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### Key words

Dry Eye Syndrome (DES) - Dry Eye - Ocular Surface Disease (OSD) - Meibomian Gland Dysfunction (MGD) - Tear film - eTAO - C.DIAG® - Meibography - C.STIM® - Intense Pulsed Light (IPL)

## Summary

Diagnosis and treatment of a female patient with evaporative **dry eye syndrome (DES)** and **meibomian gland dysfunction (MGD) aggravated** following a **blepharoplasty** and an eyelash extension procedure. A full diagnosis was established via **clinical exams** and examinations using the **C.DIAG®** platform. Symptomatic treatment combined with **Intense Pulsed Light (IPL)** treatment using the **C.STIM®** IPL device was initiated for this patient. After three IPL sessions with C.STIM®, **the patient regained her quality of life** thanks to a clear **improvement in her symptoms** and an **improvement in her MGD**, with **better meibum expression and quality**.

1

Clinical  
examination

2

Para-clinical  
examination

3

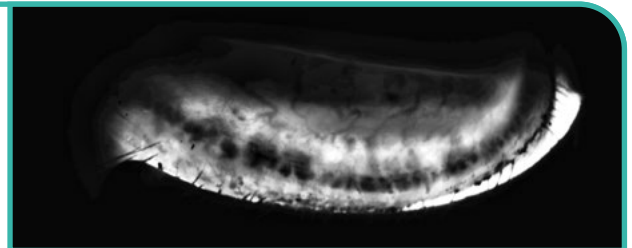
C.STIM® IPL  
treatment

4

Results  
at 2 months

## Anamnesis

- 55-years-old woman
- Emergency doctor
- Blepharoplasty in 2017 and eyelash extensions
- Recurrent superficial punctate keratitis since blepharoplasty
- Visual discomfort with a burning sensation, fluctuating visual acuity and stinging, eyes sticking in the wake-up time



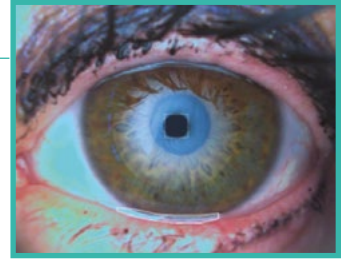
- **Symptoms frequency: 7/10**
- **Symptoms intensity 7/10**
- **DEQ-5=14**

# 1 Clinical examination

**Existing treatment:** Artificial tear on demand (Répadrop®, Neovis total®)

## DES Risk factors:

- Menopause
- Use of screens
- Wearing a mask
- Make-up
- Previous chalazion

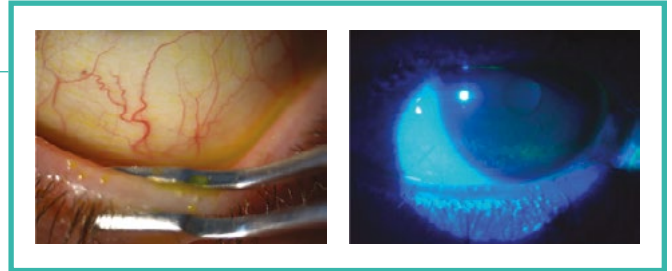


## Ophthalmologic exams:

OD	AV	OS
10/10 P2	AV	10/10 P2
+0,00 (-0,50 180°) add+2,50	Refraction	+0,75 (-0,50 170°) add+2,50
12	IOP	14

## Slit lamp exam:

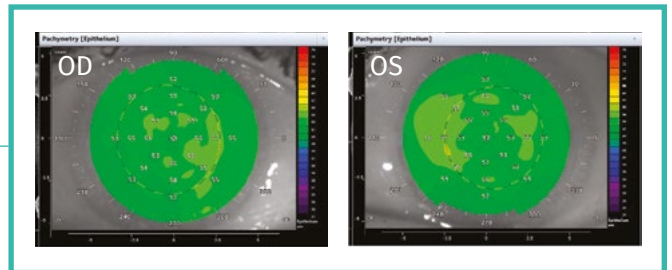
- Inferior KPs OD>OS
- Scalloped palpebral border
- Rubbing eyelashes on lower right eyelid
- Thick meibum with blocked glands relieved using forceps



# 2 Para-clinical examination

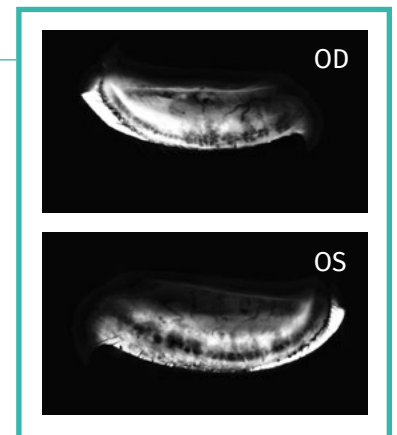
## 1. Epithelial mapping:

- Beginning of epithelial atrophy in the upper and areas of the cornea



## 2. Ocular surface analysis with C.DIAG® imaging platform

- Tear meniscus height: non-pathological
- Interferometry: ODS disturbed
  - ➔ **Disruption of the lipid layer**
- NIBUT: decrease to 4.6 sec OD // 6.2 sec OS
  - ➔ **Severe lacrimal instability**
- Transillumination meibography: severe atrophy of the meibomian glands, presence of numerous telangiectasias, blocked glands

