



Sealed Capsule Irrigation with PerfectCapsule™ 12 month results

Prof. Manfred Tetz, MD

Matthias Müller, PhD

Valeska Müller, MD

Katharina Dumke, PhD

Eye-Center-Spreebogen

Laser-Center-Spreebogen

Berlin-Eye-Research-Institute



PCO prevention

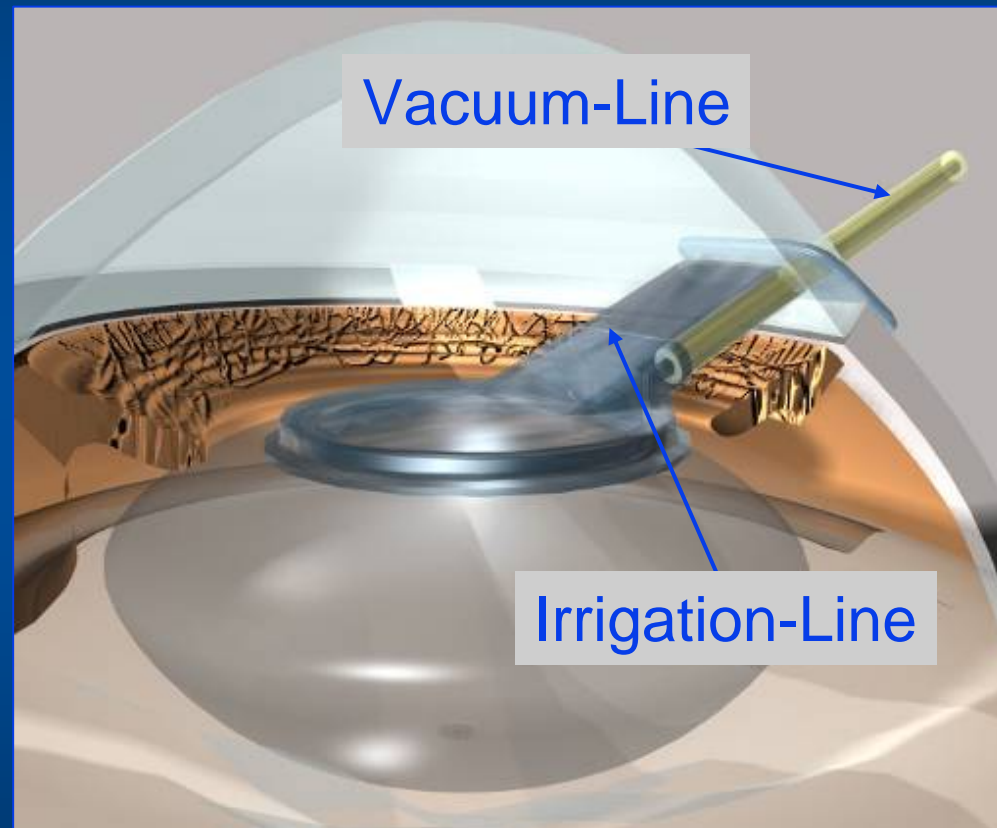
- Material and design of IOL (e. g. “sharp edge”)
- Application of pharmacological agents
 - > **problem of toxicity**
- **Intraoperative “Sealed Capsular Irrigation”**
(irrigation with deionized hypo-osmotic water)



PerfectCapsule™

- Introduced by Anthony J Maloof, MD
- Foldable silicone device
- Overall diameter: 7mm
- Inner diameter: 5mm
- Temporarily seal of a capsulorhexis (< 5mm)
- Selective and specific irrigation of the internal capsular bag.

