Corneal Ulceration due to Ocular Rosacea

INTRODUCTION

This case demonstrates the importance of a thorough examination of the ocular adnexa in patients with corneal ulceration. Rosacea is a frequent dermatologic condition, with ocular manifestations seen ranging from benign to visually threatening.

CASE DESCRIPTION

Presentation

A 40-year-old male was referred because of an ongoing corneal ulcer. The lesion presented 6 months ago with significant photophobia and peri-ocular pain associated with blurry vision. Because of an ocular herpetic history (self-reported), the primary ophthalmologist diagnosed it as herpetic keratitis. A combination of Valaciclovir 500 mg 3 times daily and Trafloxal drops and ointment brought limited improvement. The patient consulted a second and third ophthalmologist, who also suspected herpetic keratitis, again starting the same treatment. Clinically, a minimal reduction of the infiltrate was seen, however, no complete resolution and symptoms remained, requiring referral to the University Hospital.

Upon presentation, the visual acuity of both eyes was 1.00 without correction (decimal ETDRS score). Slit lamp examination revealed a mild conjunctival injection, a corneal ulcer inferiorly with overlying epithelial defect (1.0h x 2.0b) and strong vascular ingrowth inferior to ulcer, a deep anterior chamber without cells, a normal iris, light-reactive pupil and a clear lens. Initially, herpes was still considered the main causative factor. The current treatment was continued, with the addition of topical Virgan eye ointment 5 times daily.

