**Additional Contributions:** We thank the patient for granting permission to publish this information.

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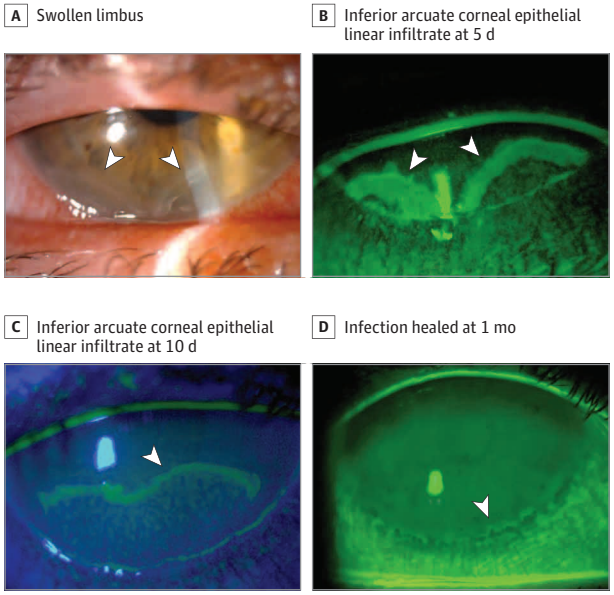
## Severe Corneal Involvement Associated With Mpox Infection

Since April 2022, an outbreak of mpox (formerly monkeypox) has been unfolding. Ocular involvement seems rare[1] with mainly periocular vesicles, blepharitis, and ulcerative conjunctivitis.[1-4] We report 2 cases of severe corneal involvement during mpox infection.

**Report of Cases** | *Case 1.* A 34-year-old immunocompetent man developed vesicles on the penis, perineum, and right eyelid. Results of polymerase chain reaction (PCR) test for mpox was positive. After 3 weeks, he developed unilateral red, painful right eye and was unsuccessfully treated with ofloxacin, 0.3%, and dexamethasone, 0.1%, eye drops 4 times a day and oral valaciclovir 3 g per day. He consulted our department after 5 days. Vision was 20/20 OU. Right eye examination showed inferior lid cutaneous ulceration, hyperemic swollen conjunctiva and inferior limbus, and 2 inferior arcuate epithelial corneal infiltrates that stained with fluorescein (**Figure 1**A and B). Left eye was normal. Corneal PCR test returned positive for mpox. Trifluridine, 1%, eye drops 4 times a day were prescribed and steroids stopped. Patient refused systemic treatment for mpox. After 5 days, the corneal lines had merged and progressed toward the center, leaving a grayish epithelium (Figure 1C). Because of ocular pain, the patient self-administered oral prednisone 30 mg per day for 7 days. The cornea healed after 3 weeks without visible scars but with mild limbal neovascularization and thickening (Figure 1D). Vision remained normal.

*Case 2.* A 30-year-old immunocompetent man was hospitalized in our infectious diseases department with fever, vesicles on the penis and the right eyelids, and a red right eye. Skin mpox PCR test result was positive. Nine days later, he was referred to our ophthalmic department because ocular symptoms worsened with intense pain, photophobia, and mucous discharge in the right eye, despite ganciclovir, 0.15%, eye drops 4 times a day. Vision was 20/25 OD and 20/20 OS. Left eye examination results were normal. Right eye examination disclosed vesicles on both eyelids, major conjunctival inflammation with ulcerations and pseudo membranes, and superior and inferior limbal swelling. Because of the eye, a single intravenous cidofovir infusion (5 mg/kg) was administered and topical dexamethasone, 0.1%, and trifluridine, 1%, 4 times a day were started. Systemic infection was controlled at day 16, but keratitis evolved with inferior and superior arcuate fluorescein positive epithelial lines that migrated from the limbus to the center (**Figure 2**A and B). Corneal mpox PCR test result at day 25 was positive, thus a new infusion of cidofovir and oral tecovirimat 1200 mg per day for 30 days were administered. Topical steroids were stopped but not for long because pain recurred rapidly. Epithelial lines merged inferiorly within 6 weeks (Figure 2C). After 2 months of evolution, ocular infection had resolved, leaving an inferior linear subepithelial corneal scar (Figure 2D), and superior and inferior limbal stem-cell deficiency with corneal neovascularization. Central corneal epithelium was hazy and visual acuity was 20/32.

