MANAGING THE LID MARGIN AND LASHES: IN-OFFICE PROCEDURES

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DISCLOSURES
Allergan
Bausch and Lomb
BioTissue
Box Medical Systems
Lumenis Inc.
Quidel Corporation
Science Based Health
Shire
Sight Sciences
SunPharma
Tolosa Vineyards

CONDITIONS TO CONSIDER

• COMMON CONDITIONS SEEN DAILY IN THE OPTOMETRIC PRACTICE. THIS COURSE WILL REVIEW THE PREVALENCE, DIAGNOSIS, AND THEN FOCUS ON IN-OFFICE TREATMENTS OPTIONS FOR EACH.

MEIBOMIAN GLAND DYSFUNCTION
- ANTEROPLACEMENT AND THICKENING OF LINE OF MARX
- DEMODEX BLEPHARITIS

WHY OFFER IN-OFFICE PROCEDURES

OCULAR SURFACE DISEASE IS PREVALENT, EVERY DAY, ALL DAY
OSD IS OFTEN MULTI-FACTORIAL AND REQUIRES MORE THAN ONE APPROACH
DIFFERENTIATE YOUR PRACTICE
HIGHER LEVEL OF PATIENT SATISFACTION (SOCIAL MEDIA, PAYMENT IMPLICATIONS, MACRA, ACO, HEDIS)

WHY OFFER IN-OFFICE PROCEDURES

CREATES A CULTURE OF WELLNESS, PROACTIVE, NOT REHABILITATIVE
IN MY PRACTICE, WE WANT OUR PATIENTS TO LOOK, FEEL, AND SEE THEIR BEST
DIVERSIFY REVENUE STREAM
IMMUNE TO DOWNWARD PRESSURE FROM INSURANCE
LESS DEPENDENT ON VISION PLANS

WHY OFFER IN-OFFICE PROCEDURES

ALTERATIONS IN LINE OF MARX
- DEBRIDE

MEIBOMIAN GLAND DYSFUNCTION

IN-OFFICE PROCEDURES

- MGD
- LIPIFLOW
- MANUAL EXPRESSION
- IPL
- E-Lux
- ALTERATIONS IN LINE OF MARX
- DEBRIDE
- BLEPHARITIS
- ZOCULAR
MEIBOMIAN GLAND DYSFUNCTION

TFOS INTERNATIONAL WORKSHOP ON MGD, 2011

Meibomian gland dysfunction (MGD):
- chronic, diffuse abnormality of the meibomian glands
- characterized by terminal duct obstruction and/or qualitative/quantitative changes in the glandular secretion
- It may result in:
  - alteration of the tear film
  - symptoms of eye irritation
  - clinically apparent inflammation
  - ocular surface disease

PREVALENCE


Debra A. Schaumberg,1 Jason J. Nichols,2 Eric B. Papas,3 Louis Tong,4 Miki Uchino,5 and Kelly K. Nichols2

DIAGNOSIS

Get a symptom baseline, SPEED or OSDI
- Grade the function and anatomy of the glands
- Express glands, ideally with Meibomian Gland Evaluator (MGE), which mimics blink pressure, or your thumb
- Count the number of functioning glands. Minimum of 6 should secrete oil
- Visualize glands with transillumination, Lipiview, Lipiscan, Meibox or Keratograph

GRADING MG FUNCTION

Grading scheme
- Degree 0: Normal
- Degree 1: 1 or 2 glands partially obstructed
- Degree 2: 3 or more glands obstructed
- Degree 3: 4 or more glands obstructed

MEIBOMIAN GLAND DYSFUNCTION

GRADES


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IMAGING MEIBOMIAN GLANDS

- TECHNIQUES AND IMAGES
  - TRANSILLUMINATION
  - OCTOGON KERATOSCOPY
  - TRANSCIENCE PHOTODYNAMIC
  - TEARSCIENCE LIPIVIEW II
  - MEIBOX

Pismo Beach, CA
TRANSILLUMINATION IMAGING MEIBOMIAN GLANDS

- Darken the exam room, evert the lower lid with transilluminator as patient looks up
- Slit lamp light is also off
- There should be around 25 glands in the lower lid
- Pros: inexpensive and quick
- Cons: this method include a limited field of view, low contrast between structures limiting visualization of details and some discomfort for the patient, cannot image uppers

