

# Presbyopic Scleral Lens Fitting on a Patient with a History of Herpes Simplex Keratitis (HSK)

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## Background

- 51-year-old white male, occupation sales
- Chief complaint: constant reduction in vision at distance and near worse in left than right eye without glasses
- Ocular, medical history: Herpes Simplex Keratitis in the left eye in 2016, treated with Valacyclovir 500mg PO TID x 10 days, and chronic Herpes Simplex Virus Type 1 treated with Valacyclovir 500mg PO once daily

## Case Description

- Slit Lamp Findings:
  - OD: 0.5mm corneal neovascularization inferior and superior, (-) NaFl staining, (-) dendrites
  - OS: 3mm superior, 0.75mm inferior & nasal corneal neovascularization, 2.5mm stromal scarring centrally at visual axis extending superior nasal, (-) NaFl staining, (-) dendrites
- Manifest Refraction
  - OD: +1.75-0.25 X 055 Add: +2.00
    - DVA: 20/15
    - NVA: 20/20
  - OS: +2.50- 1.25 X 003 Add: +2.00
    - DVA: 20/50-
    - NVA: 20/50
  - Topography by Oculus Pentacam
    - OD: 1D regular astigmatism, 44.40 x 45.40 @ 100.40
    - OS: 7D irregular astigmatism, 41.10 x 48.10 @ 79.30
- Contact lens fitting
  - Visit 1
    - OD: Dailies Total 1 MF trials dispensed
    - OS: OneFit Med diagnostic lens fitting
  - Visit 2
    - OD: Dailies Total 1 MF finalized; good comfort, vision, & fit
    - Trial 1 OS:
      - Good comfort, vision & fit-Onefit Med lens dispensed
  - Visit 3 - Trial 2
    - OS: Adequate clearance and good scleral landing
      - DVA:20/25
      - NVA: 20/60
    - Good vision at distance, poor vision at near, good comfort & fit- will order lens with MF design
      - Lens not dispensed, continue with trial 1
  - Visit 4 - Trial 3
    - OS: Adequate central clearance with nasal limbal touch, good scleral landing
      - DVA:20/25
      - NVA: 20/25
    - Lens not dispensed, new lens ordered with increased limbal clearance
      - Good vision & comfort, poor fit-continue with trial 1
  - Visit 5 - Trial 4
    - OS: Thin central clearance with nasal limbal touch
      - DVA:20/25
      - NVA: 20/25
    - New lens ordered with increased central and limbal clearance
      - Good vision & comfort, poor fit-continue with trial 1
  - Visit 6 - Trial 5
    - OS: Good vision, comfort, and fit
    - Adequate clearance and good scleral landing
      - DVA:20/25
      - NVA: 20/25
    - Lens dispensed
  - Visit 7-Trial 5
    - OS: Good vision, comfort, and fit
    - Adequate clearance and good scleral landing
      - DVA:20/25
      - NVA: 20/25
    - Finalized

