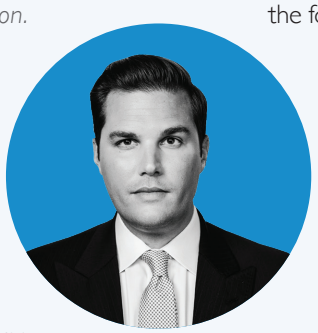
Uncovering Ocular Comorbidity

Using InflammaDry® to diagnose pre-existing dry eye prior to refractive cataract surgery

Blake K. Williamson is a third-generation ophthalmologist at The Williamson Eye Center in Baton Rouge, LA, USA. He specializes in laser assisted cataract surgery with advanced IOLs and modern laser vision correction.



When considering InflammaDry® (Quidel Corporation, San Diego, CA, USA) – the first commercially available, rapid result, in-office test that detects elevated levels of inflammatory marker MMP-9 – surgeons typically want an answer to a simple question: "How will MMP-9 testing change what I do?"

For Williamson, the role of MMP-9 testing is crucial – a positive test result indicates the need for pulsed steroids, preservative-free artificial tears, and cyclosporin. In short, MMP-9 positive equals steroids.

Background

The patient is a healthy 60-year-old attorney who came to the clinic to discuss cataract surgery. She complained of tired eyes after long hours at work, but had no other ocular comorbidities. The patient desired freedom from bifocals and wanted to be able to see at distance without glasses. She was content to use reading glasses.

Diagnosis

As part of our workup for all cataract surgeries, the patient received both osmolarity and MMP-9 testing, revealing the following:

- Positive MMP-9, indicating dry eye disease
- Mild cornea staining with trace inferior SPK
- Ocular surface disease revealed by corneal topography (see Figure 1)
- 2D irregular astigmatism at an axis of 6 degrees

Intervention and treatment

A toric lens was considered, but ruled out due to concerns about how much of the patient's irregular cylinder was due to ocular surface changes. The patient was put on a four-week course of loteprednol and cyclosporine, as well as preservative-free artificial tears.

The role of MMP-9

When a patient is MMP-9 positive, both the magnitude and meridian of astigmatism will likely change from pre-op to post-ocular surface optimization, when the patient is ready for phacoemulsification.

Clearly, MMP-9 testing is important – even in patients without dry eye symptoms, as many dry eye patients can be asymptomatic. In this patient case, if I had trusted the original topography, her astigmatism would have been overcorrected on the incorrect axis, and she would have been left with residual refractive error. And I would have been left with an unhappy patient.

Patient outcome

After the four-week treatment plan, astigmatism had been reduced to 0.85 D at an axis of 66. Several serial topographies confirmed astigmatic stability, and the patient underwent successful femtosecond laser-assisted cataract surgery with a monofocal lens.

This case demonstrates the importance of optimizing the ocular surface prior to refractive cataract surgery. The patient now enjoys 20/20 uncorrected distance vision.

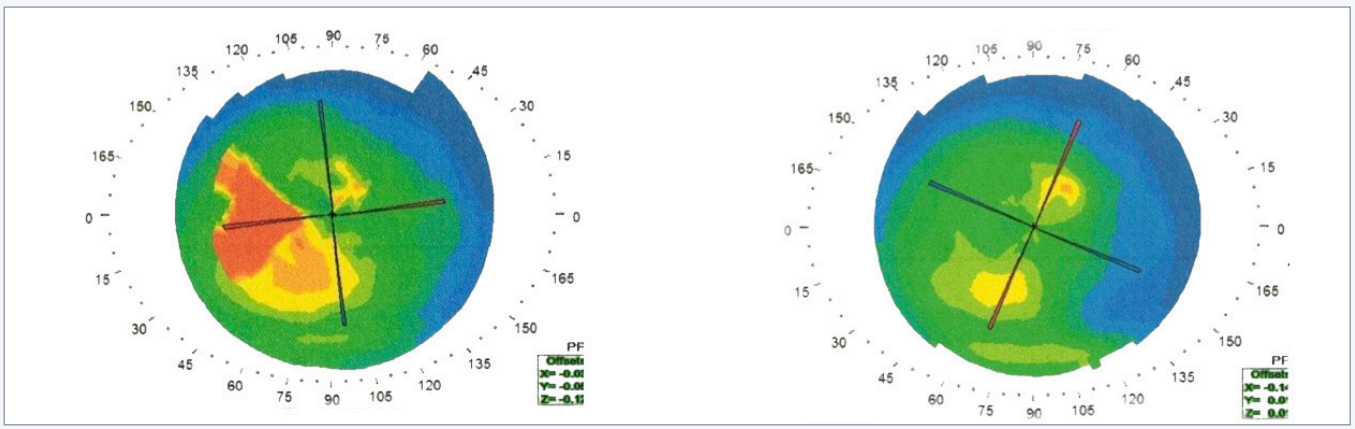


Figure 1. Corneal topography showing before (left) and after (right) treating with steroids and cyclosporine.