Produced by Milvella Pty.
Ltd. Sydney (Australia)



Surgical factors for PerfectCapsule™ application

- Capsulorhexis < 5,0 mm
- Steep tunnel, if Anterior Chamber > 3,3 mm
(slightly more vertical tunnel to avoid stress
improved vacuum by BSS underneath device)
- Viscoelastic onto PerfectCapsule™ supports positioning

Surgical factors to maximize efficacy of desionized water

- Minimum 2 min netto (full contact) irrigation time
- No viscoelastic in the capsular bag during irrigation
- Complete cortex removal
- Capsular bag able to inflate during irrigation

SCI-Procedure





Patients and IOLs

- Part of European multicenter study



- Berlin: 11 patients (Age: $70,7 \pm 10,4$)
Cataract surgery
Silicone IOL

Study design

- **Proof of Concept:** manageability of the device
- **Safety:** visual acuity, endothel cell count, pachymetry, IOP
- **Evaluation of PCO prevention:**
 - qualitative: slit lamp photos of capsulorhexis and IOL
 - quantitative: evaluation by EPCO2000

(MR Tetz et al.: Posterior capsule opacification,
Part 2: Clinical findings

J Cataract Refract Surg-Vol 25, Dec. 1999:1663-74)

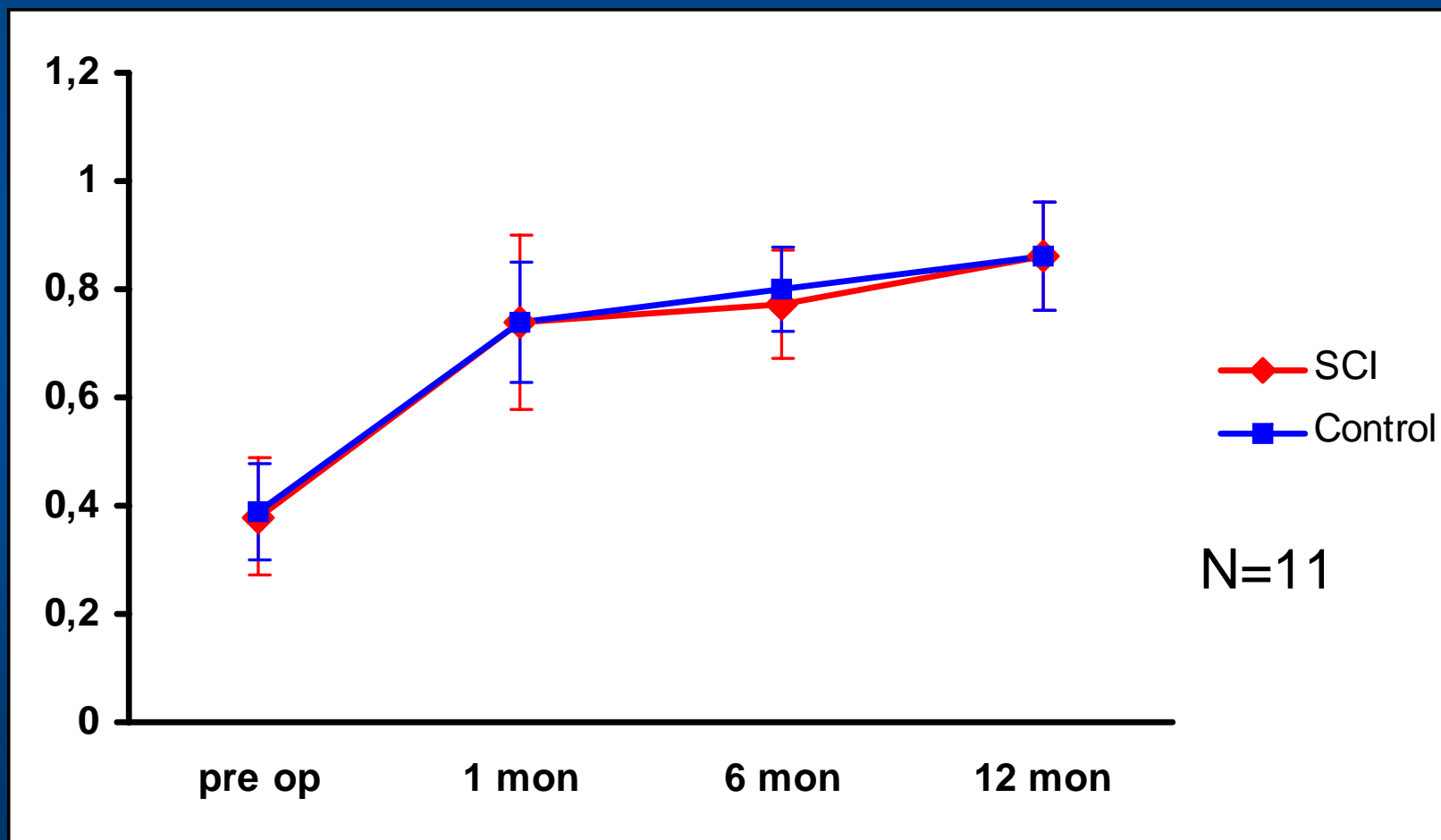
12 month Results

- Operating time Extension: 4-6 min
- No additional corneal incisions necessary
- Good manageability
- Clear cornea in all cases



