

MODERATE MEIBOMIAN GLAND DYSFUNCTION TREATED WITH INTENSE PULSED LIGHT



In this case study, LacryStim® helped to significantly reduce the patient’s symptoms, stabilize the tear film, and produce better meibum quality.

BY MARIE-CAROLINE TRONE, MD (FRANCE)

Dry eye disease (DED) is a multifactorial disease that affects millions of people worldwide with a varying degree of signs and symptoms. It affects both men and women and both younger and older patients. Today, we know more about how the pathogenic mechanisms of DED affect patients, and we have a variety of treatment options to not only provide relief from symptoms but to treat the source of the condition. Today, DED can be treated with over-the-counter medications, at-home remedies, prescription medications, and in-office procedures. It is highly likely that the selected treatment course coincides with DED severity. The following case presentation outlines the treatment course I prefer for patients with evaporative DED and moderate meibomian gland dysfunction (MGD). It details five key timepoints in the patient’s journey:



1 CLINICAL EXAMINATION

A 52-year-old saleswoman presented with the chief complaint of worsening dry eye symptoms. She shared that she spends a lot of time—at least 8 hours per day—working on her computer. At first, the onset of her symptoms was mild. For the past several weeks, however, she described her symptoms as debilitating, and she noticed that her eyes are red and stinging, particularly at the end of the day.

At the time of the clinical examination, she was not on any treatment and had not sought out any other care. With further questioning, the patient explained that

she was first prescribed glasses at the age of 42 and has been wearing them ever since, but she never experienced symptoms of DED before this time. Her BCVA was satisfactory (10/10 OU), and IOP was normal (15 mm Hg OS and 16 mm Hg OD). Her ocular surface disease index (OSDI) score was 45.8.

The patient had no risk factors for DED, but on clinical examination, there were visible signs of DED. At high magnification on the slit-lamp examination, a telangiectasia was visible along the free margin, and foamy tears were noted (Figure 1). The free margin

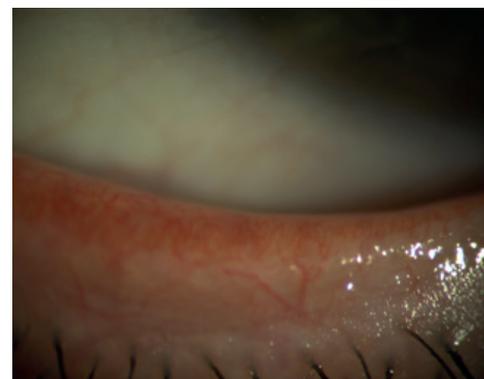


Figure 1. On high-magnification slit-lamp examination, a telangiectasia was visible along the free margin.

was palpated, and there was poor meibum expression. Fluorescein dye was instilled, revealing a superficial punctate keratitis inferior to the eyelid (Figure 2).

Analysis of the patient's noninvasive tear breakup time (NIBUT) was also conducted. The blinking analysis was considered pathological; blinking was incomplete, and NIBUT was down to 4 seconds in the patient's left eye and 3 seconds in the right.

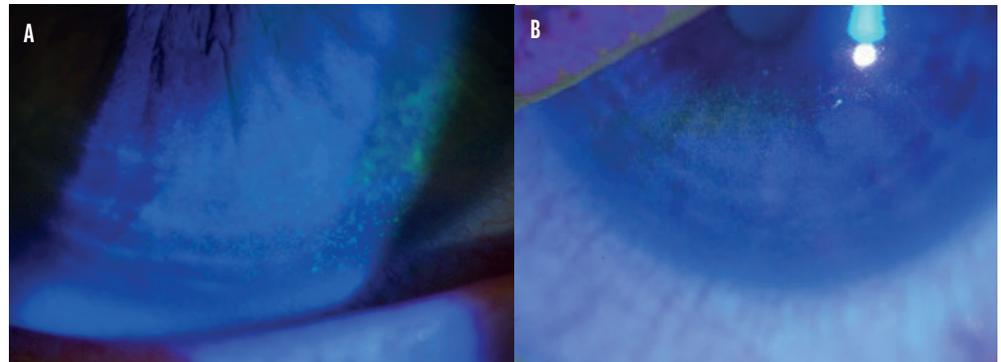


Figure 2. Superficial punctate keratitis inferior to the eyelid.