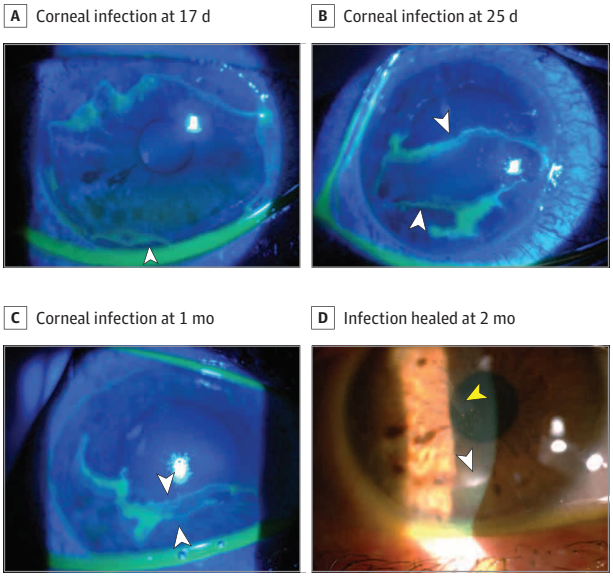
Figure 1. Case 1




Right eye: swollen limbus and inferior arcuate corneal epithelial linear infiltrate (white arrowheads) at 5 days (A and B) and 10 days (C), after beginning of the ocular symptoms. Note the serpiginous centripetal evolution leaving a greyish irregular epithelium behind (A) and the inferior limbus thickening and neovascularization after infection healed at 1 month (D, white arrowhead).

*Discussion.* During the 2022 mpox outbreak, corneal infection seems rare[1] occurring in 2 of 588 patients with mpox (0.3%) at our infectious disease unit between May and October and in 4 of 26577 mpox cases in the US.[3] Only 4 cases have been reported in the literature:1 geographic ulcer,[5] 1 serpiginous linear centripetal keratitis,[6] and 2 undescribed cases.[3] Our cases suggest that arcuate serpiginous centripetal epithelial keratitis, as described by Finamor et al,[6] is specific to mpox. We have not observed such a pattern in other viral diseases. Delayed infection of the cornea may be caused by initial lid margin infection.

Figure 2. Case 2




Right eye: corneal infection progressing from the superior and inferior limbus toward the center with serpiginous arcuate epithelial lines (arrowheads) that migrated centripetally 17 days (A) and 25 days (B) after the beginning of the conjunctivitis and merging at the inferior cornea after 1 month (C). After 2 months (D), the cornea was healed with a white subepithelial scar (white arrowhead), irregular hazy central epithelium (yellow arrowhead), and superior and inferior limbal stem cell deficiency.

Pain was intense and resolved in association with use of corticosteroids. The different treatments (topical trifluridine and steroids, systemic tecovirimat, and cidofovir) did not appear to be associated with evolution of the lesions.

In summary, mpox keratitis is rare but potentially severe. Infection of the eyelids should be monitored because it can spread to the cornea afterwards. Corneal infection is very painful and evolves from the limbus centripetally with a pathognomonic arcuate serpiginous epithelial pattern. The role of antivirals remains to be determined.

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## COMMENT & RESPONSE

### Optical Coherence Tomography Angiography and Corresponding Histology

**To the Editor** Berlin et al[1] provided an interesting correlation between optical coherence tomography angiography (OCTA) of a type 3 macular neovascularization (MNV) and its corresponding histology. Histological findings in neovascular age-related macular degeneration are rarely reported and they could be useful to better understanding MNV pathophysiology. However, we believe that some points in this article need to be clarified.

First, the authors[1] reported that before performing the OCTA imaging, the patient had received 28 intravitreal injections. Could the authors please indicate when the last injection was administered in association with the OCTA acquisition and also in association with the histological analysis? These dates seem potentially important relative to MNV biological activity, since MNV structural morphology may change in response to anti-vascular endothelial growth factor treatment.[2]

Second, the histological examination was performed 16 months after the OCTA imaging and therefore should not necessarily be considered a direct comparison, in contrast to what was stated in the article. It seems likely that the MNV structure visible on OCTA had varied during 16 months, potentially limiting the reliability of the OCTA-histology correlation. Also, the authors did not provide information regarding how many injections were administered during this interval, information that should be highlighted in the study limitations, since this may affect the interpretation of the pathology noted.

Third, the absence of connections between the deep capillary plexus and the choriocapillaris is not necessarily surprising, since these connections are associated with the stage of the disease, as previously described by Sacconi et al.[3] In this study, Sacconi et al[3] reported that in a cohort of treatment-naive eyes with type 3 MNV, all the MNVs showed OCTA detectable flow connecting the deep capillary plexus to the subretinal pigment epithelium space at baseline, while after