12 month Results

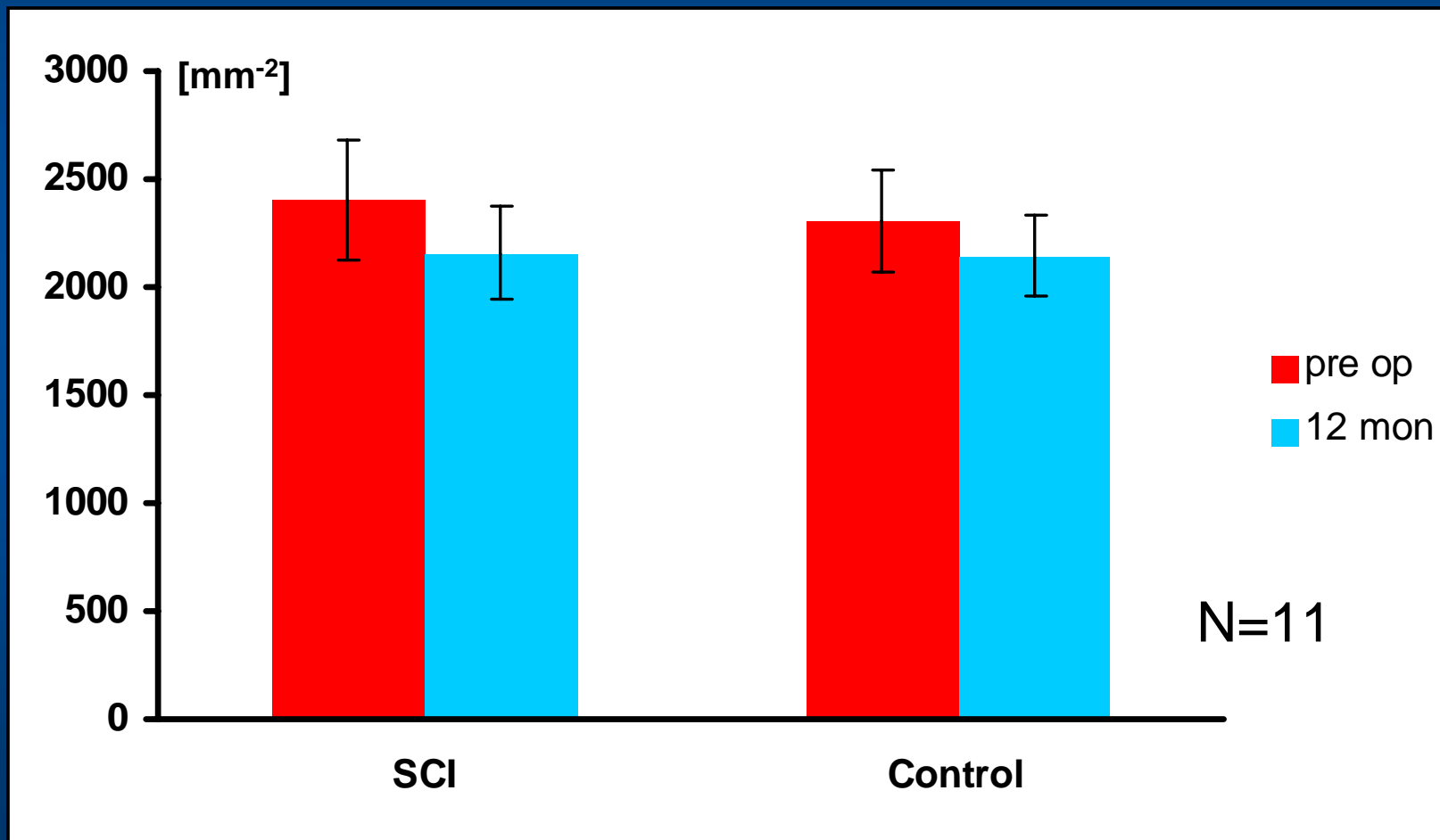
Development of BCVA





12 month Results