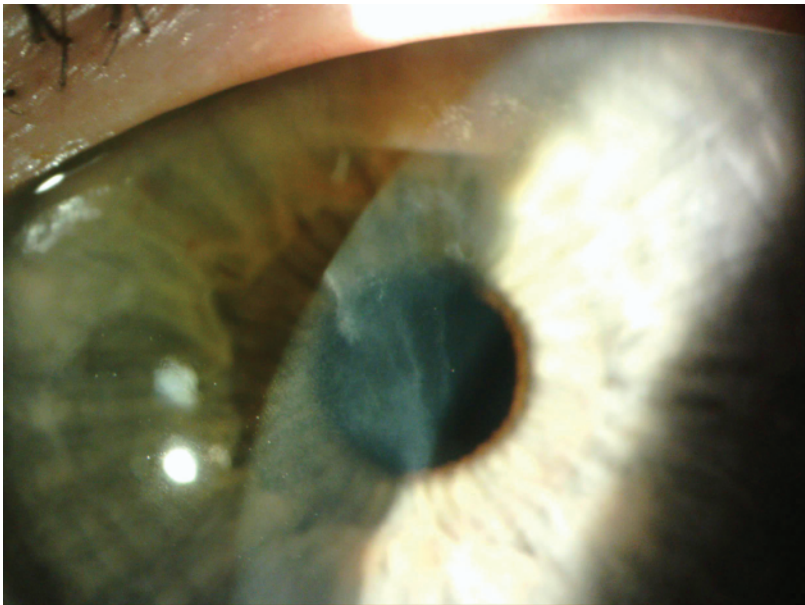


Figure 1: Slit lamp photography showing residual corneal scarring due to HSK

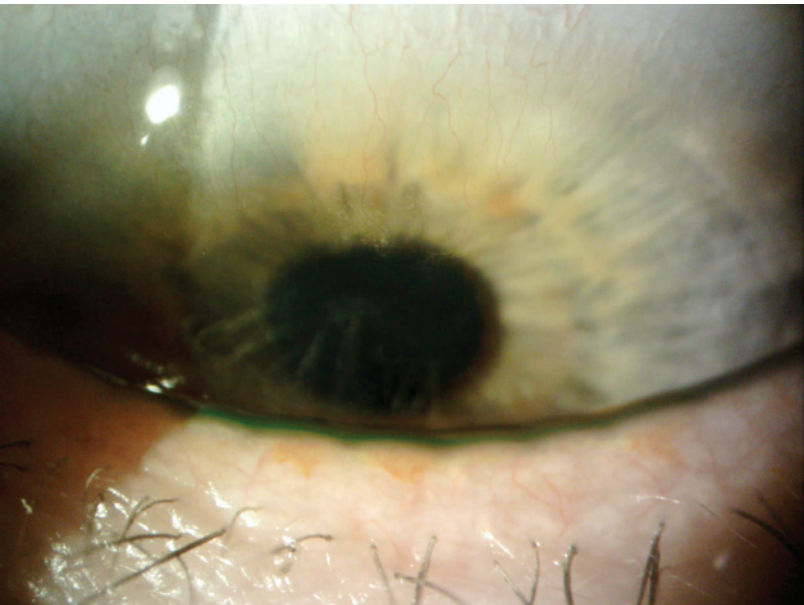


Figure 2: Slit lamp photography showing superior corneal neovascularization

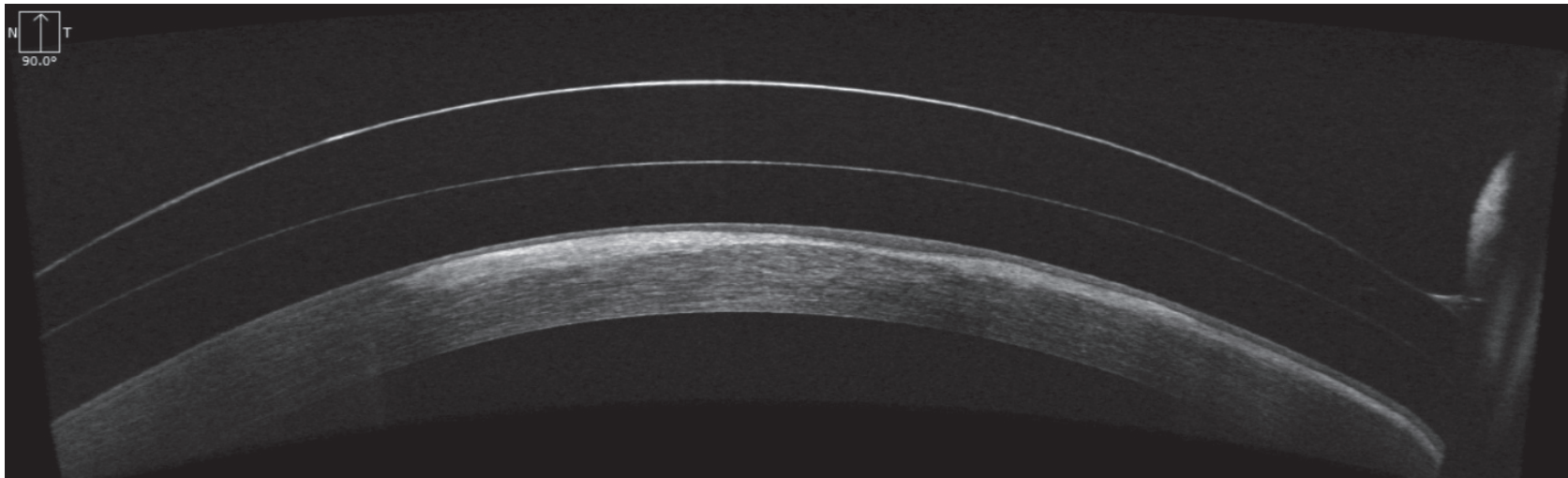


Figure 3: Anterior segment OCT of the left eye showing stromal scarring due to HSK and a final central clearance of 275um after settling.

## Diagnosis & Discussion

- Patient was diagnosed with inactive HSK which resulted in corneal scarring and reduction in BCVA OS
- HSK is caused primarily by the Herpes Simplex Virus (HSV) type 1, a double stranded DNA virus<sup>2</sup>
- HSV type 1 is transmitted by contact with active lesions or by viral shedding through oral secretions<sup>2</sup>
- HSV can cause primary ocular infections including blepharoconjunctivitis and keratitis. In addition, recurrent ocular infections causing epithelial keratitis, interstitial keratitis, necrotizing keratitis, neurotropic keratitis, disciform keratitis or kerato-uveitis
- Most common symptoms include ocular redness, pain, decreased vision, light sensitivity, or foreign body sensation
- Signs of active disease include periorcular vesicles, follicular conjunctivitis, dendritic ulcer, stromal edema, endotheliitis, and uveitis

## Treatment & Management

- Ocular infections caused by HSV are treated with oral or topical anti-viral therapy, corticosteroids or IOP-lowering agents. Treatment varies depending on presentation of disease<sup>2</sup>
- Caution should be taken when prescribing oral anti-virals in immunocompromised patients or those with renal or kidney disease<sup>2</sup>
- Oral acyclovir can be prescribed prophylactically and reduces the rate of recurrence in patients with a history of herpetic stromal disease by 50%<sup>2</sup>
- Patients should be evaluated for re-activation of disease and typical follow-up schedules are between 3-12 months<sup>2</sup>
- Scleral lenses create a smooth refractive surface and may improve vision in patients with a history of corneal scarring<sup>1</sup>
- This patient was placed on prophylactic treatment due to history of stromal disease and successfully fit in a scleral lens for visual enhancement

## Conclusions

- Visual rehabilitation needed for irregular astigmatism due to corneal scarring can be very successful
- With the current diversity in lens options available today, it is beneficial to consider multifocal scleral lens designs for patients with near demands and a history of corneal scarring due to herpes simplex keratitis
- Patients with a history of herpetic disease require close monitoring and follow up for reactivation of disease

## References

1. Bennet, ES, Henry VA. Clinical Manual of Contact Lenses. Lippincott. Williams & Wilkins; 2014.
2. Hill, Geoffrey M., et al. "Herpes Simplex Keratitis." *Disease-a-Month*, vol. 60, no. 6, 2014, pp. 239–246.
3. Kaye, S, and A Choudhary. "Herpes Simplex Keratitis." *Progress in Retinal and Eye Research*, vol. 25, no. 4, 2006, pp. 355–380.