2 LACRYDIAG® EXAMINATION

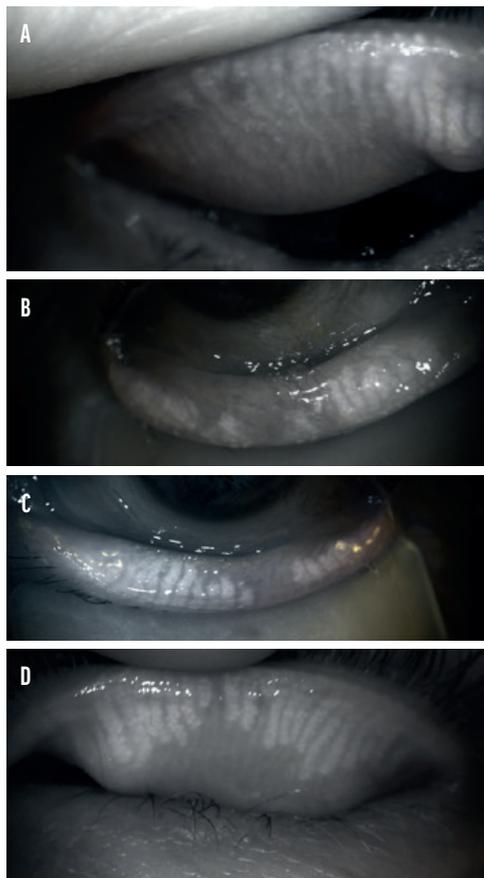


Figure 3. Meibography showing severe meibomian gland atrophy.

The patient underwent ocular surface analysis using the LacryDiag® (Quantel Medical). Her meibography showed severe meibomian gland atrophy (Figure 3). Interferometry was also abnormal, and a weak meshwork was noticeable (Figure 4). The patient was diagnosed with evaporative DED with moderate MGD and educated on the physiopathology of her condition by using a personalized information sheet available at www.mydryeyedisease.com. We have noticed better treatment compliance among the patients who receive extensive counseling prior to undergoing treatment for their condition.

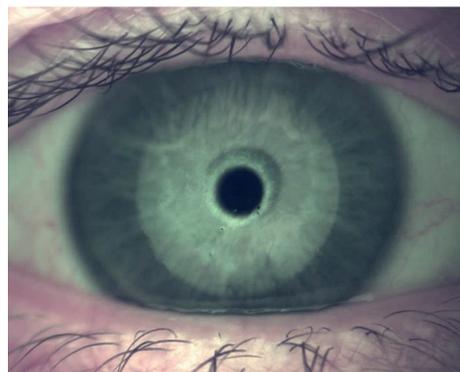


Figure 4. Presence of a weak meshwork.

3 INITIAL CARE

After the patient received counseling, she was prescribed preservative-free artificial tears, eyelid care, and blinking exercises (Figure 5). The patient was asked to return in 4 months for follow-up care.

At her 4-month checkup, despite good treatment compliance, the patient's symptoms only partially improved. Appreciable functional impairment was ongoing, and the moderate MGD persisted. We decided to begin intense pulsed light (IPL) treatment with LacryStim® (Quantel Medical) while maintaining the symptomatic treatments prescribed previously.

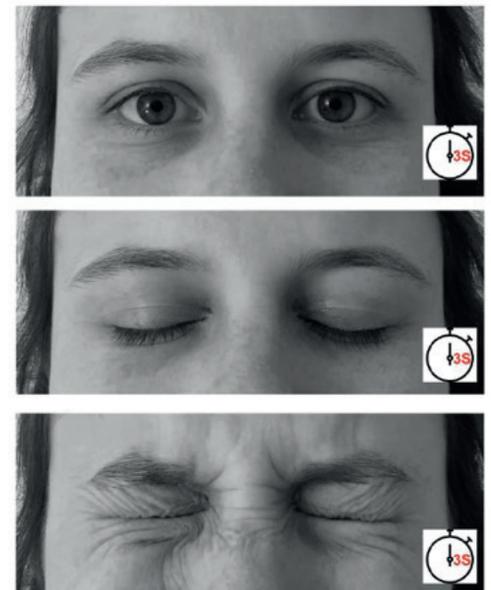


Figure 5. Example of blinking exercises.

4 LACRYSTIM® IPL TREATMENT

The protocol for LacryStim® IPL treatment comprises three sessions, conducted on days 0, 15, and 45. During each session, four shots are applied per side (Figure 6). Fluence ranges from 8 to 12 J/cm². Protective goggles must be worn by the patient and the practitioner throughout the procedure. Each shot takes about 2 seconds, so it takes less than 10 seconds for all four shots. The preparation requires more time than the treatment (5 minutes).

