

Herpetic stromal keratitis after collagen cross-linking for keratoconus: A unique presentation

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Key words: Collagen cross-linking, corneal fluorescein angiography, deep corneal neovascularization, herpetic stromal keratitis, keratoconus

A 22-year-old male who underwent collagen cross-linking (CXL) in both eyes elsewhere 3 years ago for keratoconus presented with symptomatic blurring of vision and redness in the left eye. On examination, the best-corrected visual acuity (BCVA) was 20/80, N6 in the left eye. Cornea showed a 4 × 3 mm deep corneal neovascularization in an arborizing pattern and stromal edema with feeder vessels from 5 o' clock limbus [Fig. 1]. Corneal sensations were reduced. Anterior segment

Optical Coherence Tomography (AS-OCT) showed hyper reflectivity involving almost full thickness of stroma without the involvement of other corneal layers [Fig. 2a]. Corneal fluorescein angiography (FA) was performed by injecting 5 ml of 10% fluorescein intravenously, which showed an arborizing network of vessels with subsequent leakage [Fig. 3].

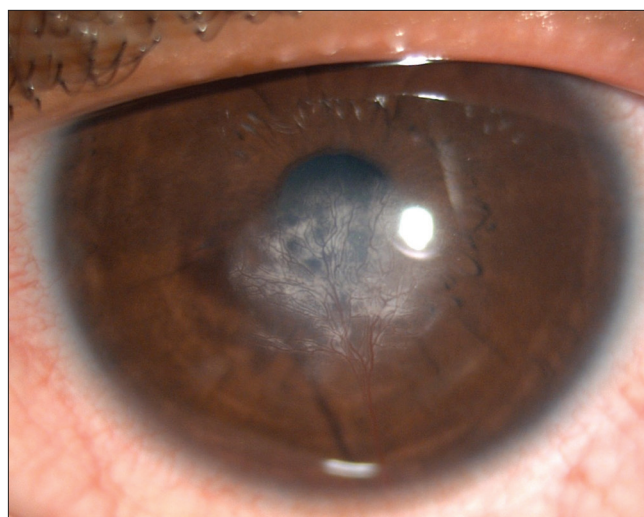


Figure 1: Cornea of left eye showing 4 × 3 mm deep corneal neovascularization with feeder vessels from 5 o'clock limbus

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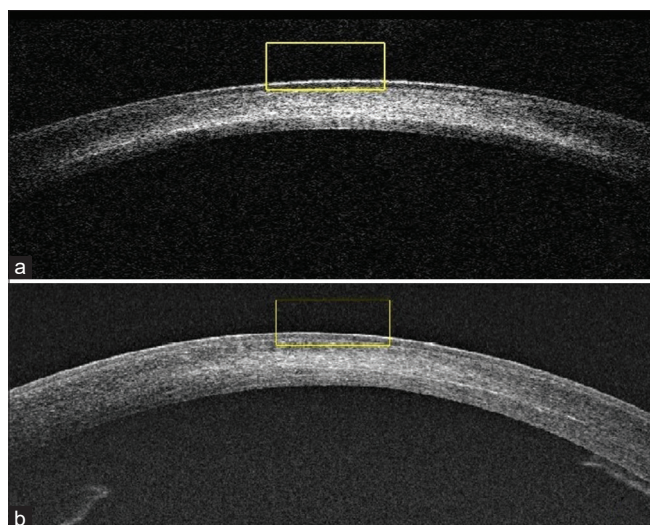


Figure 2: (a) Pre treatment AS-OCT showing the involvement of stroma. (b) Posttreatment AS-OCT showing decreased hyperreflectivity

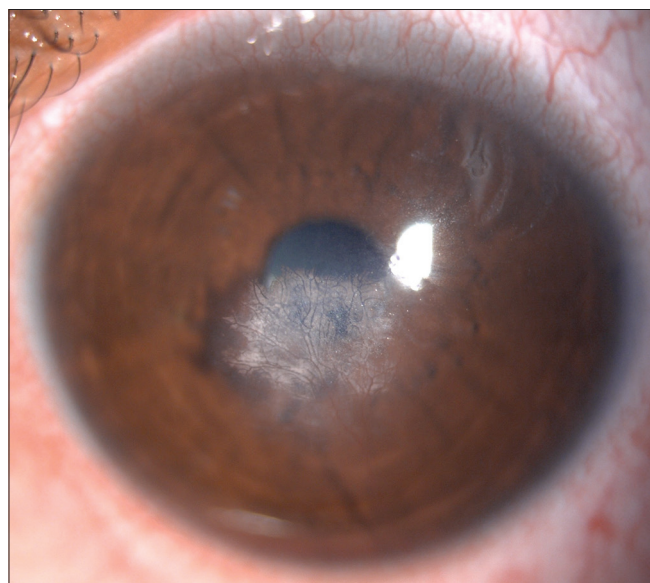


Figure 4: Cornea of left eye showing a decrease in neovascularization with the appearance of ghost vessels and stromal scarring after treatment

