MGD Hiding in Plain Sight
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20016 Optometry’s Meeting

Disclosures
• Caroline Blackie, OD, PhD, FAAO – Director of Medical Affairs, TearScience, Financial Interest in TearScience
• Doug Devries, OD – has received honorarium, consulting fees or research funding from Alcon, Allergan, Bausch and Lomb, Beaver Visitec, Biotissue, Ocusoft, Science Based Health, TearLab, Tearscience
• Donald Korb, OD, FAAO - Co-founder of TearScience, Financial interest in TearScience. Has received research funding from TearScience
• Walt Whitley, OD, MBA, FAAO has received honorarium, consulting fees or research funding from Alcon, Allergan, Bausch and Lomb, Beaver Visitec, Biotissue, Ocusoft, Science Based Health, TearLab

PART 1: Looking for MGD
• Present images and audience questions
• Present definitions and metrics
• Present where consensus is lacking
• Challenge audience to make a decision for themselves based on their practice philosophy

Consensus for Diagnosis
• History: Unified consensus for LATE STATE DISEASE ONLY – you know it when you see it.
• MGD with associated obvious clinical signs.

Diagnosing MGD:
What the MGD Workshop told us?
• Diagnosis is ‘based on the demonstration of abnormal anatomy and physiology of the glands’.
• MGD can be an asymptomatic and detectable only by gland expression (function) or meibography (structure).

Clinically Relevant Disease
• A diagnosis of MGD may be made by the demonstration of a single affected gland, but clinically relevant disease is due to the involvement of multiple glands.
Other Chronic Progressive Disease

- Glaucoma
- Diabetes
- Hypertension
- Gum Disease

If you are the patient, isn’t clinically relevant is the first sign of disease?

Early intervention optimizes outcomes

Early intervention requires early detection

When to look for MGD

Diagnosis is ‘based on the demonstration of abnormal anatomy and physiology of the glands’.

EARLY STAGE/ NON-OBSVIOUS  LATE STAGE/ OBVIOUS

Metrics

- Metrics facilitate
  - Early detection
  - Capture of reliable prevalence data
  - Epidemiological studies
  - Treatment optimization

DO WE HAVE DEFINITION OF HEALTHY MG FUNCTION?

- Yes
- No
- Don’t know

YES: Function

- A functional Meibomian Gland is a gland that releases its liquid contents during a deliberate blink.
- The number of functional MGs along the lower eyelid can be counted using the MGE™.

Grading secretion characteristics

When using the MGE there are four possible secretion observations for any single gland orifice.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Secretion Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Clear Liquid/Oil</td>
</tr>
<tr>
<td>2</td>
<td>Colored/Oily Liquid</td>
</tr>
<tr>
<td>1</td>
<td>Insipid (non-secret, toothpaste-like consistency)</td>
</tr>
<tr>
<td>0</td>
<td>No Secretion (includes staped efflux)</td>
</tr>
</tbody>
</table>

The observations can be graded and documented according to the table shown to the left:

When the total number of functional glands is 7 or higher, but there is evidence of compromise to gland function and/or structure, therapy should still be considered.

Other Methods of Evaluating Meibomian Gland Function?

Better for later stage disease
Don’t tell you if the gland will release its oil with very gentle force

DO WE HAVE DEFINITION OF HEALTHY MG STRUCTURE?

• Yes
• No
• Don’t know

Structure

ATROPHY or TRUNCATION
DUCT DILATION

Grading systems – take your pick. They all represent a qualitative or quantitative approximation of gland drop out or duct dilation.

What’s Normal?

• Any abnormal function or structure = MGD
• FUNCTION: If ~50% of the glands are ‘active’ or ‘functional’: Asymptomatic (not necessarily normal or no MGD)
• STRUCTURE: Asymptomatic patients shown to have gland loss of ~30% versus Patients with MGD shown to ~ 50% gland loss. (is this too late?)

How to Look for It?

Perform an MG Assessment:
Evaluate meibomian gland function and structure on all patients

MAKE YOUR OWN DECISION BUT CHOOSE GOOD METRICS
When to look for MGD?

**OPTIMIZE**
- All Patients
  - Add MGD assessment* to every patient exam
  - Early Detection = Early Intervention

**REHABILITATE**
- Patient has Dry Eye
  - Add MGD assessment* to every dry eye exam (self-identified or referred)

*MGD Assessment: The evaluation of gland function and structure

MAKE YOUR OWN DECISION ABOUT YOUR STANDARD OF CARE

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**PART 1: Treating MGD**

- Present primary pathophysiology
- Present treatment concepts

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**Part 2: How to Treat?**

**Therapies**
- Warm compresses
- Eyelid scrubs
- Manual gland expression
- Gland probing

**Challenges**
- External heat application is inadequate
- Significant discomfort
- Limited compliance
- Only upper glands are treated

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**How to Treat MGD**

**CORE MECHANISM IS OBSTRUCTION**


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**Core MGD therapy: Treat Obstruction**

- MGD workshop report recommend obstruction be considered and treated at the earliest stage of MGD (Even Stage 1- prior to symptoms).
- Adjunctive treatments (e.g. inflammation and infection control) are added in later stage disease.

