

CLINICAL CASES OF LUCIO BURATTO

Dry eye in patient with clinical history of chronic blepharitis and chalaziosis

edited by
Dr. Maria Luisa Verbelli, Dr. Alessia Bottoni



1 Observation and anamnesis

Arrives at our observation at CIOS, Italian Center for Dry Eye at CAMO, a 56-year-old patient with blepharitis, redness, ocular burning and abundant mucous secretion present in both eyes. Furthermore, an enlarged lymph node is seen in the right laterocervical site.

At ocular anamnesis the patient reports chronic blepharitis from the juvenile age, multiple chalazion in both eyes, an operation for right upper eyelid chalaziosis in 2006 (4 upper eyelid chalazion, 3 in the lower); negative anamnesis for these pathologies in the family. The patient is shortsighted since adolescence, has not had any other eye operations and has no ocular allergies.

The general anamnesis does not report major systemic diseases or medication intake.

On objective examination of the anterior segment we find bilaterally: reduced lacrimal meniscus, posterior blepharitis, obstruction of all the Meibomian glands of the upper and lower eyelids, conjunctival hyperemia with dry spots, transparent cornea, transparent crystalline. The no contact tonometry is 15 mmHg in RE, 16 mmHg in LE.

The OCT of the macula does not show changes in both eyes. The BUT is 4.9 seconds in RE, and 15.6 seconds in LE.

The Phenol Red Test is 22 mm in RE, 26 mm in LE.

Osmolarity (measured with the Tear Lab) is 289 mOsm / L in RE, 294 mOsm / L in LE.

The area of loss of the Meibomian glands (measured with Sirius CSO) is 64.8% in RE, 33.4% in LE.

An enlarged lymph node is present at palpation in the laterocervical site.

The visus is as follows:

Vre 10/10 SF -6.00

Vle 10/10 SF -5.75

2 What to do?

We have illustrated to the patient the following possible therapeutic procedures:

- topical and oral anti-inflammatory therapy (for the treatment of chronic blepharitis);
- artificial tears with lipid content (due to the evaporative dry eye condition resulting from the dysfunction of the Meibomian glands);
- wet warm compresses or Eyegiene thermal glasses followed by eyelid massage (for proper hygiene of the eyelid edge and to purge the Meibomian glands);
- pulsed light (to stimulate the Meibomian glands to resume their normal functioning. It has been verified that the emission of light pulses at high power leads to a stimulation of the neurotransmitters that induce the Meibomian glands to produce, by contracting, greater secretion: thus increases the natural lipid flow that reduces the evaporation of tears).
- Lipiflow (thermal pulsation associated with mechanical massage of the palpebral edges which facilitates the opening and cleaning of the ducts of the Meibomian glands);
- right laterocervical lymph node ultrasound (to ascertain its nature).

3 Adopted solution

- Oral therapy with antibiotics: Bassado (doxyliline) 100 mg, 2 caps. together on the first day, then 1 cap./day for another 10 days (doxycycline is one of the most systemically used antibiotics in the treatment of blepharitis for its effectiveness on staphylococcus, microorganisms commonly involved in this pathology).
- Netildex single dose eye drops 1 drop 3 times a day for 15 days followed by Exocin eye drops 1 drop 3 times a day for another 15 days in both eyes (for their antibacterial efficacy towards the most common germs present on the ocular surface and on the related eyelid skin associated with the powerful anti-inflammatory action of dexamethasone).
- Optive Fusion single dose eye drops 1 drop every 3 hours in both eyes (without preservatives which, with their toxicity, influence the cellular vitality of the ocular surface epithelium and with lipid micelles which reconstruct the superficial lipid layer altered by the associated meibomitis).
- Optive gel before sleep in both eyes (a product with lipid content specifically designed to protect the ocular surface during prolonged night time).
- Warm compresses for at least 5 minutes a day or alternatively Eyegiene thermal goggles (the heat facilitates the detachment of scales and their removal from the eyelid edge and helps to mobilize the sebum retained inside the Meibomian glands).
- Careful evening cleansing of the eyelids with a few drops of tea Tree Oil diluted in water at room temperature: obtained from green tea leaves has anti-inflammatory, antibacterial, antiviral, antifungal, antiparasitic and is non-toxic at the right dose.
- Omega 3 caps. for at least six months (it is indeed known that the introduction of omega 3 fatty acids affects inflammatory activity of the organism having the ability to reduce the symptoms, and



Fig. 1 Handpiece for the application of the pulsed light of the Eye-Light instrument



Fig. 2 Red mask to apply after the pulsed light treatment

the markers of inflammation also at the level of the conjunctiva and eyelids).

- Eye-Light pulsed light treatment with OPE technology (Optimal Power Energy) which is a patented technology of wide-spectrum light from which the emissions that are not pertinent to the treatment are excluded, allowing to optimize the stimulation and regeneration of the tissues; the emission of heat stimulates the Meibomian glands to resume normal function.

Three sessions have been scheduled at 15 days one from the other.

The following parameters were set, evaluating the diagnostic tests and the clinical examination of the patient: level of severity of the dry eye: 3; skin pigmentation: 2; energy: 56 J; pulse duration: 10 milliseconds; 15 minutes of red thermal mask (Fig. 1 and 2).

