

Therapeutic contact lenses



Disclosures

Clinical Investigator:	Consulting Mandate:
Abbott	Falco Kontaktlinsen
Alcon Vision Care	Haag Streit Diagnostics
Bausch&Lomb	RaayonNova
Contamac	Vistakon (Johnson&Johnson)
Cooper Vision	
Falco Kontaktlinsen	
Haag Streit Diagnostics	
Sensimed AG (Triggerfish)	
Tissot Medical Research	
Vistakon (Johnson&Johnson)	

Learning objectives

- Get to know the main clinical fields of application for therapeutic contact lenses
- Understand, when to consider the different possible contact lens designs, materials and types



Voting 1

- Have you ever used / assisted therapeutic contact lenses before?
 - a) This is my daily business
 - b) Never – wasn't aware of the possibility
 - c) Rarely, only in a few cases a year
 - d) Never – this is way to dangerous

Fundamentals

- Tx contact lenses offers protection of the weak cornea from negativ Influences
 - They accelerate wound healing and support the stabilisation process
 - They offer protection from foreign body sensation and pain
 - They can sometimes be used as a drug carrier



Fundamentals

- Fitting is professionally enriching, sometimes challenging but always satisfying
 - Goal is to over-bridge the weak parts of the cornea
 - Requires empathy and both good ocular knowledge and in the field of contactology
- Interdisciplinary co-management with the treating ophthalmologist is of benefit for both sides

Voting 2

- What kind of contact lenses are suitable for therapeutic reasons?
 - a) Scleral lenses
 - b) Silicon Hydrogels
 - c) High water content (80%) Hydrogels
 - d) Gas permeable (GP) rigid contact lenses
 - e) All of the above

Suitable Materials

- Highly hydrophilic Hydrogel (water 80%)
 - Up to 4 weeks CW approved
 - High drug absorption
 - low oxygen permeability
- Disposable, Silicon-Hydrogel
 - 1-4 weeks CW approved
 - Lower drug absorption due to the low water content
 - high oxygen permeability
 - more surface debris, than with conventional materials

Suitable Materials

- Rigid gas permeable lenses
 - Bridging the affected cornea region (perilimbal contact lenses, scleral lenses)
 - for additional optical rehabilitation in case of irregular astigmatism
- Hybrid Kontaktlinsen
 - Bridging the affected cornea region
 - for additional optical rehabilitation in case of irregular astigmatism, but less parameter available compared to sclerals

Cases from our Portfolio

Dystrophies

Epithelium Basalmembran Dystrophy EBMD

Lattice Dystrophy

Multifactorial Syndrome

Status post congenital Cataract and secondary Glaucoma

Trigeminus Neuralgia

Sicca Syndrom

Infections

Adeno Virus (Kerato-Conjunctivitis Epidemica)

Syphilis

Auto-immun Disease

Lyell Syndrom / Stevens-Johnson Syndrom

Epidermolysis Bullosa EB (Butterfly Children)

Graft vs Host Disease GvHD

Exposition Keratitis

Facialis Paresis

Nocturnal Lagophthalmus

Hyperthyroidism

Status post Trauma

Recurrent Erosion

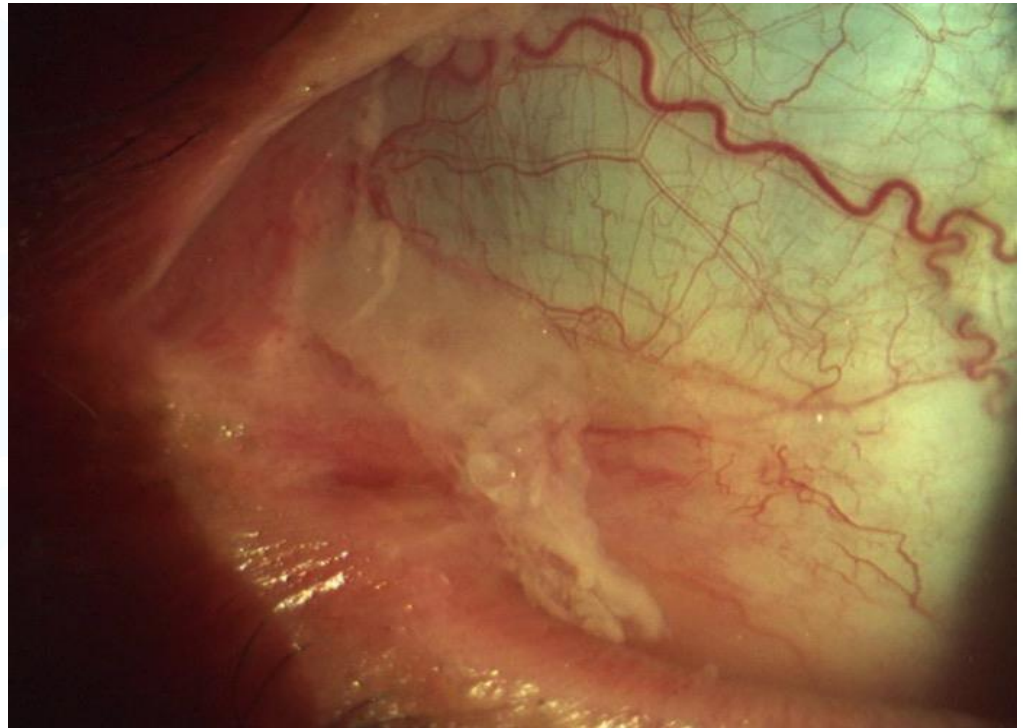
Scarring

Aniridie

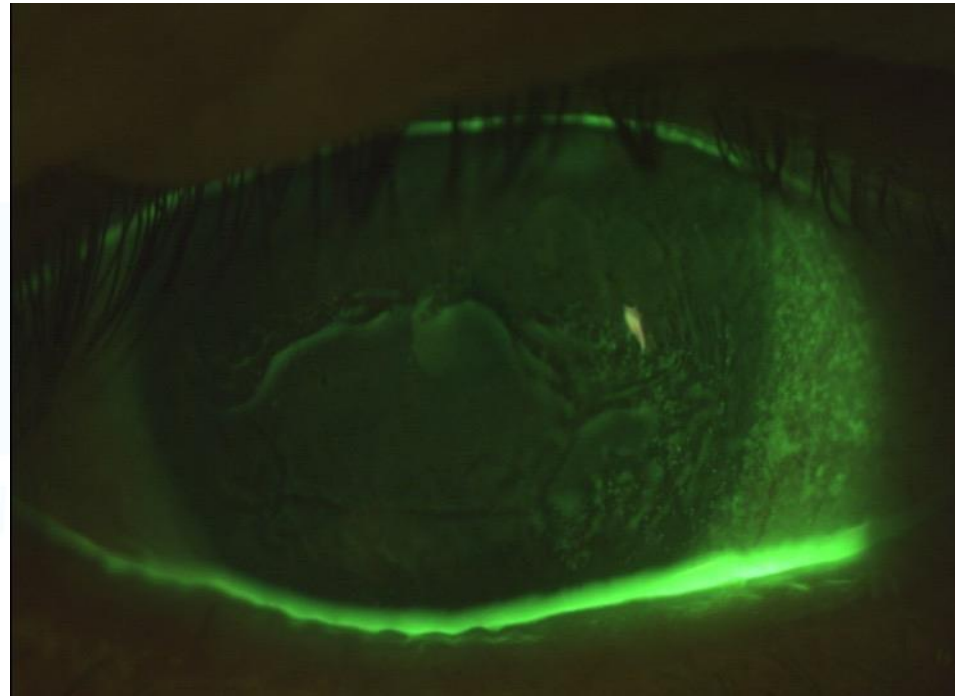
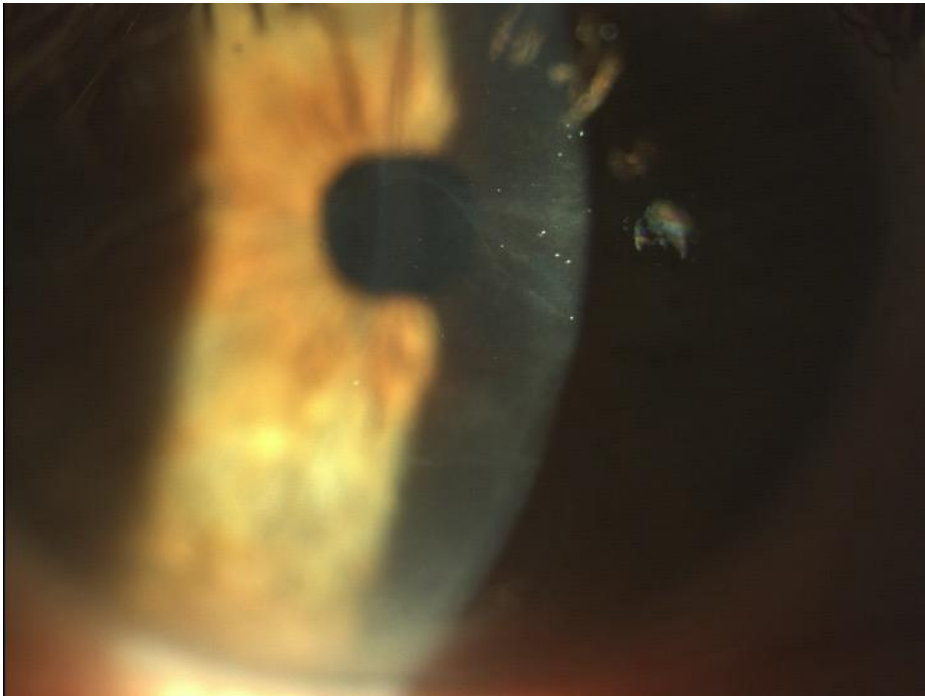
Auto-immun Disease