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**Core MGD therapy: Treat Obstruction**

**Conventional approach:**

- Over 150 year history
- Limitation is pain
- Repeat multiple times a year
- Two rigid surfaces are significantly more painful

- Centuries of data
- Limitation is efficacy (minimum of 5°C drop between device and inner lid)
- Daily application
- Safety concerns (multiple reports in the literature and anecdotal experience)
Heat and Evacuate Simultaneously

- Treats obstruction: Heats the inner lid surface with simultaneous gland evacuation.
- Protects the cornea and globe from heat.
- Protects the cornea and globe from pressure.
- Therapeutic temperature = 42.5°C
- Automated: limits user variability.

Supportive Therapy

- Once the obstruction has been addressed in-office, any number of appropriate supportive therapies can be prescribed for MGD.
- Examples of supportive therapies are:
  - Warm compress or other forms of front surface lid heating
  - Lid/ lash scrubs
  - Topical and systemic medications to manage inflammation
  - Nutraceuticals
  - Moisture goggles

Treat Concurrent Conditions

- In conjunction with treating the gland obstruction, a patient may have other concurrent conditions that also require treatment.
- Examples of other conditions that may require concurrent therapy:
  - Blepharitis
  - Demodex
  - Rosacea
- Treatment should be customized to the needs of each patient.

Part 3: Who are Your Patients?

MGD:
THE GUM DISEASE OF EYE CARE
60-70% of the general clinical population has MGD but may be pre-symptomatic.

Early intervention is best.
Early detection is necessary.

High-risk Patient Categories

- Pre-surgical patients
- Glaucoma patients
- Contact lens wearers
- Patients with dry eye
- Patients living a modern lifestyle

Pre-surgical Patients

MGD compromises the first refractive surface.

- 63%-90% of pre-cataract patients have dry eye signs and symptoms.
- *Patients without pre-existing MGD tend to develop it after routine, uncomplicated cataract surgery and that it persists for at least 3 months.
Glaucoma Patients

- Use of Glaucoma medications and MGD are highly correlated.\(^1\)
- Glaucoma is a chronic, progressive disease which means long-term drop use is necessary.
- Consider evaluating your glaucoma patients for MGD.\(^2\)


Contact Lens Wearers

Contact lens wear and MGD are highly correlated.\(^1\)

- Experts recommend that all contact lens wearers be evaluated for MGD and treated, as appropriate.\(^1\)
- Treatment for MGD in contact lens patients has been shown to improve CL wearing comfort and wearing time.\(^2\)


Dry Eye

**MGD:**
THE LEADING CAUSE OF DRY EYE

The ocular surface can only be fully rehabilitated if meibomian gland health is also rehabilitated.


Patients Living a Modern Lifestyle

- Evaporative stress causes MGD through an accelerated aging process of the glands.\(^1\)
- Situations that cause evaporative stress include: contact lenses, non-partial blinking due to staring at devices with screens (e.g. tablet, computers, smartphones) or cataract and refractive surgery.
- Environments low in humidity including air-conditioned or heated home or car, air travel, or sitting directly below a fan may also cause more evaporative stress.


Who are your MGD Patients?

![Dry Eye Diagram](https://example.com/dry-eye-diagram)

Part 4: How it benefits your practice

- Making MGD Management a part of my practice has……
Dry Eye Practice Optimization

- Patients Win: Diagnostic Accuracy
- Insurers Win: Targeted Therapy
- Doctors Win: Practice Growth
- Practices Win: Income Diversification

Dry Eye Center of Excellence

- Objections
- Diagnostic Testing Expansion
- Procedural Service Expansion
- Product Line Expansion
- Practice Growth

Objections

- Slows Me Down
- Low Margins
- Distraction from Primary Care Focus
- Distraction from Retail Business Focus

Diagnostic Testing Expansion

- Point of Service Testing
- Anterior Segment Imaging
- Allergy Antigen Screening

Procedural Service Expansion

- Punctal Plugs: Collagen, Silicone, Cautery
- BlephEx
- LipiFlow Thermal Pulsation
- MiBoFlo

Product Line Expansion
Practice Growth

Insurance Based Business
Cash Based Business
Value Added Services
Patient Acquisition

Conclusion

- Decide on your practice philosophy.
- Educate your entire staff.
- Add an MGD assessment (function/structure) to all patient encounters.
- Include and prioritize the treatment of obstruction.
- Know that this will benefit your patients and your practice.