4 Results

At one month from the beginning of the therapy the patient reports a significant subjective improvement.

Regression of the right laterocervical lymph node occurred in which the ultrasound showed the reactive inflammatory nature. Under slit-lamp examination, there is still a reduced lacrimal meniscus, while no blepharitis and conjunctival hyperemia are detected with dry spots; the number of obstructed Meibomian glands has also been reduced. It is planned to continue the treatment with Eye-Light (the patient continues the rest of the therapy): 3 sessions scheduled every 15 days.

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1° Eye-Light Treatment

Parameters of Eye-Light kept unchanged in the 3 sessions: severity level of dry eye : 3; cutaneous pigmentation: 2; energy: 56 J; pulse duration : 10 milliseconds; infrared mask treatment duration: 15 minutes.

RE		LE
4,9 sec	BUT	12,3 sec
22 mm	Phenol Red	27 mm
292	Osmolarity	289
64,8%	Area of loss of the Meibomian glands	38,0 %
67 mm	Lipid layer	92 mm

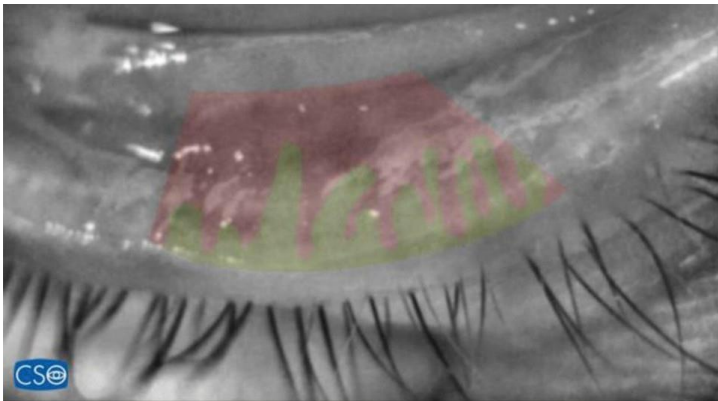


Fig. 3 Meibomography before pulsed light treatment : the loss of the Meibomian gland is 64.8%.

2° Eye-Light Treatment

Exams performed before the second session.

RE		LE
7,95 sec	BUT	12,3 sec*
12 mm	Phenol Red	22 mm
308	Osmolarity	296
44,5%	Area of loss of the Meibomian glands	23,5%
50 mm	Lipid layer	79 mm

*unchanged

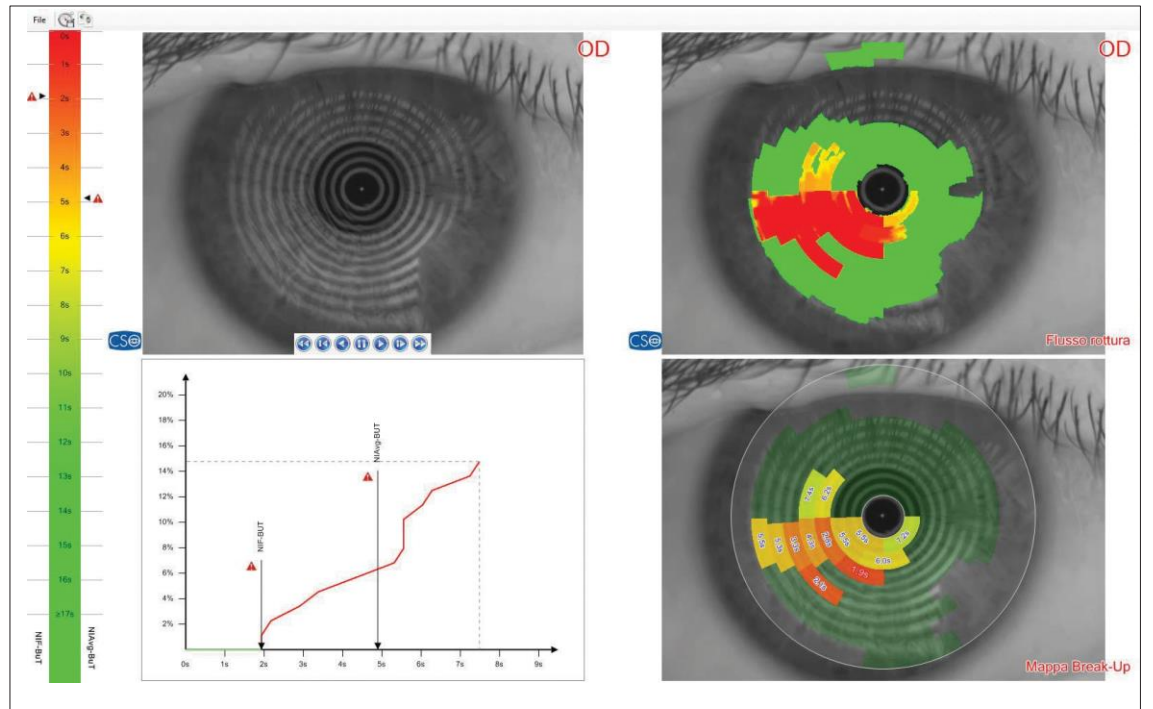


Fig. 4 NIBUT exam before treatments: The first tear film break occurs after 1.9", while the average rupture occurs in 4.9"