Meibomian glands are dark, like tiger stripes

OCULUS KERATOGRAPH IMAGING MEIBOMIAN GLANDS

- 25 yo female
- Note gland tortuosity

Multi-function instrument:
- Corneal topography
- Anterior seg photography
- Zernike, Fourier analysis
- Contact lens fitting
- Keratometry
- JENVIS REPORT
  - Tear meniscus height
  - Lipid layer thickness
  - Meibomian gland imaging
  - Tear film break-up time
  - New: Crystal Report, aligns with VS Dry Eye Protocol

photo by Oculus

MEIBOX IMAGING MEIBOMIAN GLANDS

photo by Oculus

MEIBOX TOWER – CENTRAL SCREENING SOLUTION
CENTRALIZED WORK FLOW SOLUTION
The first and only dedicated high definition (HD) gland imager that allows eye care professionals (ECPs) to efficiently evaluate meibomian glands in busy practices. The new rapid imager was created with end users in mind. Fast and intuitive, LipiScan harnesses patented dynamic meibomian imaging (DMI) technology to produce high definition images of meibomian glands. LipiScan allows ECPs to assess meibomian gland structure during routine workups in any practice setting.

Indications for Use: The LipiView II Ocular Surface Interferometer is an ophthalmic imaging device that is intended for use by a physician in adult patients to capture, archive, manipulate and display interferometric observations of the tear film. Using these images, LipiView II measures the absolute thickness of the tear film lipid layer.

- Meibomian glands under near-infrared (NIR) illumination.
- The ocular surface and eyelids under white illumination.

The LipiFlow® Activator, a single-use sterile device, safely and comfortably delivers automated therapeutic energies to each meibomian gland while preserving the delicate structures of the patient’s eye.

- Supported by 36 patents and seven years of dedicated research, LipiFlow® provides a level of accuracy and quality that allows eye care professionals to treat their MGD patients with confidence and ease.
- Takes 12 minutes to do both eyes (at the same time).
- Comfortable to patients.
- Very consumable costs.
- Single treated last 1 year minimum.
• Apply activators
• Ensure good contact
• Use tape to hold in place
• Tech sits with patient
• Can be paused if needed
• Best in cooler room
• Music is helpful

MGB OFLO THERMOFLO

- The MiBo delivers an effective temperature of 108 degrees within a variance of less than 3%. The unit has an adjustable timer allowing for physician-controlled customization of therapy.
- Perform three consecutive treatments. The first is 12 minutes per lid, the second is performed 1 week later and lasts 10 minutes per lid, and the third is performed 2 weeks later and lasts 8 to 10 minutes per lid.
- No consumables
- Lacks peer-reviewed research

photos by Scott Schachter

MGD TX
MASTROTA PADDLE

- Titanium. Smooth. Designed to gently and effectively express meibum from the meibomian glands.
- When positioned behind the anesthetized eyelid parallel to the glands, gentle digital pressure on the outer lid promotes meibum egress.
- Heat for mask 7-10 minutes
- Instill 1 drop proparacaine
- Wear gloves, can use cotton bud
- Start nasally and work temporally
- Work from the distal end of the gland toward proximal
- Use firm, steady pressure. Give thickened oil time to express
- Pros: inexpensive, gives symptomatic relief
- Cons: uncomfortable for patients, may need to be repeated often, time consuming

photos by MIBOFLO

ANTEROPLACEMENT OF LINE OF MARX

- The line of Marx is the mucocutaneous junction between palpebral conjunctiva and the eyelid just posterior to the meibomian glands, is around 0.1mm wide, and visible upon upgaze without lid eversion. It is the separation of keratinized and non-keratinized epithelium.


