole eye drops and natamycin eye drops once every 1 hour, recombinant bovine basic fibroblast growth factor ophthalmic gel 4 times a day, and antifungal corneal repair treatment.

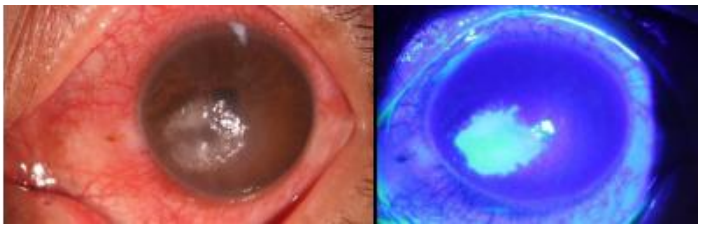

Figure 1 photograph of anterior segment of left eye

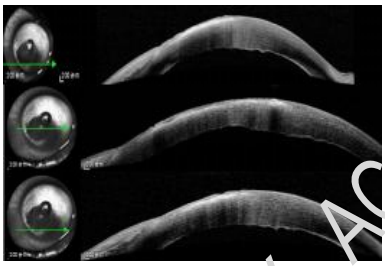

Figure 2 left anterior segment OCT

5. Treatment outcomes, follow-up, and outcomes

On the first day after operation, the conjunctiva of the left eye was congested, the corneal epithelium could be repaired, and gray white lesions could be seen on the nasal side. Left anterior segment OCT: the local cornea of the left eye is thinner, and the surface of corneal epithelial layer is not smooth. According to the ocular recovery, antifungal drugs were gradually reduced, and the patient was discharged after improvement (Fig. 3 and Fig. 4).

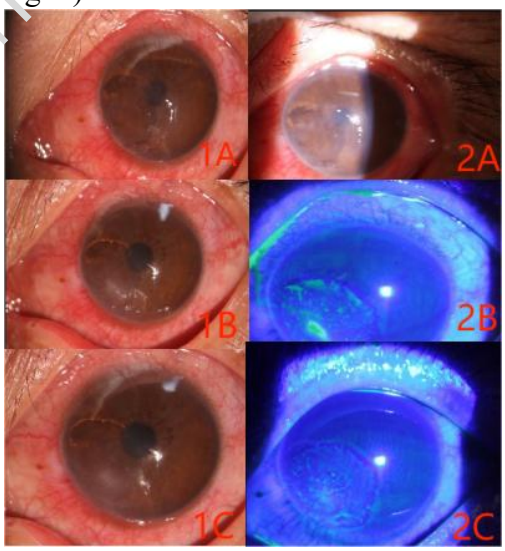

Figure 3 photograph of anterior segment of left eye(1a-2a, postoperative day 1; 1b-2b, postoperative day 4; 1C ~ 2C on the 6th day after operation)

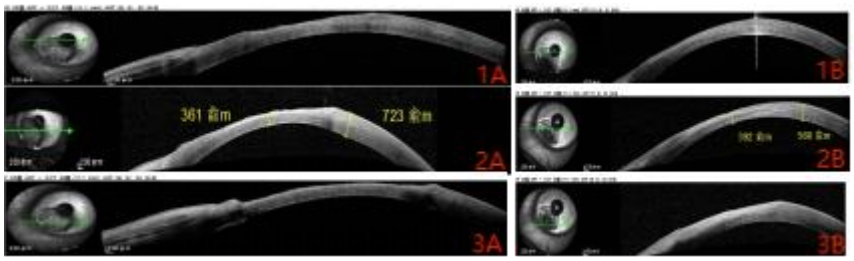

Figure 4 left anterior segment OCT

(1a-3a, 2a-2c, postoperative day 1, postoperative day 6)

Discussion

The diagnosis and treatment of fungal keratitis is to perform direct corneal smear, confocal and other examinations to make a clear diagnosis, so as to avoid the use of hormones without clear pathogenic microorganisms and exacerbate infection. The corneal lesions are mild. Early treatment with thorough debridement of ulcer, iodine cauterization and stromal injection has good curative effect, short course of treatment and little side effects [1-2]. The mechanism of voriconazole injection into the corneal stroma in the treatment of fungal keratitis is to directly act on the lesion, kill fungi, and promote the removal of lesions on the cornea, thus enhancing the therapeutic effect and effectively controlling the development of the disease [3-4]. And because fungi are easy to grow into the deep layer of corneal tissue, and the ocular penetration of antifungal drugs is poor, the corneal ulcer with large area and deep infiltration can be injected twice (3-5 days), which can promote the formation of new wounds in the corneal stromal layer, gradually fill the defect with collagen tissue, make the ulcer heal, and shorten the course of the disease.

References

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