- Patient MZ, 26, female, caucasian, business woman
- Anamnese
 - Epidermolysis Bullosa - Dystrophica EB (butterfly children)
 - Extreme photophobia and hyperemia OU, frequent pain, visual problems, symblepharon formation
 - Ophthalmologist every 1-2 months (surgery and eyelash epilation)

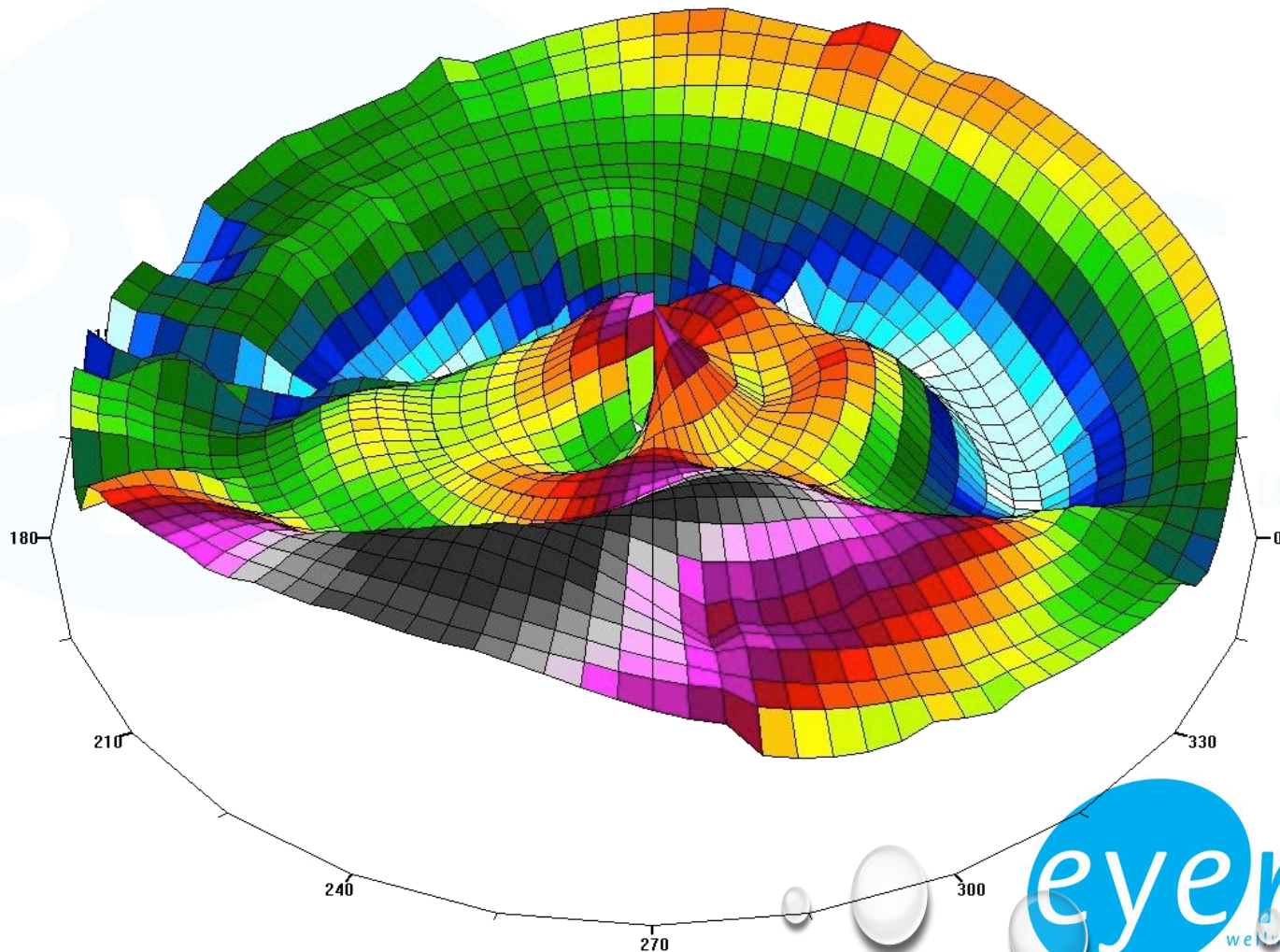
EB – objective findings



EB – objective findings



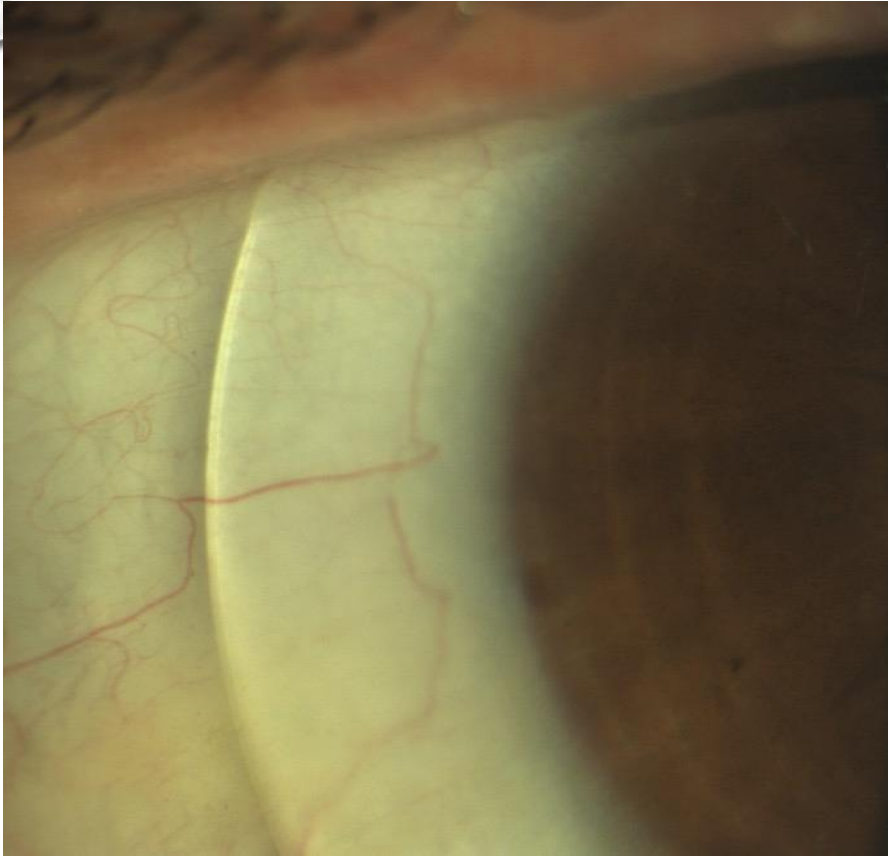
EB – Topography



EB - Plan

- overcome recurrent erosions with therapeutic contact lenses
 - Accelerate wound healing
 - Minimize recurrent erosions
 - slow down symblepharon neoplasm
- contact lenses CW:
 - 2006 – 2012 toric SiHy Senoflicon A 1W CW
 - since 2012 Bitoric Scleral lenses