REVIEW OF ANATOMY

- A cannula used to open obstructed glands
- Topical anesthetic is used
- Seems to provide relief, between 1-6 months, up to 18 months
- Can provide quick relief, but may be uncomfortable and cause orifice heme

FIGURE 1 MIBOFLO 2 mm Meibomian Gland Intraductal Probe. (Photo courtesy of MIBOFLO)

DIAGNOSIS

- Apply lissamine green
- Look at the Line of Marx
- Normal is a thin, straight line
- Look for encroachment towards meibomian glands and elevation
- Staining toward the eye is lid wiper epitheliopathy (FRICITION)

Note encroachment toward MGs
LWE also present

GRADING SCALE

LID WIPER EPITHELIOPATHY

DEBRIDING THE PROCEDURE

- Apply proparacaine or tetrasisic in the eye and have the patient blink
- Instill lissamine green
- Visualize the Line of Marx (LOM)
- Use a golf club spud or chalazion scoop
- Debride entire width of the keratinized lower lid margin, going over the meibomian glands, followed by debridement of the stained LOM
- Do not debride the lid wiper region
ANTEROLACEMENT OF LINE OF MARX
SUBSET OF MGD: DEBRIDE SCALE

- Start nasally and work laterally
- Go over LOM and then over MGs

 DEMODEX BLEPHARITIS
MICROSCOPIC APPEARANCE

 DIAGNOSIS

- Cylindrical dandruff is pathognomonic
- Other signs:
  - conjunctival redness
  - madarosis
  - misdirected lashes
  - weak, brittle lashes
  - lid hyperemia
  - lid telangiectasia
  - lash distention

 PREVALENCE

- In-office research:
  - Demodex blepharitis was present in 32% of all subjects
  - Scott E Schachter, Aubrey Schachter, Milton M Hone, Scott G Hauswirth, ARVO, 2014

 CLINICAL CASE

- 22 yo male. Note uneven lid line and lash distribution, lash distention, collarettes
- Before and after 1 month lid hygiene, bid, OU
DEMODEX BLEPHARITIS

- Blephex
- Instill a drop of Tetravisc
- Soak (saturate) tip in Blephex solution
- It should be foamy as you go
- Use a new tip for each lid
- Wash along lash line and lid line over meibomian glands
- Push harder if it tickles too much
- Do not touch behind the slit lamp
- Use gloves
- Rinse thoroughly after

BLEPHEX, BEFORE AND AFTER

DEMODEX BLEPHARITIS

BLEPHEX

Push the button once to start, again to switch directions, and again to turn off.

Work the base of the lashes and the lid margin.

Check your work at the slit lamp and can touch up there.

CD can be stubborn.

EVIDENCE-BASED PROCEDURES

- Read the research to support your treatment decisions.

THE RESEARCH

CONCLUSIONS: A single VTP treatment can deliver a sustained mean improvement in meibomian gland function and mean reduction in dry eye symptoms, over 12 months. A single VTP treatment provides significantly greater mean improvement in meibomian gland function and dry eye symptoms as compared to a conventional, twice-daily, 3-month regimen. Early VTP intervention for meibomian gland dysfunction is associated with improved treatment outcomes.

**THE RESEARCH**

**CONCLUSIONS:** Intraductal meibomian gland probing seems to improve meibomian gland lipid levels, and it may be a good treatment option for cases of o-MGD that are resistant to conventional treatment.


**THE RESEARCH**

**CONCLUSIONS:**
The debridement-scaling of the LOM and lower lid margin provides statistically significant symptom relief and improvement in the MG function. The novel procedure should be considered in the management of MGD and evaporative dry eye.


**THE RESEARCH**

**MANUAL EXPRESSION**

"It has been known for over 150 years that treatment for MGD/obstruction to be optimally effective the stagnated contents of the glands must be evacuated. Until recently, the only known method to evacuate stagnated gland contents has been to manually express the glands using physical force. This procedure although effective is also extremely uncomfortable. In fact, it has been reported that the primary limitation to efficacy of manual expression is pain." Caroline Blackie

**IN-OFFICE LID TREATMENTS**

**PATIENT AND PRACTICE BENEFITS**

- Higher level of care
- Distinguish your practice
- Has a cash pay component immune to downward pressure from insurance
- Provides symptomatic relief for patients
- Proactive is better than reactive
- Prevalence of ocular surface disease is increasing as our patients’ vision demands increase

**IN-OFFICE PROCEDURES**

**PRACTICE PEARLS**

- Use patient communication sheets
- (join OSDocs on Facebook for resources)
- see www.dryeyecoach.com
- Recommend, check boxes, staff reviews with the patient
- Use anterior segment photos to explain their condition
- Show before and after Blephex pictures
- Follow back in 1-2 months. 3 months is too long.
- Recommend at-home care and sell in your practice

**THANKS FOR YOUR ATTENTION!**

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