A presumptive diagnosis of a chronic herpetic stromal keratitis was made. The patient was treated with oral acyclovir 400 mg twice a day and 0.5% loteprednol eye drops in tapering doses over the course of 6 months. This resulted in a BCVA of 20/40, N6 and patient was symptom-free. On examination, there was a partial regression of neovascularization with development of ghost vessels and stromal scarring [Fig. 4]. AS-OCT demonstrated that the area of hyper reflectivity was reduced as compared to before treatment [Fig. 2b]. Corneal FA showed capillary filling defects, patchy staining, and decreased leakage [Fig. 5].

Corneal collagen cross-linking (CXL) is commonly used in keratoconus to arrest the progression of the ectatic process.^[1]

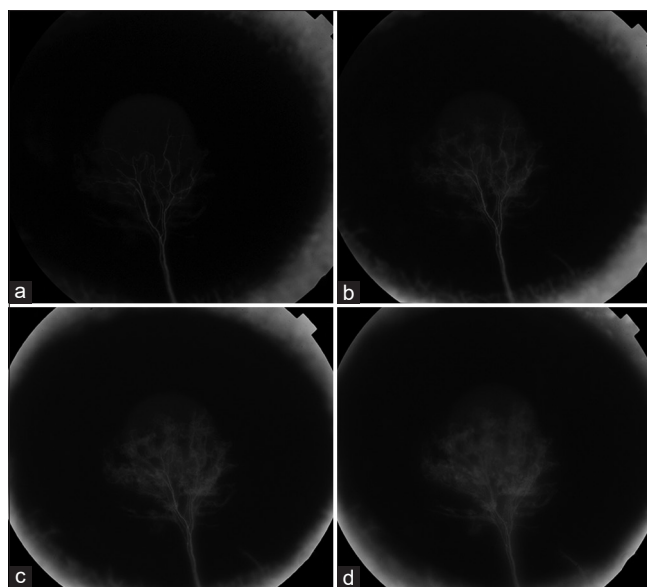


Figure 3: Corneal FA before treatment. (a and b) Early and mid-phase showing arborizing network of vessels. (c and d) Late phase showing leakage from the vessels

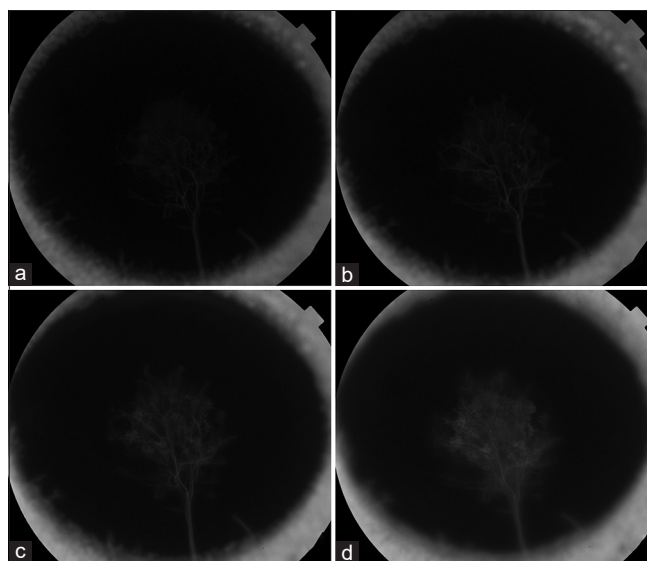


Figure 5: Corneal FA after treatment. (a and b) Early and mid-phase showing a decrease in network of vessels. (c and d) Late phase showing capillary filling defects, patchy staining, and decreased leakage

The mechanism involves an increase in strength and integrity of cornea by polymerization of the stromal fibers with the combined action of riboflavin and UV-A rays.^[1,2] Kymionis *et al.*^[3] and Yuksel *et al.*^[4] reported cases of epithelial viral keratitis after CXL in patients with no previous history of viral keratitis. They postulated that UVA light, epithelial/stromal trauma, or actual damage to corneal nerves during CXL could trigger reactivation of latent Herpes infections. We report a unique case of chronic low-grade herpetic stromal keratitis after CXL with deep stromal neovascularization, which resolved with appropriate therapy.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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