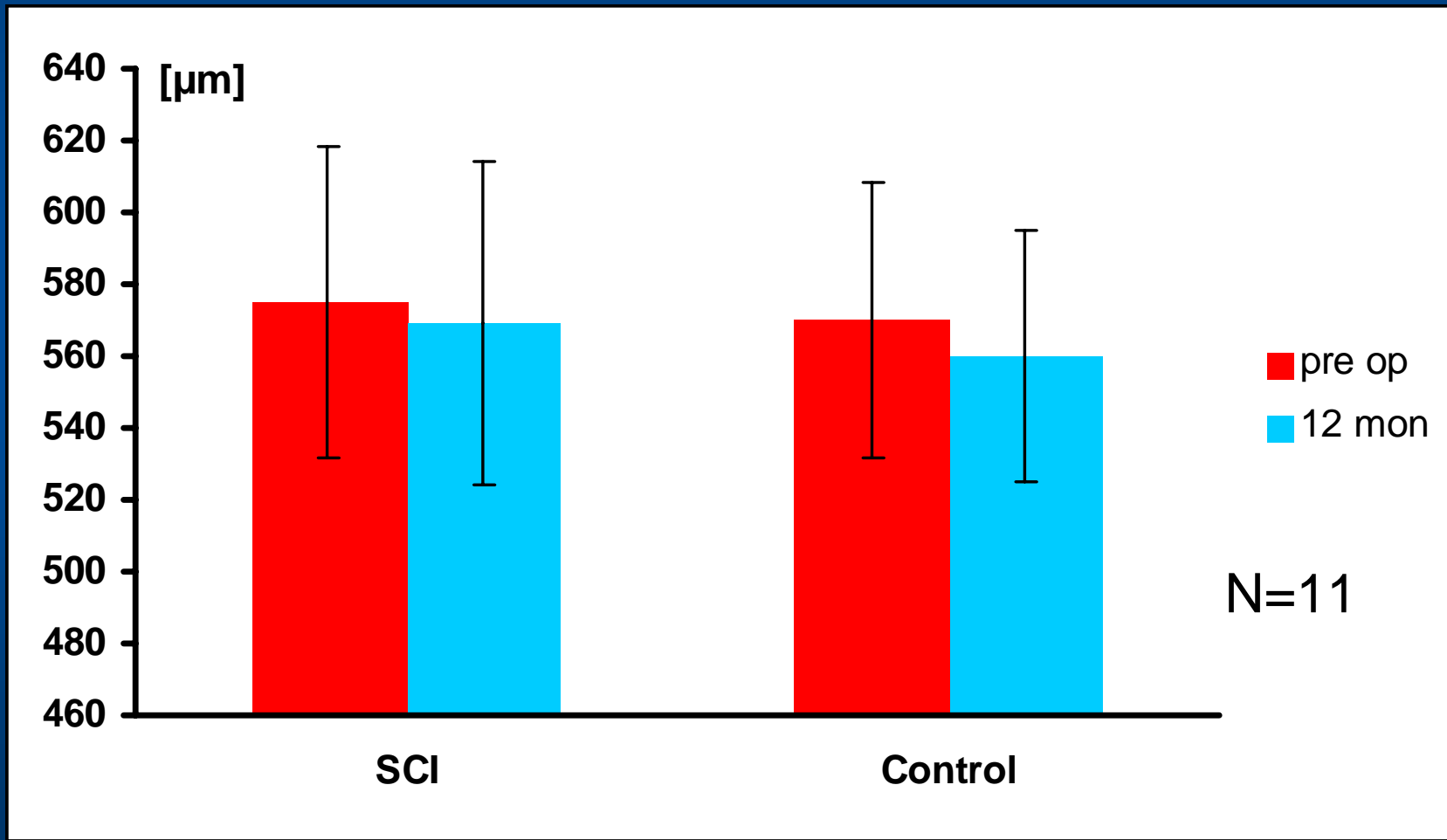
Endothel Cell count





12 month Results

