EDUCATIONAL MOMENTS®

Johnson & Johnson VISION CARE INSTITUTE

How to manage patients with CLPU (Contact Lens Peripheral Ulcer) or CLAIK (Contact Lens Associated Infiltrative Keratitis)

INFLAMMATORY EVENT

WHAT YOU NEED TO KNOW

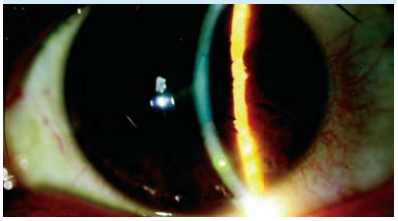
Slit Lamp Viewing:

1. With fluorescein and yellow barrier filter. Optical section to assess depth
2. Medium/high magnification (16 - 25x)
3. Direct focal illumination

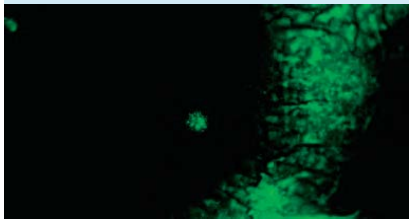
Grading:

Grade 0: None
Grade 1: Trace
Grade 2: Mild
Grade 3: Moderate
Grade 4: Severe
Location: superior, inferior, nasal, temporal
Central or peripheral

Active CLPU

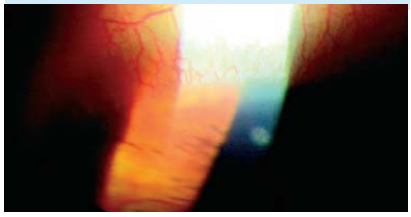


Active CLPU



CLPU scar

CLPU scar



Incidence:

- DW 1 - 5% (SiHs > to hydrogels)
- EW 1 - 13% (hydrogel), 3.3 - 5.4% (SiHs)

Aetiology:

- Inflammatory reaction with focal excavation epithelium, infiltration and necrosis anterior stroma (Bowman's layer intact)
- Inflammatory response to exotoxins from gram positive bacteria (especially Staphylococcus spp)
- Due to: bacterial contamination, hypoxia, closed eye, tight lens, poor hygiene, solution toxicity, denatured lens deposits, mechanical trauma, lid margin disease
- Risk factors: high ametropia (>5D), younger age (15-25 years), case contamination, environmental influences, solution induced corneal staining (SICS)

Symptoms:

- Up to 50% asymptomatic and unaware of complication
- Lens intolerance, foreign body sensation, photophobia, lacrimation, episodes of acute red eye
- Symptoms rapidly reduce after lens removal

Signs:

- Moderate, localised hyperaemia
- Sterile infiltrate usually peripheral/mid-peripheral, small (0.2 - 2.0mm), single focal, circular, stains and diffuse infiltration (in acute phase) (can be multiple, although rare)
- No lid oedema; Anterior chamber reaction if severe

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WHAT YOU NEED TO RECOMMEND TO YOUR PATIENTS

Recommendations:

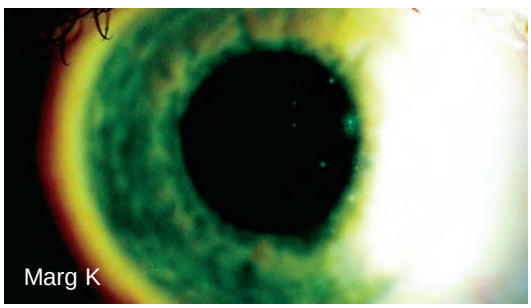
- Close monitoring for 24 hours to ensure differential diagnosis from Microbial Keratitis (if central, >1mm and pain, treat suspiciously)
- Self limiting on removal
- Cease lens wear until epithelium intact over lesion (up to 14 days)
- Ocular lubricants to prevent lid rubbing and dilute bacterial toxins
- Oral analgesics to reduce discomfort
- Severe cases, acute red eye or no resolution with lens removal — refer for prophylactic antibiotic or combo-drug with mild anti-inflammatory (especially if infiltrates on visual axis)
- Eliminate bacterial source — lid hygiene, review hygiene
- Change to DW
- If recurrent, refit with RGP, increase lens replacement frequency, change care system
- If EW, consider limiting to 6 nights at a time
- Case hygiene (including rubbing & tissue wiping)
- For SICS, ensure a rub & rinse step, alter combination of SiH and MPS, switch to non-preserved solution or change to DD lens

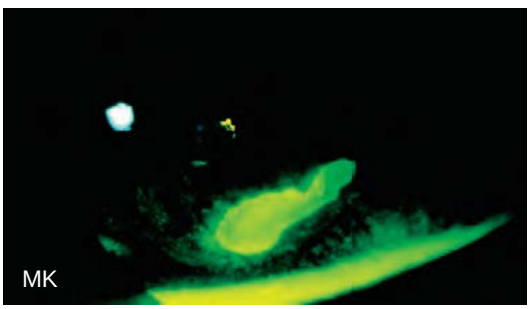
Prognosis:

- Good if visual axis not involved — single, spherical scar often remains, but can fade with time
- Certain subjects prone to recurrent inflammation (10 - 25%) — cease EW

Differential Diagnosis:

Microbial keratitis (MK), marginal keratitis (Marg K), corneal dystrophies, corneal nerves, herpes simplex, stromal scar


Marg K


MK

NOTE: CLPU is also known as sterile corneal ulcer, staining infiltrate, sterile keratitis, sterile infiltrate

HOW TO FIND OUT MORE

- Click here for a general refresher on slit lamp techniques
- Click here to watch our educational video on slit lamp examination using optical section

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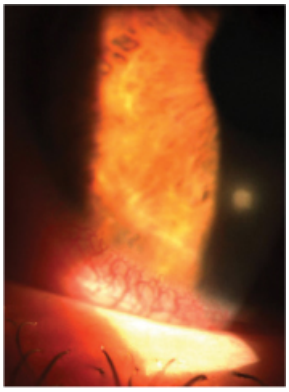
PATIENT CASE STUDY



Patient DR is a 38-year-old car mechanic who has worn hydrogel daily wear lenses, seven days a week for 10 years.

He attends for a check-up for the first time in two years and initially reports no complaints about his lenses. On closer questioning he reveals that his right eye has been sore and red in the past few days. His fingers are stained with nicotine and his hands show signs of poor hygiene, with dirty fingernails. He is uncertain of the name of care solution he uses and no lens case has been brought to the appointment.

Quiz:

1. What grade would you give to this patient's CLPU?

A. Grade 1
B. Grade 2
C. Grade 3
D. Grade 4

2. What sign or symptom of CLPU is especially pertinent to its differential diagnosis?

A. Hyperaemia
B. Mid peripheral/peripheral location
C. Discomfort
D. Lacrimation

3. Which of the following signs and symptoms might determine whether you refer a patient with CLPU?

A. Central location
B. >1mm in diameter
C. Pain
D. All of these

4. Which of the following management options would you be most likely to choose first for this patient?

A. Discontinue lens wear and monitor closely for 24 hours before deciding on management
B. Discontinue lens wear for two weeks before seeing again then decide on management
C. Refer urgently for ophthalmological investigation
D. Refit with DD lenses and advise on hand hygiene

Correct answers:

1: B Grade 2

2: B. CLPU is characterised by sterile infiltrates in a mid peripheral/peripheral location.

3: D. All of these signs and symptoms should be treated suspiciously to ensure differential diagnosis from MK.

4: A. CLPU is often self-limiting on lens removal but close monitoring for 24 hours is needed to exclude MK.

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FURTHER READING/REFERENCES

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