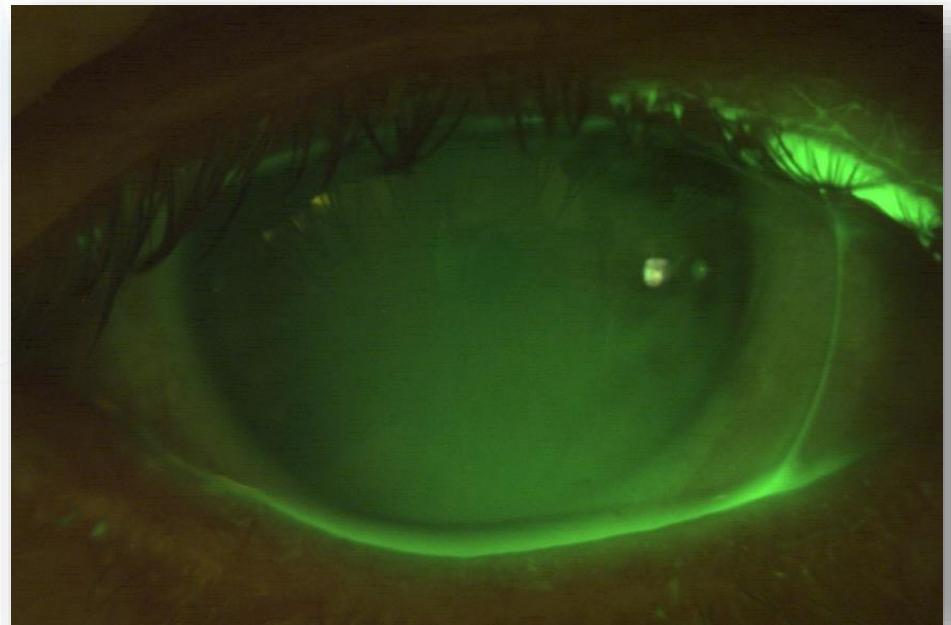
EB - Results



Status after 9 years

EB - Results

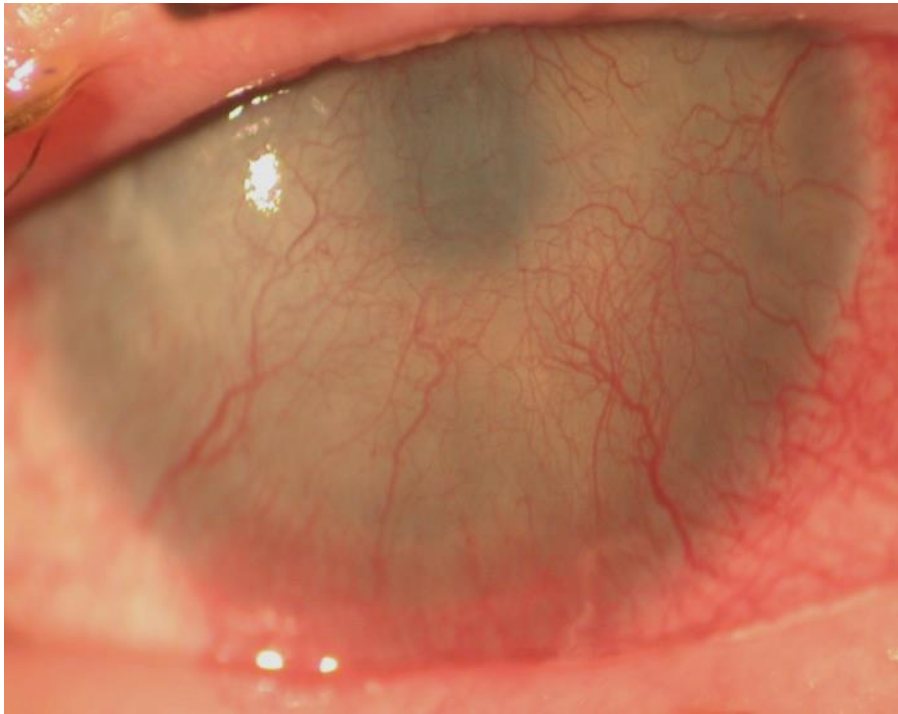
- Only 1x per year nasal symblepharon removal by ophthalmologist
- Eyelashes epilation no more necessary
- No more photophobia or pain
- Vacc 1.00-2 OU



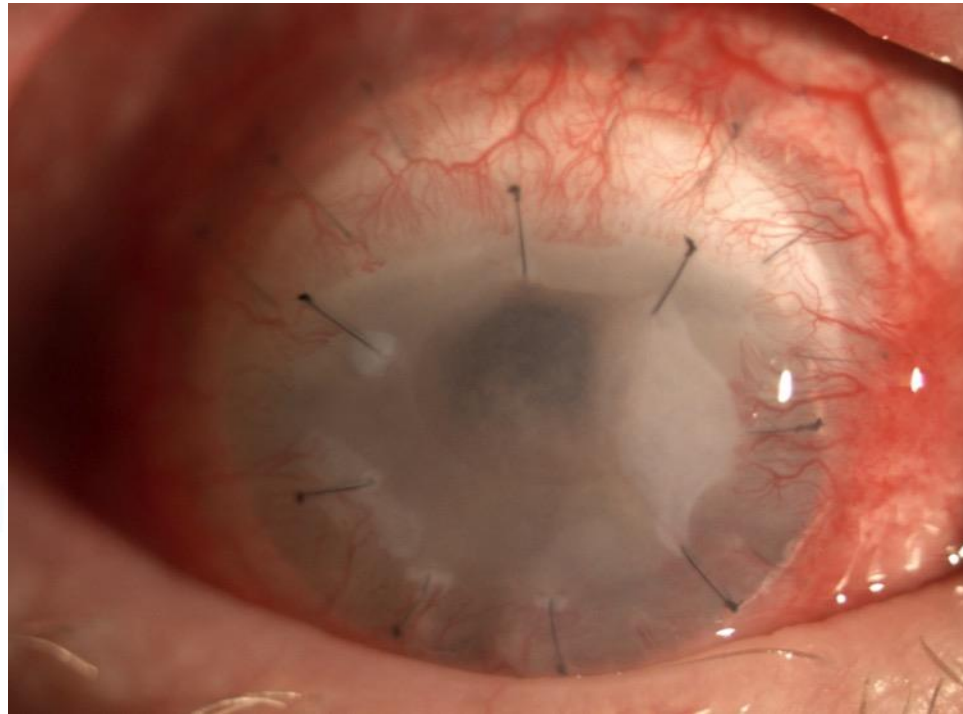
Auto-immun Disease

- Patient MH, 47, female, caucasian
- Anamnese
 - Lyell Syndrom / Stevens – Johnson Syndrom
 - Extreme photophobia and hyperemia, severe pain, light-dark perception
 - Status after several keratoplasties, including amnioma membrane