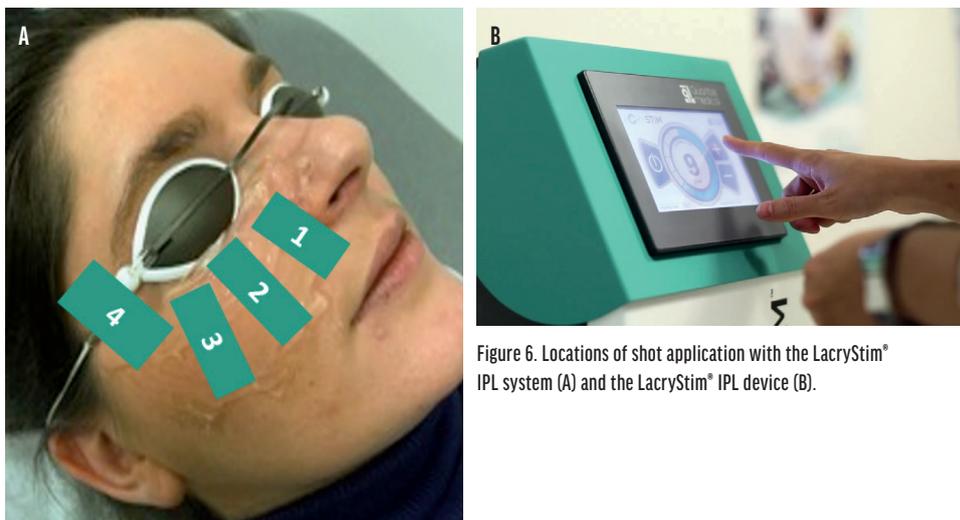


Figure 6. Locations of shot application with the LacryStim® IPL system (A) and the LacryStim® IPL device (B).

5 THREE-MONTH FOLLOW-UP

The patient returned 3 months after her last IPL session and reported a clear improvement in her symptoms. She no longer had any functional impairment, and her OSDI score

was down to 27.08, from 45.8 at the start of treatment.

Slit-lamp examination revealed an improvement in MGD with better meibum quality and expression. The

LacryDiag® ocular surface analysis images showed an improvement in NIBUT, from 3.8 seconds at the start of the treatment to 9.5 seconds 3 months after the last treatment (Figure 7).

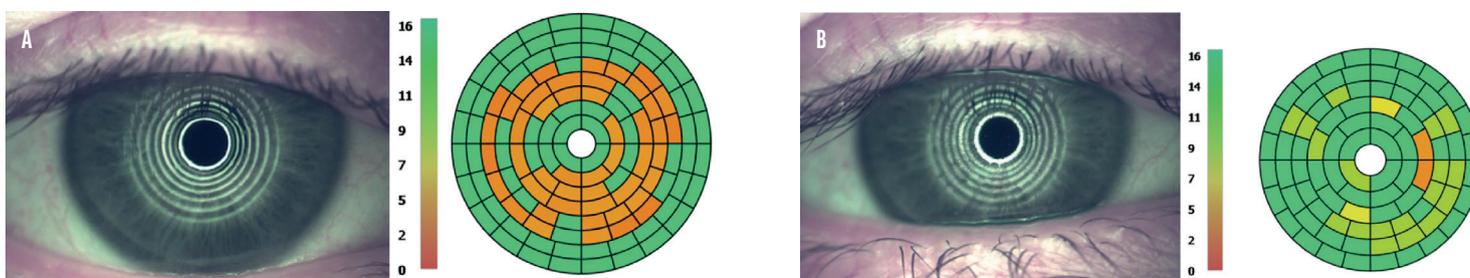


Figure 7. NIBUT at the time of initial treatment (A) and 3 months after the last treatment (B).

CONCLUSION

LacryStim® IPL is an effective way to treat the lipid layer of the tear film. When symptomatic DED treatment (eg, preservative-free artificial tears, eyelid care, and blinking exercises) is insufficient and fails to produce noticeable improvement, LacryStim® can be used alone or in combination with other meibomian gland treatments to produce clear and noticeable improvement in symptoms and ocular function. ■

MARIE-CAROLINE TRONE, MD

- Ophthalmologist, Saint-Étienne University Hospital, France
- m.caroline.trone@chu-st-etienne.fr
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