Pachymetry

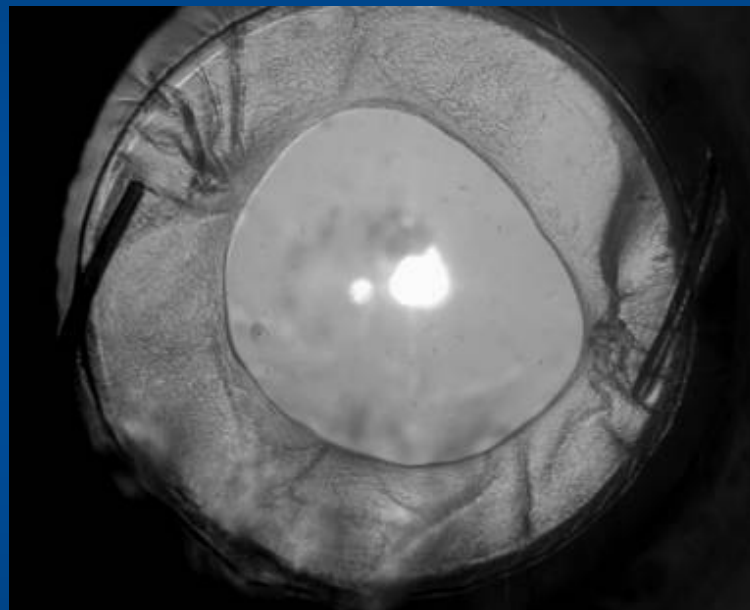
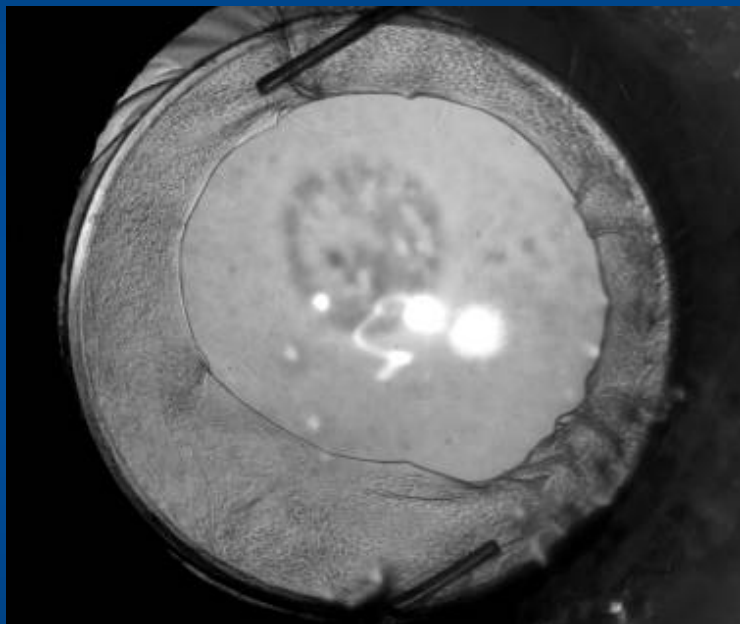