Lyell Syndrom – findings



2002

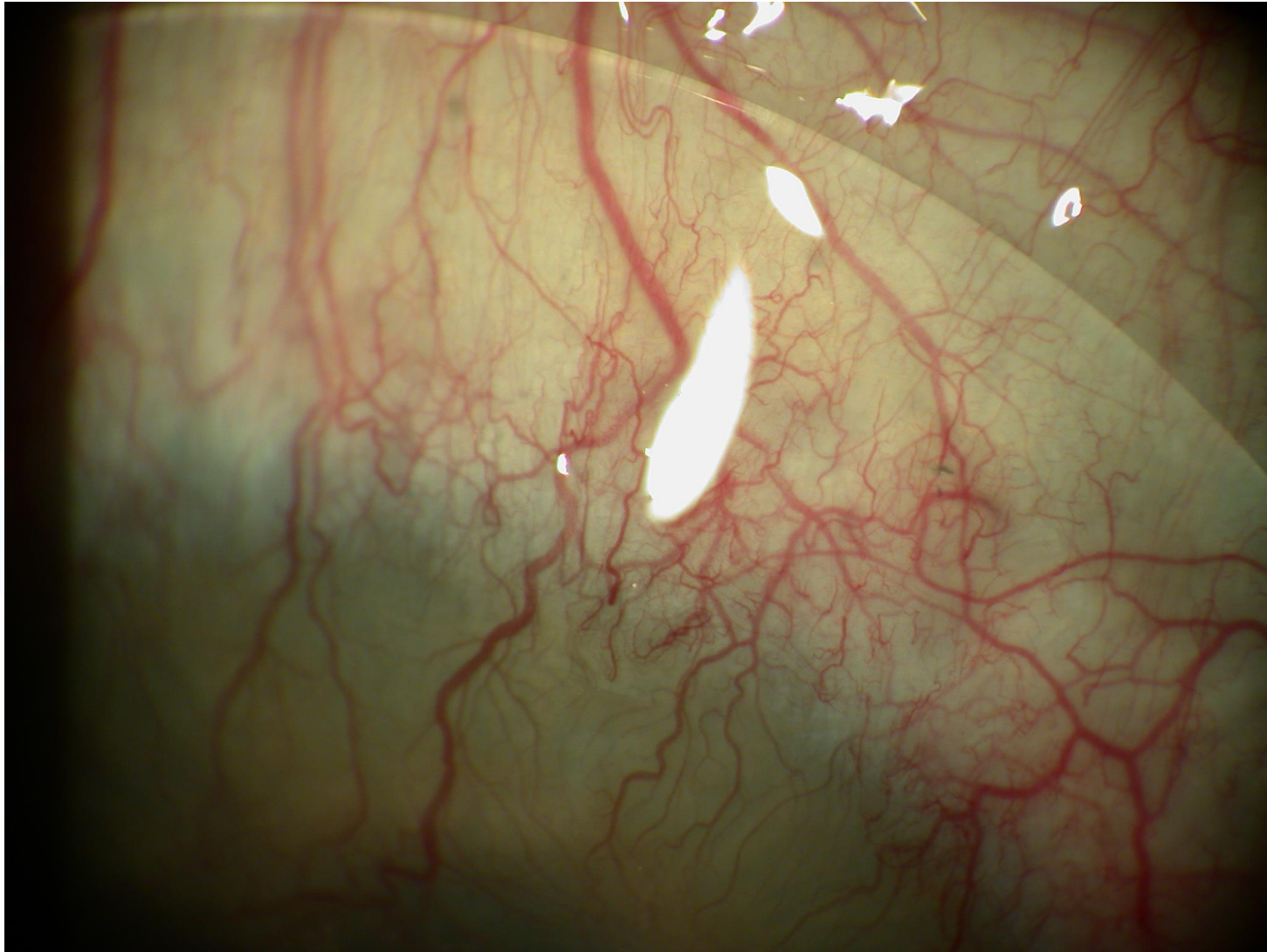


2014 (Amniom Mebrane)

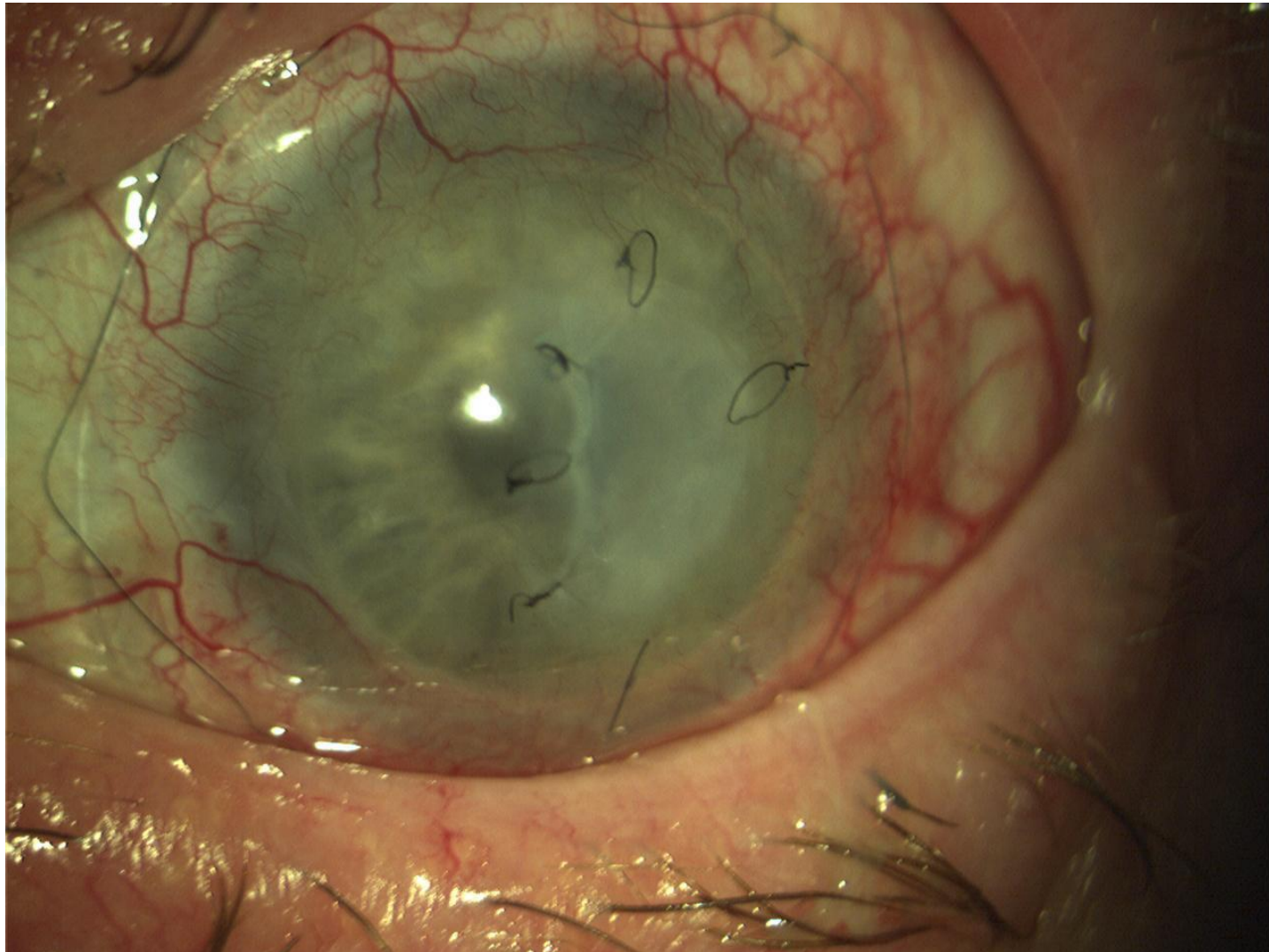
Lyell Syndrom – Plan

- Large bandage lens
 - Accelerate wound healing
 - Protection of the membrane
 - Covering the threads for mechanical relief
- Contact lens supply CW:
 - High watercontent hydrogel contact lens Ø 17.00