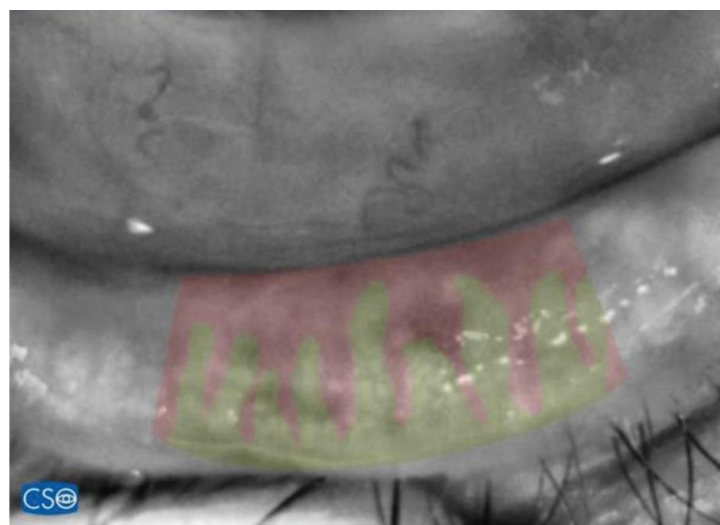


Fig. 5 Meibomography after Eye-Light treatments cycle: the loss of Meibomian glands has decreased to 49.5%

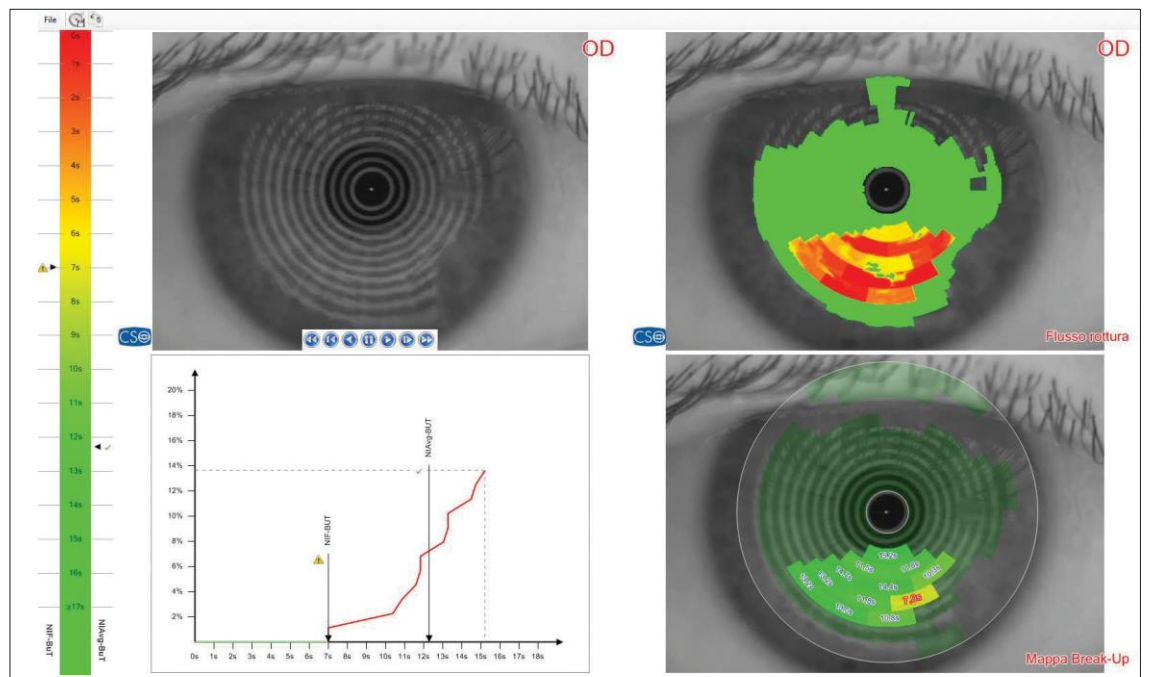


Fig. 6 NIBUT exam after treatments: the first tear film rupture now occurs after 7.0", while the average rupture occurs after 12.2"

3° Eye-Light Treatment

Exams performed before the third session.

RE		LE
12,2 sec	BUT	12,3 sec*
26	Phenolo Red	25
294	Osmolarity	284
49,51%	Area of loss of the Meibomian glands	34,21%
47 mm	Lipid layer	58 mm

*unchanged

5 Conclusions and considerations

The patient is extremely satisfied, no more burn feeling; blepharitis has been resolved, no more ocular redness neither mucous secretion. After treatment with Eye-Light, the BUT ,the area of loss of the Meibomian glands and Osmolarity in LE have significantly improved. The Dry Eye Syndrome is a multifactorial pathology and as such should be treated with multiple and different therapeutic methods.