Use of Lacrifill® for pre-operative ocular surface optimization in cataract surgery

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Abstract
A 66-year-old patient scheduled for cataract surgery presented with advanced dry eye disease and suspected Sjögren's syndrome, precluding reliable biometry and safe surgical planning. Treatment with Lacrifill® led to improved ocular surface findings, including resolution of corneal staining and normalization of epithelial regularity, enabling reproducible measurements and subsequent scheduling of cataract surgery. This case highlights the importance of pre-operative ocular surface optimization in complex cataract patients.

Presentation
A 66-year-old female patient was referred to our clinic in late December 2025 for evaluation prior to cataract surgery after a planned procedure had been postponed in an external setting. The deferral was attributed to severe ocular surface disease with dry eye symptoms and a suspected diagnosis of Sjögren's syndrome, resulting in insufficient ocular surface stability for reliable pre-operative assessment. At presentation, the patient reported foreign body sensation, ocular discomfort and fluctuating vision. At the time of referral, the patient was receiving intensive topical therapy, including lubricating eye drops on an hourly basis and topical ciclosporin 0.1% twice daily.

Best-corrected distance visual acuity was 0.6 (decimal) in the right eye and 1.0 (decimal) in the left eye. Lens examination revealed a nuclear sclerotic cataract (NS 2+) in the right eye. Objective assessment of the ocular surface was performed using the MS-39 (CSO). Non-invasive tear break-up time (NIBUT) was reduced to 5.5 seconds, with early and sectorial tear film break-up. Tear film analysis demonstrated an irregular tear film pattern, and corneal epithelial thickness mapping showed an inhomogeneous epithelial distribution. Corneal fluorescein staining was present and graded as Oxford grade two. Tear production assessed by Schirmer testing without anaesthesia measured 1 mm in both eyes. Symptom assessment using the Ocular Surface Disease Index (OSDI) yielded a score of 60. Based on these findings, cataract surgery was not considered appropriate at that stage. In parallel, the patient was referred to the rheumatology department for further evaluation of suspected Sjögren's syndrome.

Therapeutic Intervention, Follow-up and Outcomes
To optimize the ocular surface prior to surgery, treatment with Lacrifill® was initiated.
At follow-up two months after treatment initiation, the patient reported a clear improvement in ocular comfort and visual stability. The OSDI score decreased from 60 to 20. Corneal fluorescein staining resolved completely, with no staining observed. Objective reassessment showed improved tear film stability, with NIBUT increasing from 5.5 to 9.1 seconds and a more homogeneous tear film pattern. Corneal epithelial thickness mapping demonstrated a more regular epithelial profile (Figure 1).

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At this visit, ocular biometry and surgical planning were performed, and the patient was scheduled for cataract surgery based on the stabilized ocular surface and reproducible pre-operative measurements.

Conclusion

This case highlights the importance of addressing ocular surface disease as part of the pre-operative work-up in patients scheduled for cataract surgery, particularly in those with severe dry eye disease and suspected Sjögren's syndrome. In this patient, inadequate ocular surface stability initially prevented reliable biometry and surgical planning, leading to postponement of surgery. Treatment with Lacrifill® resulted in a meaningful improvement in both subjective symptoms and objective ocular surface parameters, including tear film stability and corneal surface integrity. Optimization of the ocular surface enabled reproducible pre-operative measurements and allowed cataract surgery to be safely planned.

This case underscores the value of targeted pre-operative dry eye management in complex patients and illustrates how stabilization of the ocular surface can facilitate surgical decision-making and improve readiness for cataract surgery in routine clinical practice.

Figures

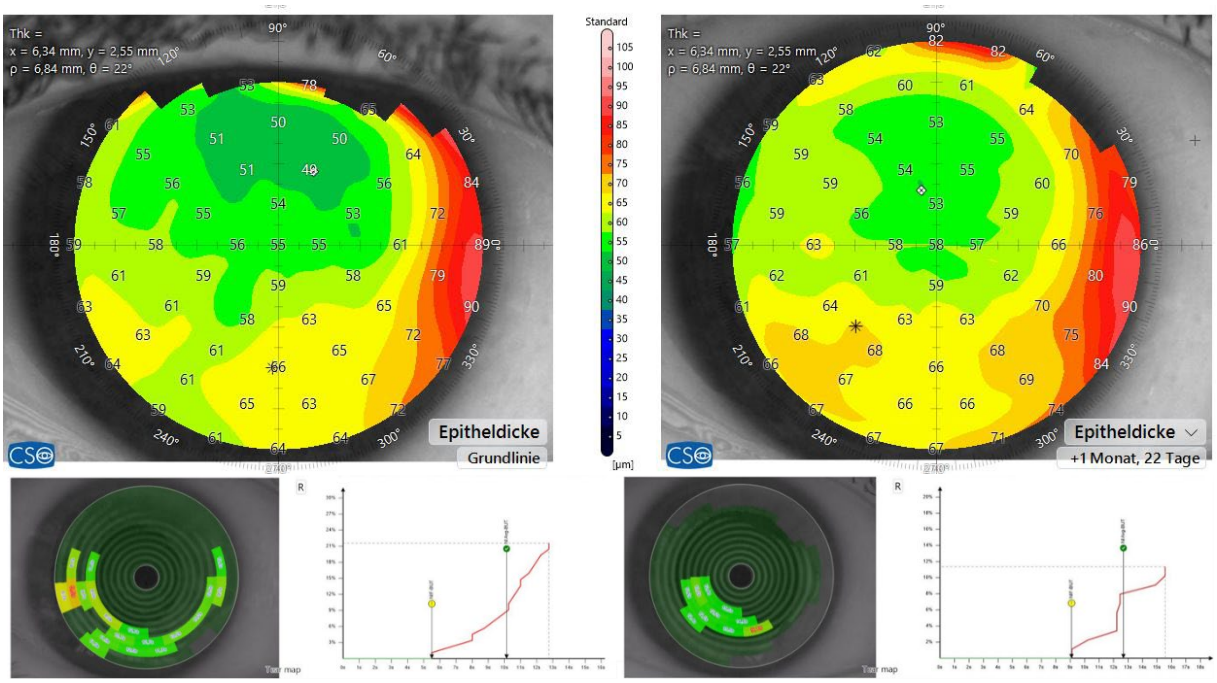

Figure 1: Changes in epithelial thickness maps and NIBUT from presentation (left) and follow-up seven weeks later (right).

Disclosures / Conflicts of Interest

E. Golschan: Consultant for Nordic Pharma

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