Lyell Syndrom - Resultat



Lyell Syndrom - Results

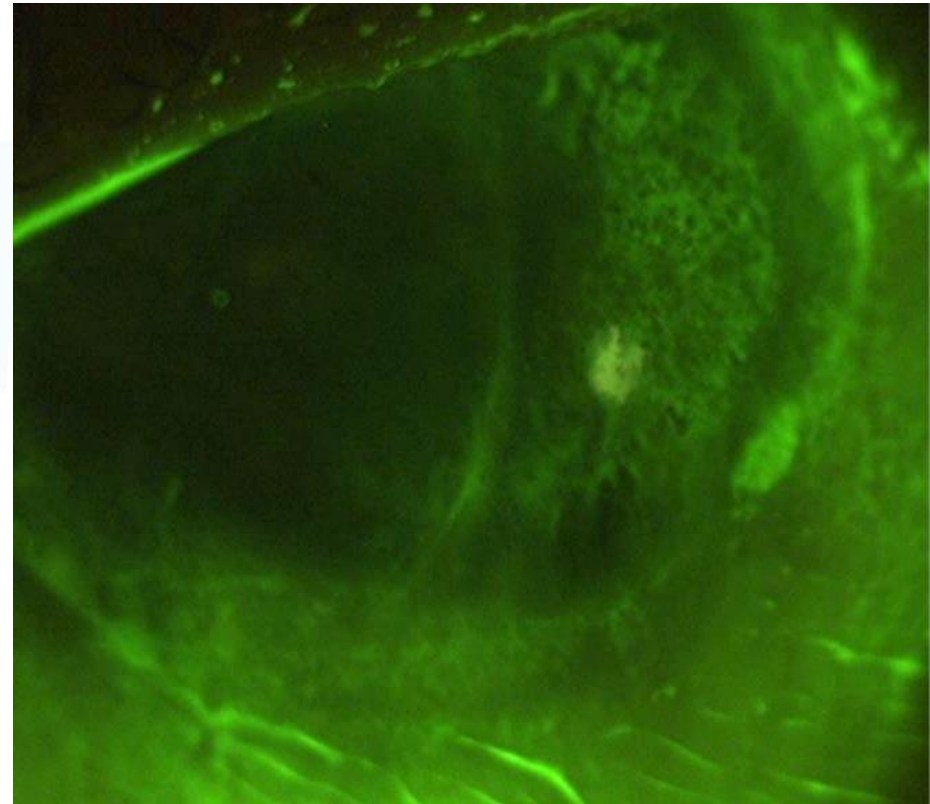


Lyell Syndrom - Results

- significantly reduced photophobia, hyperemia and pain
- The need for new transplants could not be prevented, but perhaps slightly delayed
- no visual improvement

Status after Trauma

- Patient DS, 54, male, business owner and passionate rally! driver
 - Status after trauma (car accident) with aniridia, aphakia and cornea involvement
 - severe sicca symptoms and photophobia OD>OS
 - Visual acuity OD significantly reduced and monocular double images

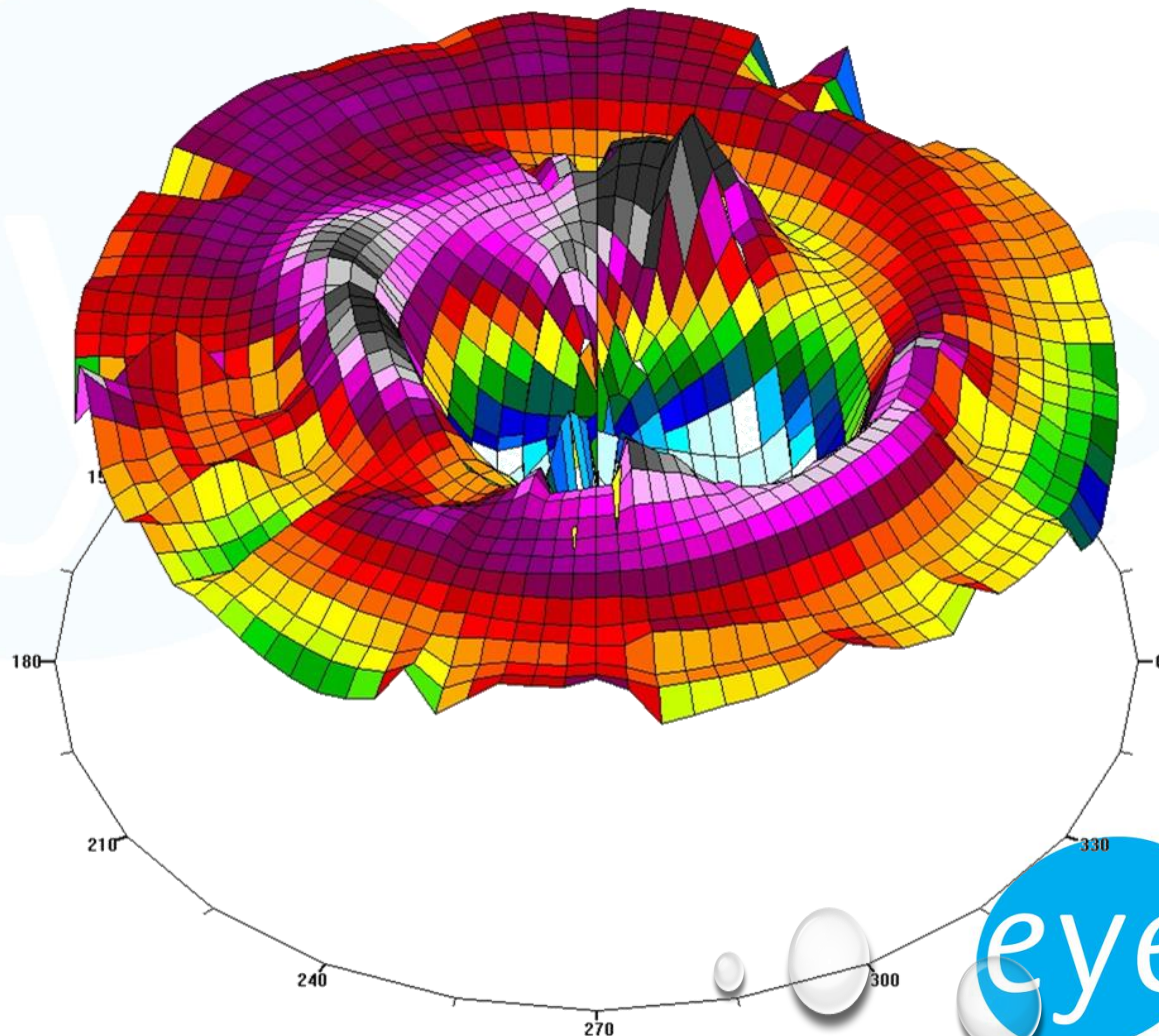


Trauma - objective findings



extreme Photophobia OD

Trauma – Topography



Trauma – Analysis

- Aniridia **and** cornea status suspected as cause of photophobia
- Sicca symptoms resulting from recurrent erosions?
- Irregular astigmatism suspected to be the cause of reduced visual acuity

Trauma - Plan

- Bridging the entire cornea with a therapeutic contact lens
 - Reduce sicca symptoms
- Visual rehabilitation
- Artificial pupil for reduction of photophobia
- Contact lens:
 - Scleral lens including iris print with clear pupil