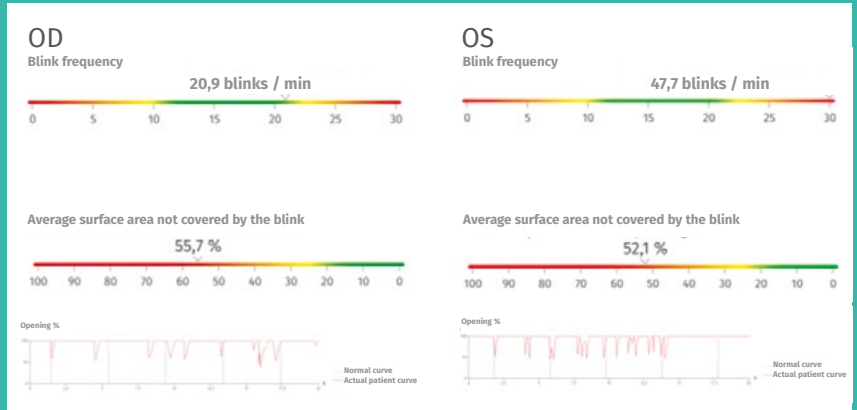


## Focus | C.DIAG® blinking analysis

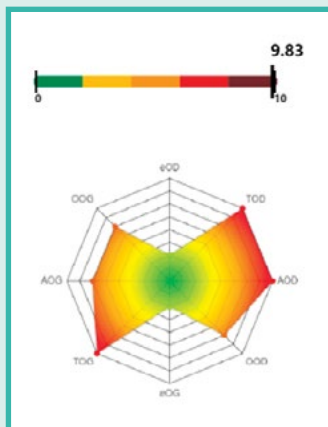
The results show abnormal blinking, with increased blinking frequency and incomplete blinking most of the time.

Working at a screen is the main cause of incomplete blinking. In addition, the blepharoplasty affected the delicate dynamics of the eyelids.

The report generated by C.DIAG® can be used to help educate patients.



## Focus | eTAO score



The eTAO score is a new DES severity score. This score can be used in two ways: to screen patients before any refractive corneal/lens procedures, so that any latent dry eye is not missed, or to monitor patients with dry eye syndrome. It helps to guide treatments and can be used for patient education.

The score includes severity levels for:

- **e**: epithelial atrophy
- **T**: telangiectasia
- **A**: atrophy of meibomian glands
- **O**: obstruction of meibomian glands

It is determined separately for each eye, taking into account the patient's history, age, sex and the intensity and frequency of symptoms.

## Diagnosis

Severe meibomian gland dysfunction (MGD) is identified, causing evaporative dry eye syndrome (DES) aggravated by blepharoplasty.

➔ **An ophthalmological assessment should always be performed prior to blepharoplasty, to determine whether the patient has dry eye syndrome.**

## Proposed treatment

- Eyelid care
- Blinking exercises
- Théalose® and Cationorm® eye drops during the day
- Liposic® eye gel in the evening
- Monthly treatment with Azyter® eye drops

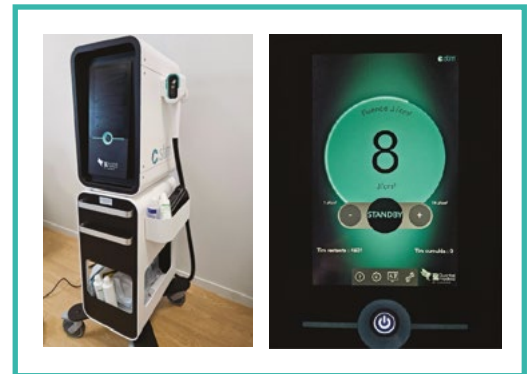
## Two-month check-up

- Patient less bothered during the day
- Symptoms are reduced but are still present, despite good treatment compliance
- Persistent KPs on clinical examination

- ▶ **C.STIM® IPL treatment is initiated**
- ▶ **Continuation of symptomatic treatment**

## 3 C.STIM® IPL treatment

- Treatment protocol: 3 sessions on D0, D15 and D30
- 4 shots per side per session at a fluence of 8 J/cm<sup>2</sup>
- Protective goggles for both the patient and the doctor
- Meibum expression using forceps done after each IPL session



## 4 Results at 2 months

- **Clear improvement in symptoms experienced:**
  - ▶ **Feedback from the last session:** the patient has less discomfort in everyday life to the point of forgetting her daily routine.
  - ▶ **Artificial tears:** No more need expressed by the patient.
  - ▶ **Warming mask and massaging:** she carries out eyelid hygiene several times a week.
  - ▶ **Blinking exercise:** She practices during her shifts and at home, and her eyes feel wetter after these exercises.
  - ▶ **Environment:** she no longer notices the annoyance of draughts and immediately puts preventive measures in place.
- **MGD improvement:** paler flow when using the forceps
- **Symptomatic treatment must be continued over the long term**
- **IPL treatment repetition if necessary**

## Conclusion

- C.STIM® IPL treatment is **fast, effective and safe**
- It can be offered to **patients with MGD** when symptomatic treatment is insufficiently effective
- **Symptoms improvement** while reducing dependence on medication
- **Patient's quality of life improvement**