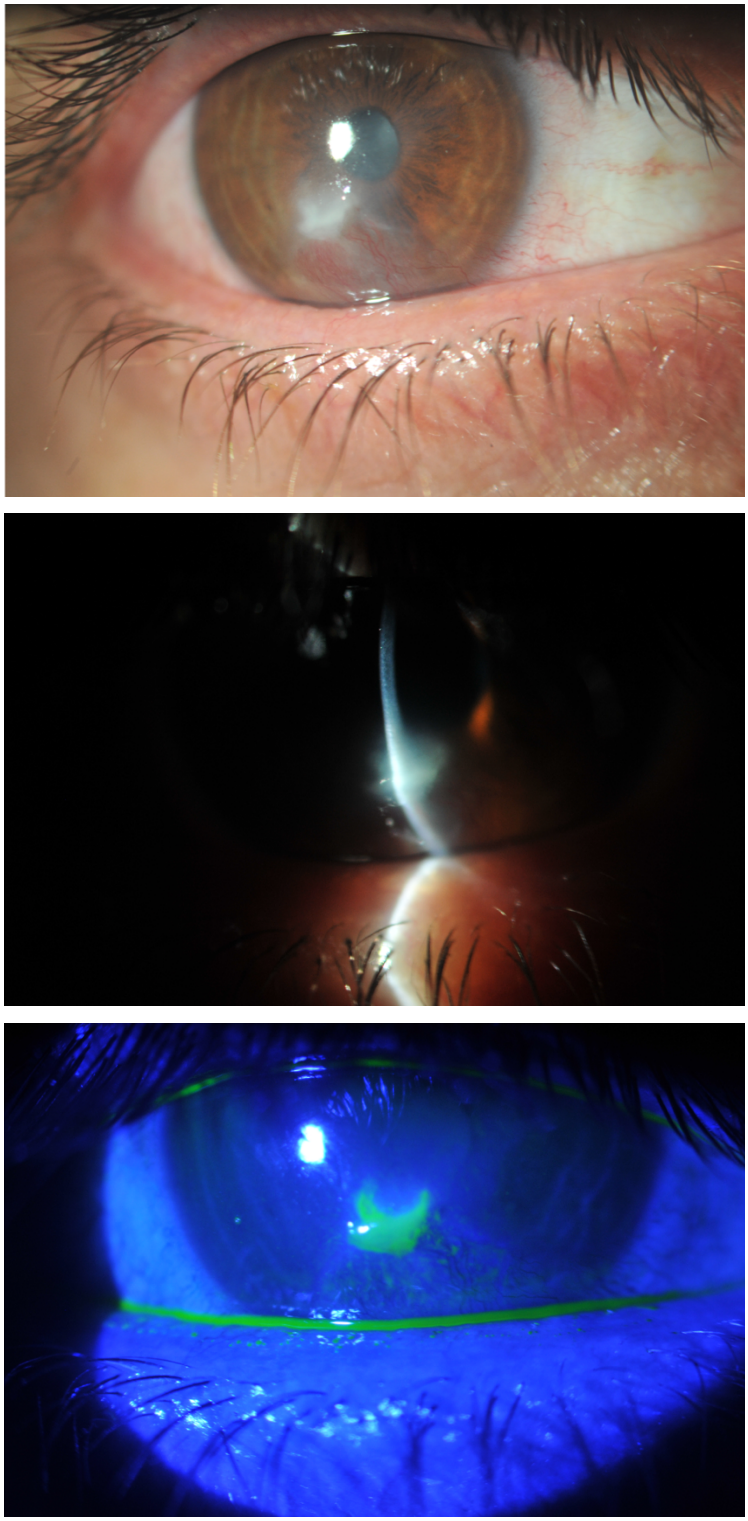


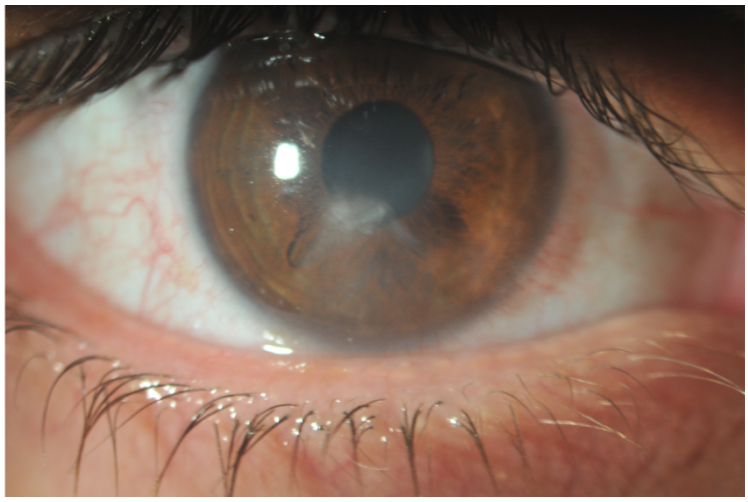
***Figure 1**: Upon Presentation (A) Anterior segment photo showing a corneal ulcer in the inferior cornea with strong vascularization (B) Slit lamp photo with stromal infiltrate (C) Anterior segment photo with cobalt blue light and fluorescein staining of the epithelial defect*

Follow up visit – 1 week later

As only mild improvement was seen 5 days later, the diagnosis was reconsidered. The telangiectasias and blepharitis combined with mild facial erythema and acneiform aspect were considered strong arguments for ocular rosacea. Minocycline 100mg daily, warm compresses, eyelid hygiene and Maxitrol ointment 3 times a day were added to the current treatment of Valaciclovir 500 mg 3x/day and Virgan ointment 3x/day.

Follow up visit – 2 weeks later

A satisfactory result was seen one week after treatment for ocular Rosacea was installed, with relief of symptoms. Slit lamp examination revealed closure of the epithelial defect and disappearance of the corneal vascularization. A mild subepithelial haze was still present.