Trauma - Results



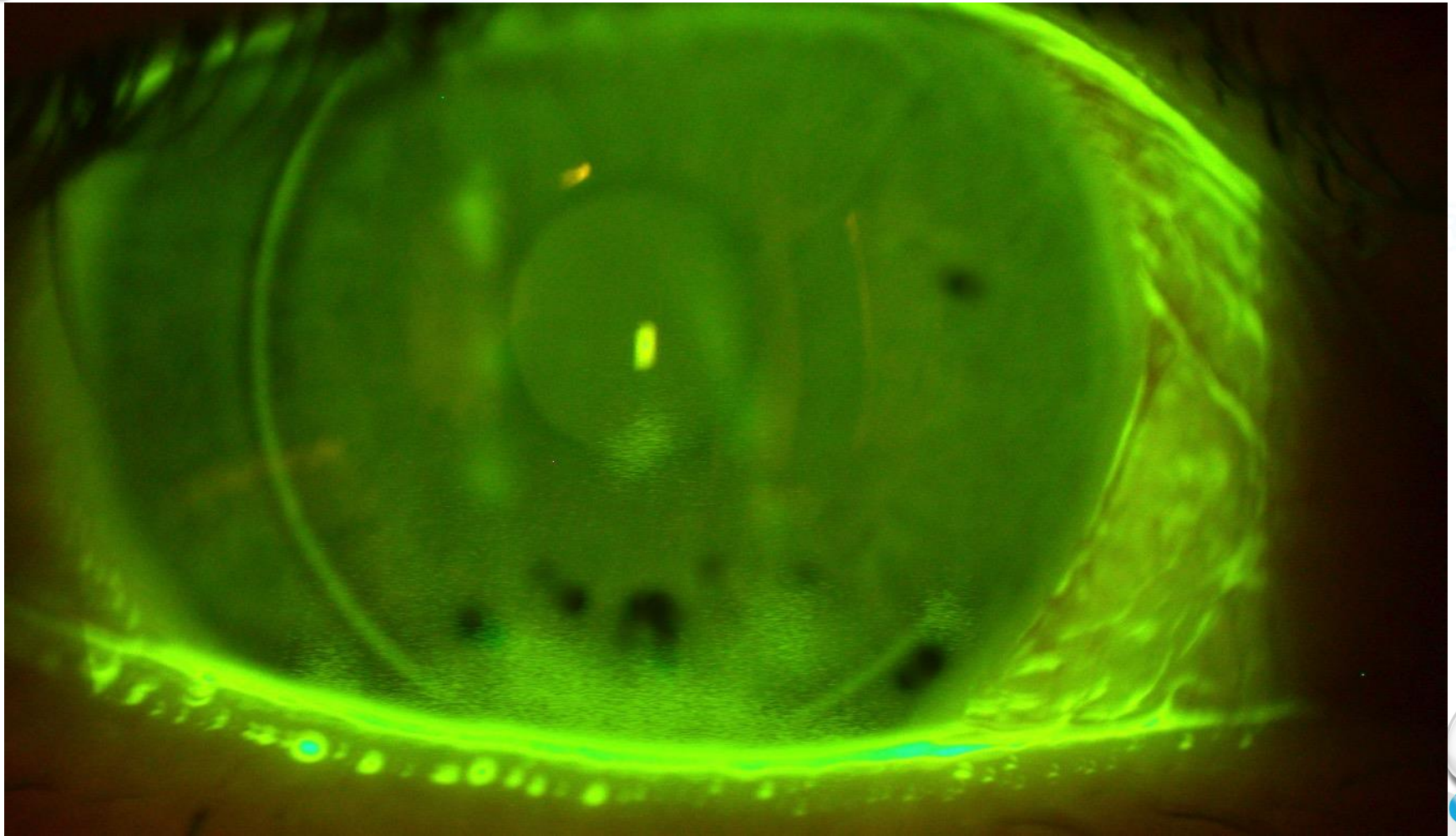
Trauma - Results

- Sicca symptoms completely eliminated
- Hyperemia reduced from grade 2-3 to grade 1
- Photophobia significantly reduced and only disturbing on bright days
- Vacc OD 0.63, without monocular double images!

Sicca Syndrom

- Patient MP, 33, caucasian, male
- Anamnese
 - Status after LASIK (Switzerland) 3 years ago
 - Dry eyes when wearing contact lenses was the main reason for LASIK
 - Since LASIK, increased Sicca symptoms, especially in the morning, drops every 2 hours artificial tears

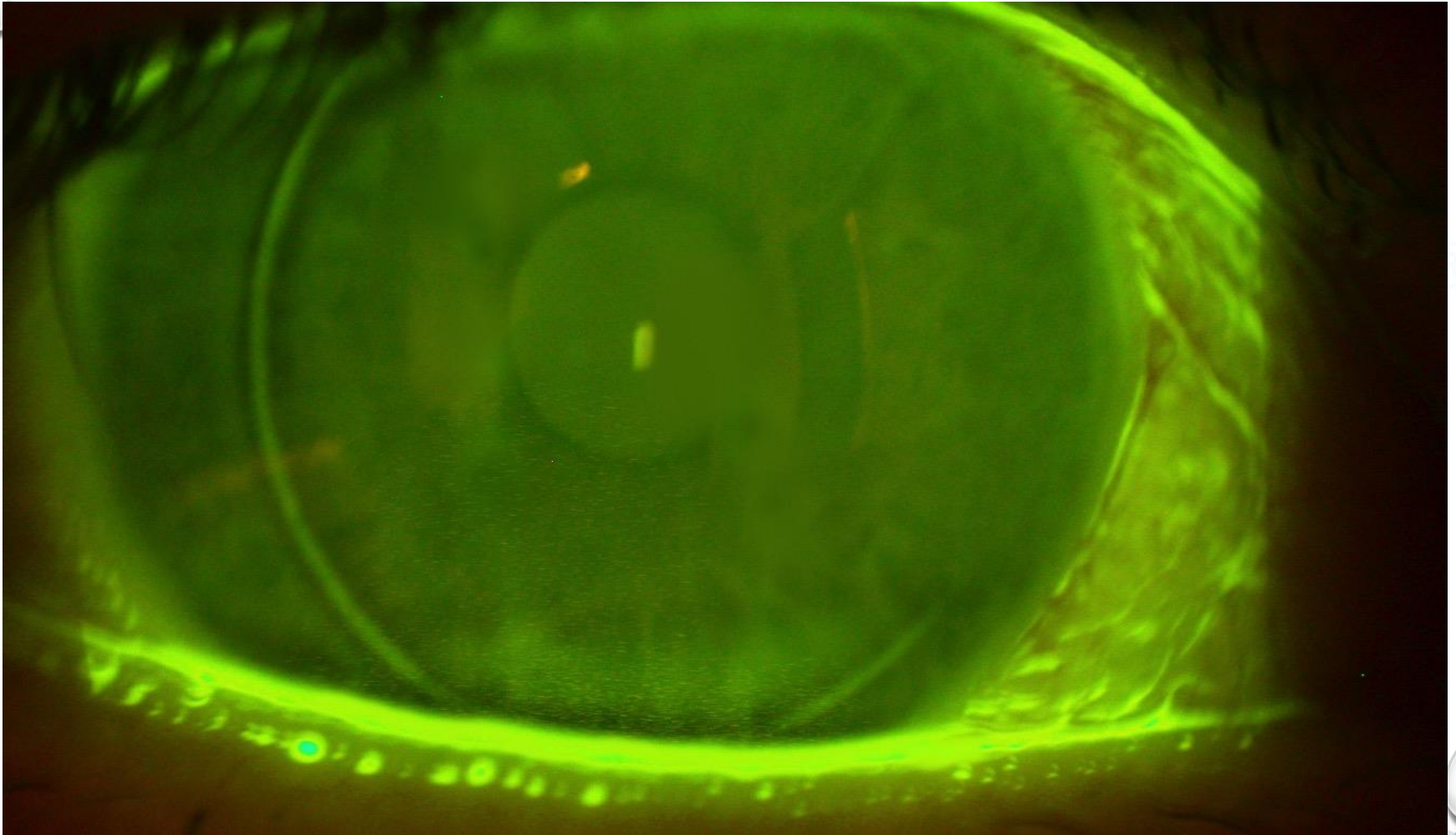
Sicca— Objective findings



Sicca – Analysis and Plan

- Inferior staining grade 3 and BUT only 2 seconds
 - Since the biggest problems occur in the morning, an evaporative sicca is unlikely
 - A nocturnal lagophthalmus could be the cause
- Therapeutic contact lenses only at night
 - To protect cornea from drying out overnight
 - Plano SiHy monthly disposable lens Lotrafilcon A