12 month Results - PCO prevention

SCI

control



Capsulorhexis of control eye is thickened
Evaluation by EPCO2000 not yet possible

Intraoperative problems

2 x loss of vacuum

(deep anterior chamber > 3,3 mm)

Conclusion

- Use of PerfectCapsule™ is a safe procedure
- No significant corneal endothelial cell damage
- No significant change of pachymetry
- Stable development of visual acuity
- Less fibrotic reaction with SCI
- Longer follow up are necessary

Proposal for Device improvement

Extension of irrigation line to ensure
the uncomplicated use of steep tunnels
in cases of deep anterior chambers

Thank you very much for attention!



AUGENTAGESKLINIK
SPREEBOGEN



AUGENTAGESKLINIK
SPREEBOGEN



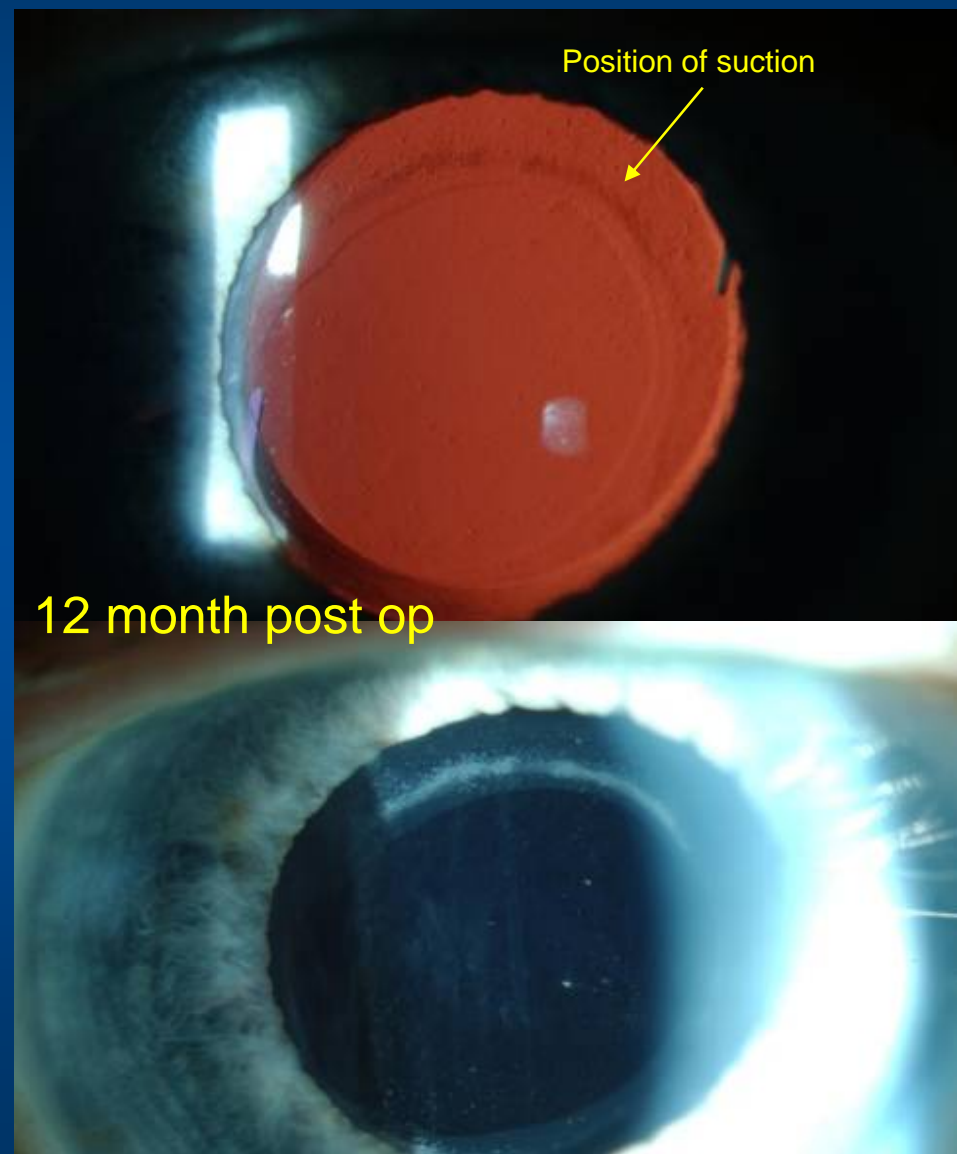
AUGENTAGESKLINIK
SPREEBOGEN



AUGENTAGESKLINIK
SPREEBOGEN

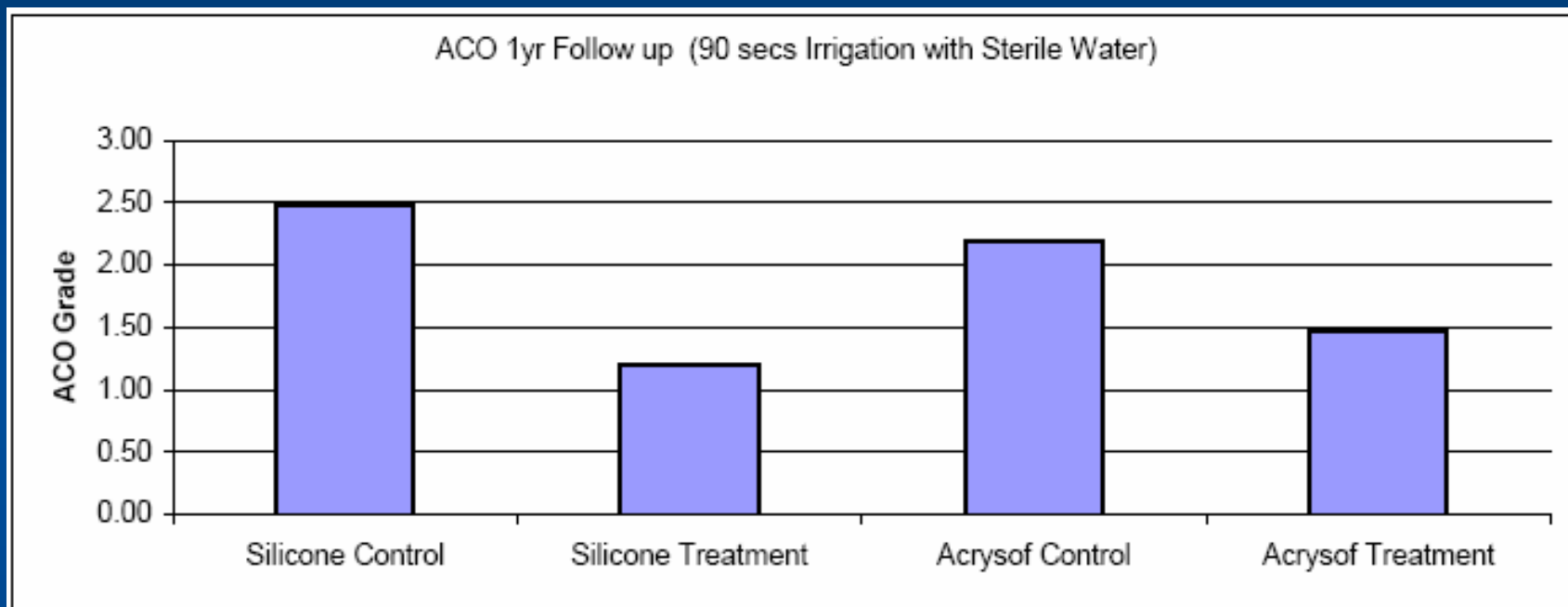


12 month – Results of australian primary study





12 month – Results of australian primary study



Milverton EJ, Maloof AJ et al.:

Qualitative evaluation of development of PCO (Grade 0 – 3)

Less PCO on anterior capsule in „treatment group“: Grade 1, 2
versus „control group“: Grade 2,5 (Silicon-IOL)