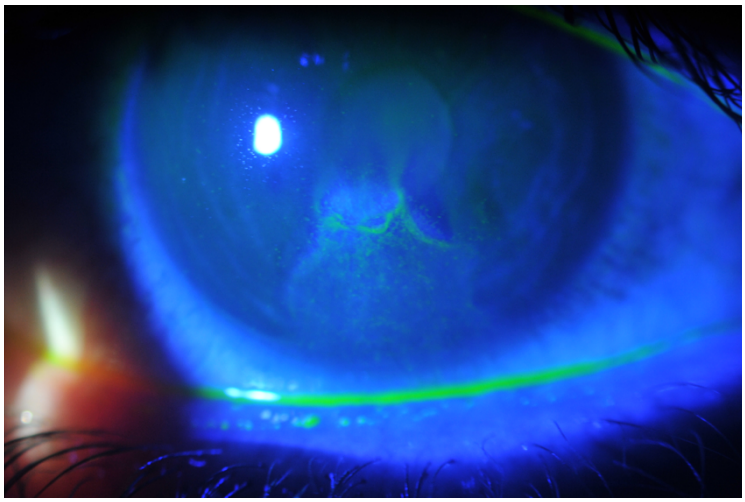


***Figure 2**: One week after treatment for Ocular Rosacea (A) Anterior segment photo showing improvement of the corneal ulcer with a less dense infiltrate without neovascularization (B) Anterior segment photo with cobalt blue light and fluorescein staining of an epithelial closure line*

DISCUSSION

While the most common causes of corneal ulcer are bacterial, viral and fungal, the non response to treatment should always lead to broadening of the differential diagnosis. The patient in this case suffered from an ongoing cornal ulceration for 6 months, and consulted 4 different ophthalmologists in this time. The combination of dermatological features like erythema on an acneiform skin with ophthalmological manifestations like telangiectasia, blepharitis and an ulceration in the inferior cornea with vascularisation were indicative of Rosacea.

Rosacea is a persistent inflammatory dermatological condition with a prevalence of 5,46% in the adult population (1). Major features are (non)transient erythema, telangiectasia, papels and pustules (2). The National Rosacea Society Expert Committee defined 4 subtypes of Rosacea, the fourth and least common being ocular rosacea that can present with or without dermatological features. Ophthalmological abnormalities can be graded from mild to severe, using the ROSCO panel (Table 1)(3). The patient in our case suffered from severe ocular rosacea, with a vision threatening complications of a corneal ulceration.

Severity	**Features**
Mild	Mild blepharitis with lid margin telangiectasia
Mild-to-moderate	Blepharoconjunctivitis
Moderate-to-severe	Blepharokeratoconjunctivitis
Severe	Sclerokeratitis, anterior uveitis

***Table 1**: ROSacea COnsensus (ROSCO) panel(3)*

The pathophysiology of ocular rosacea remains unknown and is most likely multifactorial. Environmental factors such as UV radiation, foods and beverages and emotional or physial stress are mentioned. Micro-organisms are demodex and

helicobacter pylori is found to be associated to rosacea as well. Dysregulation of the immune system has been described, with altered levels of inflammatory markers in the tear film (interleukin-1α and -β, matrix metalloproteinase 8 and 9) and serum level (tumor necrosis factor, intercellular adhesion molecule 1) (2, 4, 5).

CONCLUSION

This case of persistent ocular ulceration in undiagnosed ocular rosacea, indicates the importance of reevaluating the differential diagnosis if adequate response to treatment is lacking. Thorough examination of the eyelids and ocular adnexa are of utmost importance in the work up of ocular surface disease to prevent vision-threatening complications, such as ulceration and perforation of the cornea.

References

1. Gether L, Overgaard LK, Egeberg A, Thyssen JP. Incidence and prevalence of rosacea: a systematic review and meta-analysis. Br J Dermatol. 2018;179(2):282-9.
2. Crawford GH, Pelle MT, James WD. Rosacea: I. Etiology, pathogenesis, and subtype classification. J Am Acad Dermatol. 2004;51(3):327-41; quiz 42-4.
3. Tan J, Almeida LM, Bewley A, Cribier B, Dlova NC, Gallo R, et al. Updating the diagnosis, classification and assessment of rosacea: recommendations from the global ROSacea COnsensus (ROSCO) panel. Br J Dermatol. 2017;176(2):431-8.
4. Awais M, Anwar MI, Iftikhar R, Iqbal Z, Shehzad N, Akbar B. Rosacea - the ophthalmic perspective. Cutan Ocul Toxicol. 2015;34(2):161-6.
5. Oge LK, Muncie HL, Phillips-Savoy AR. Rosacea: Diagnosis and Treatment. Am Fam Physician. 2015;92(3):187-96.