Sicca – Results



Status after 6 Month

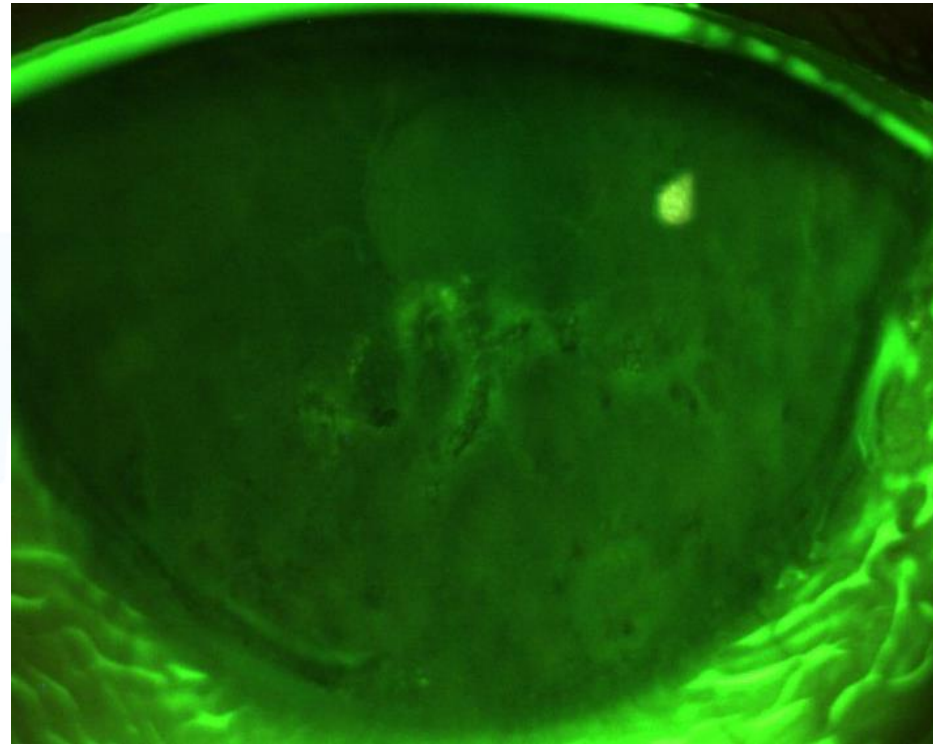
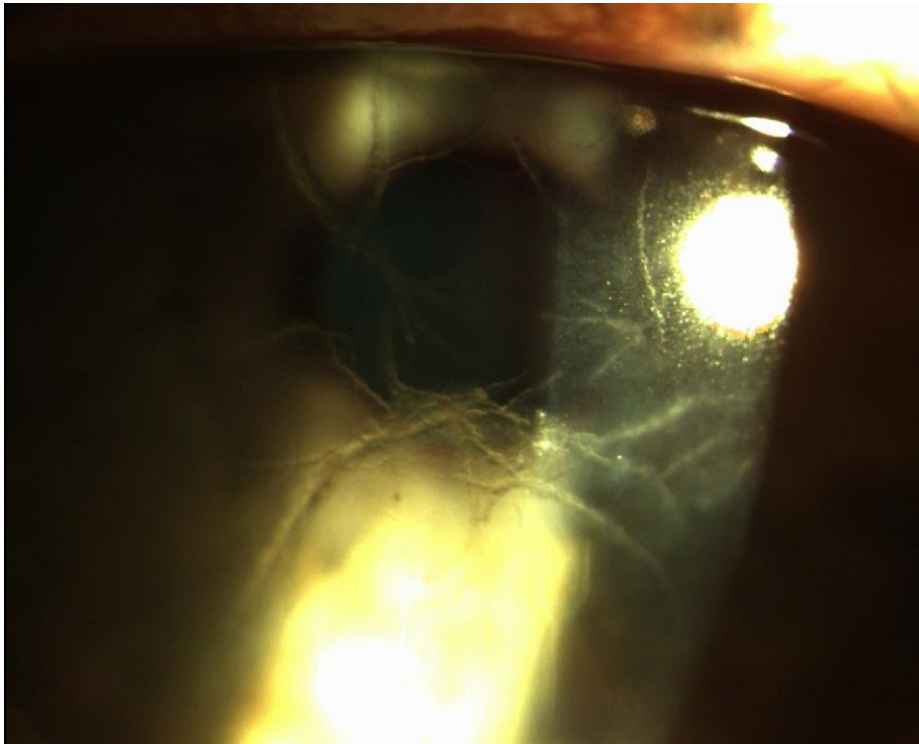
Sicca - Results

- Sicca symptoms significantly reduced
- Wetting solutions only sporadic used
- It may be assumed that the previous failure of contact lenses and the resulting LASIK is to a large extent due to nocturnal lagophthalmus

