

Microbial Keratitis in Contact Lens Wearers: Three Different Etiologies and Strategies for Safe Return to Lens Wear

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BACKGROUND & OBJECTIVE

Microbial keratitis is a sight-threatening complication of contact lens wear. Evidence-based guidelines on timing and modality for safe return to lens use post-infection remain limited. We present three cases with organism-specific management.

CASE 1

24-year-old male | Monthly silicone hydrogel wearer

Organism: *Pseudomonas aeruginosa* (3 mm central infiltrate)

6 weeks fortified antibiotic therapy required

Central corneal scar persisted

(BCVA: 0.3 logMAR at completion)

Treatment: Fortified topical antibiotics x 6 weeks

Return to lens wear:

Return modality: Daily disposable lenses at 4 months

Final BCVA: 0.15 logMAR

Follow-up (12 mo): Infection-free

Minimum interval before return: 4 months | Strict hygiene counseling provided

CASE 2

29-year-old female | Biweekly lens wearer

Organism: *Staphylococcus aureus* (paracentral)

Resolution within 3 weeks with fluoroquinolone monotherapy

Minimal paracentral scarring (BCVA: 0.0 logMAR)

Treatment: Fluoroquinolone monotherapy x 3 weeks

Return to lens wear:

Return modality: Daily disposable lenses at 3 months

Final BCVA: 0.0 logMAR

Follow-up (12 mo): Infection-free

Minimum interval before return: 3 months | Daily disposables recommended

CASE 3

35-year-old male | Monthly lens wearer

Organism: *Fusarium* (fungal keratitis)

8 weeks natamycin + voriconazole therapy

Dense paracentral scar

(spectacle BCVA: 0.5 logMAR)

Treatment: Natamycin + voriconazole x 8 weeks

Return to lens wear:

Return modality: Scleral lens at 6 months

Final BCVA: 0.2 logMAR

Follow-up (12 mo): Infection-free

Minimum interval before return: 6 months | Scleral lens for irregular surface

RETURN-TO-LENS PROTOCOL

- Bacterial keratitis: minimum 3 months before lens resumption
- Fungal keratitis: minimum 6 months before lens resumption
- Preferred modality: daily disposable lenses for bacterial cases
- Scleral lenses preferred for residual scarring or irregular corneal surface
- Strict hygiene counseling mandatory at all stages of rehabilitation

KEY FINDINGS

Case 1

Pseudomonas

Return at 4 mo

BCVA: 0.15

Case 2

Staph aureus

Return at 3 mo

BCVA: 0.0

Case 3

Fusarium

Return at 6 mo

BCVA: 0.2

All Cases

12 mo

Zero

recurrence

CASE COMPARISON

Parameter	Case 1 <i>Pseudomonas</i>	Case 2 <i>Staph aureus</i>	Case 3 <i>Fusarium</i>
Age / Sex	24 M	29 F	35 M
Lens type	Monthly	Biweekly	Monthly
Tx duration	6 wks	3 wks	8 wks
Scar	Central	Minimal	Dense paracentral
BCVA pre-return	0.3	0.0	0.5
Return interval	4 mo	3 mo	6 mo
Return modality	Daily disp.	Daily disp.	Scleral lens
Final BCVA	0.15	0.0	0.2
12-mo outcome	Infection-free	Infection-free	Infection-free

CONCLUSIONS

- Safe return to contact lens wear after microbial keratitis is feasible with organism-specific timing: 3 months for bacterial and 6 months for fungal keratitis.
- Daily disposable lenses are the safest post-keratitis rehabilitation option for bacterial cases, eliminating lens storage contamination risk.
- Scleral lenses provide superior visual rehabilitation for cases with residual corneal scarring or irregular astigmatism following fungal keratitis.
- All three patients remained infection-free at 12-month follow-up, confirming the safety of a structured return-to-lens protocol.
- Strict hygiene counseling and regular follow-up are essential components of any contact lens rehabilitation program post-infection.

CLINICAL IMPLICATIONS

- 3-month rule for bacterial, 6-month rule for fungal keratitis
- Daily disposables preferred over reusable lenses post-infection
- Scleral lenses for irregular corneas after dense scarring
- Hygiene re-education mandatory before any lens resumption

KEYWORDS

Microbial keratitis
Contact lens
Pseudomonas
Fusarium
Scleral lens
Daily disposable