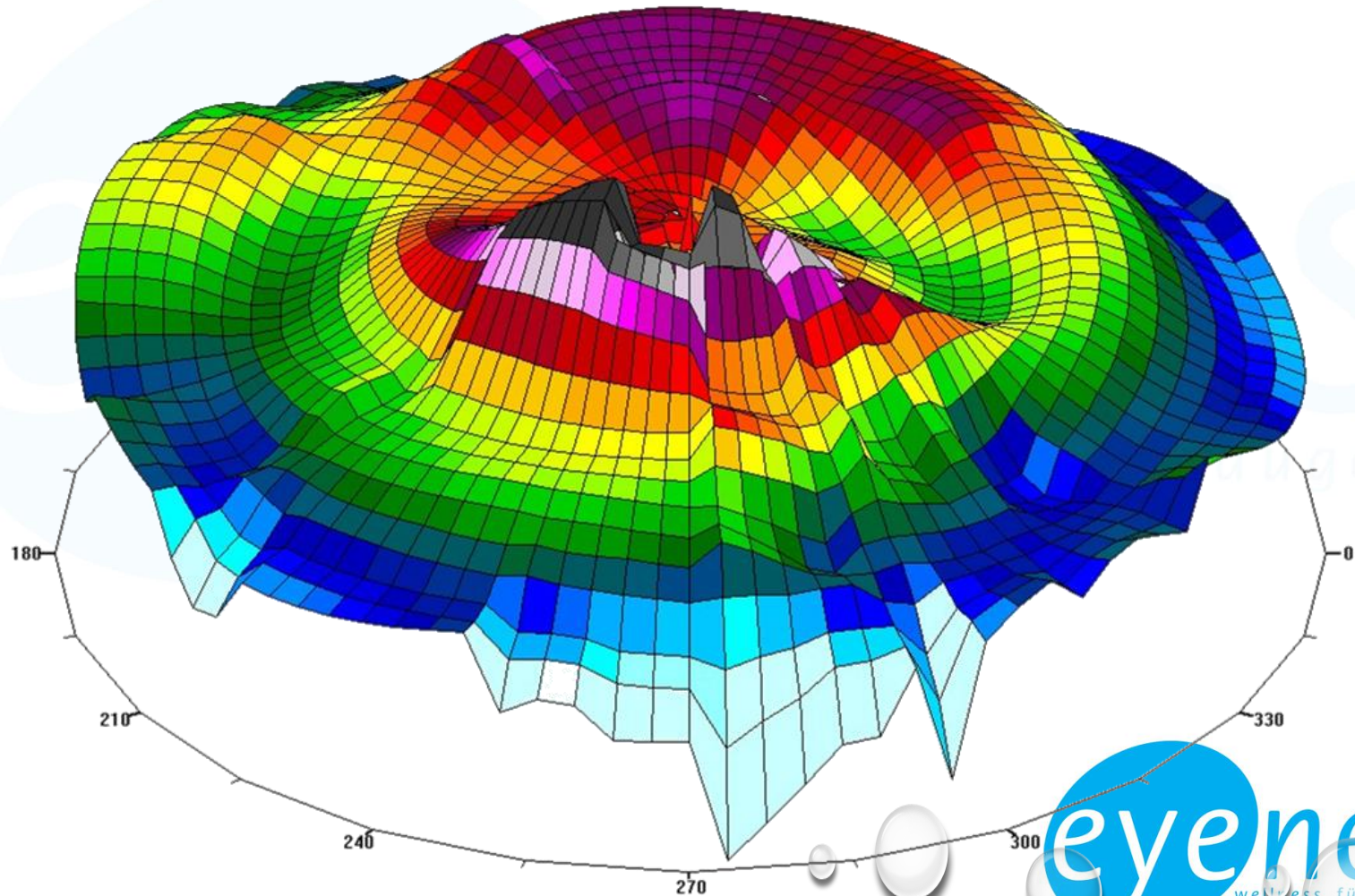
Lattice Dystrophy

- Patient RD, 46, female, caucasian, business-administration
- Anamnese
 - Lattice Dystrophy OD, PKP OS 15years ago
 - Extreme Photophobia and Hyperemia OU, frequent pain, visual problems (PC)
 - Attempt 15years ago with soft contact lenses failed
 - Mx: Dexafree, Vitamin A ointment Nocturne
 - Refraction:
+1.50 -2.50 135 Vacc 0.63 / +1.25 -2.25 130 V 0.63⁻³

Lattice Dystrophy – Findings



Lattice Dystrophy – Findings

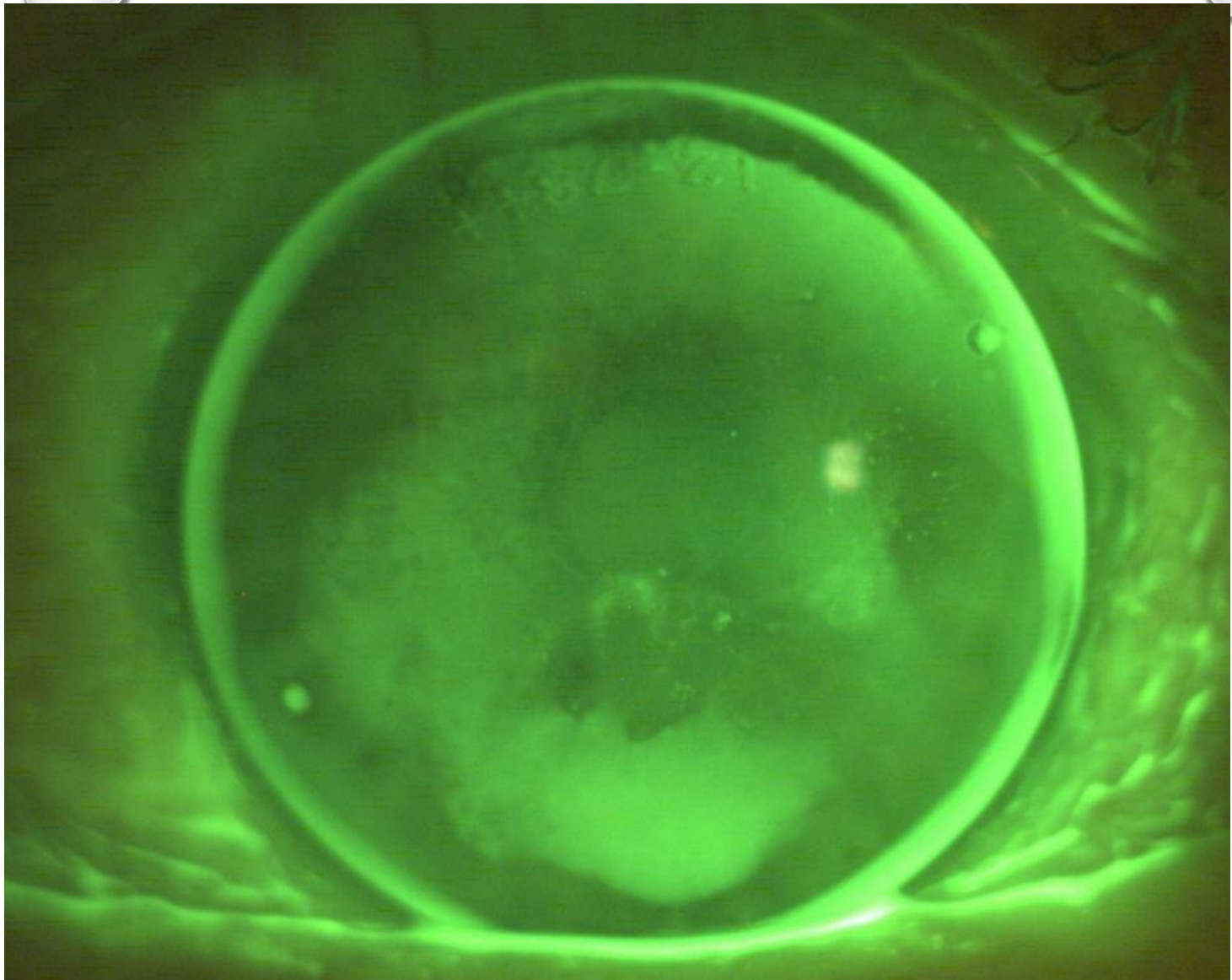


Lattice Dystrophy – Analysis

- Lattice Dystrophy with Fluorescein positive spots
 - Pain, Photophobia and Sicca Symptoms as a result of the recurrent erosions
- Irregular Astigmatism due to the dystrophy probalby causing reduced visual acuity

Lattice Dystrophy - Plan

- Recurrent Erosion over-bridge with therapeutic contact lens
 - Accelerate wound healing
 - Minimize recurrent Erosions
- Visual Rehabilitation
- Contact lens:
Perilimbal bitoric GP Ø 11.20



Status after 12 Month

Lattice Dystrophy - Results

- In 1 year only 1 recurrent erosion with pain
- Only single Fluo positive areas observed
- Dystrophy still visible
- Visual Results:
 - Distance Vacc 0.80 – 1.00
 - Near Vacc 1.00 with Addition +1.50

Summary

- Indication for Tx contact lenses is more frequent than one thinks
- Therapeutic contact lenses are a real blessing for the patients
- The spectrum of materials and geometries possible today is enormous
- Interdisciplinary co-management with the treating ophthalmologist is of benefit for both sides

Voting 3

- How often do you consider therapeutic contact lenses in the future?
 - a) less frequent than today
 - b) as frequent as today
 - c) More frequent than today



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Antworten Voting 1

- Have you ever used therapeutic contact lenses before? (Kein Richtig oder Falsch)
 - a) This is my daily business
 - b) Never – wasn't aware of the possibility
 - c) Rarely, only in a few cases a year
 - d) Never – this is way to dangerous

Antworten Voting 2

- What kind of contact lenses are suitable for therapeutic reasons?
 - a) Scleral lenses
 - b) Silicon Hydrogels
 - c) High water content (80%) Hydrogels
 - d) Gas permeable (GP) rigid contact lenses
 - e) All of the above

Antwort Voting 3

- How often do you consider therapeutic contact lenses in the future? (kein richtig oder falsch)
 - a) less frequent than today
 - b) as frequent as today
 - c) More frequent than today