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Educational Moments®

How to manage patients with Meibomian Gland Dysfunction (MGD)

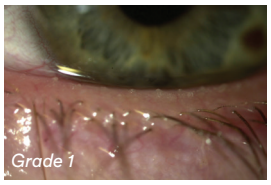
WHAT YOU NEED TO KNOW

Slit Lamp Viewing:

• Diffuse beam • Medium magnification (16x) • Direct illumination

Grading:

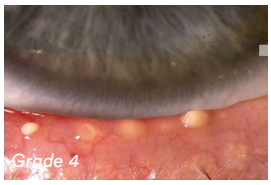
Grade 0: All glands unobstructed (expel clear fluid on mild digital pressure)



Grade 1: One or two glands partially obstructed (expel clear fluid on mild digital pressure)

Grade 2: Three or more partially obstructed glands (glands produce opaque fluid with digital pressure)

Grade 3: One or two blocked glands with many partially obstructed glands (frothy tear film)



Grade 4: More than three blocked glands in each eye with most of remainder partially blocked

Diagnostic expression

1. Count the number of visibly capped glands
2. Grade meibum quality.

Use finger, Q-tip or Meibomian Gland Evaluator (MGE) to assess 5 glands in each of 3 areas: nasal, central and temporal. Look for **number** of glands releasing meibum and **grade meibum quality** (0-45 score). Maximum score is 45 across 15 glands.

NOTE: this is a reverse scale where the highest 'grade' is given to the best appearance:

- Grade 3 Liquid, clear
- Grade 2 Liquid milky
- Grade 1 Thick (toothpaste/ inspissated)
- Grade 0 No secretions

Incidence:

- 4 – 20% (Caucasian population) to over 60% (Asian population);
- Increases with age, blepharitis and rosacea

Aetiology:

- Chronic, diffuse abnormality of meibomian glands (MG), with duct obstruction and/ or qualitative/quantitative changes in glandular secretion.
- Progressive inflammatory process associated with blepharitis, mechanical trauma, lowering temperature of eyelids, microbial contamination, CL wear and make-up.

Symptoms:

- Ocular discomfort
- Dryness
- Irritation & itching
- CL intolerance
- Smeary vision (greasy lenses)
- Photophobia

Signs:

- Absent or cloudy meibomian gland secretions on gland expression
- Frothy tears with reduced tear film quality and break up time
- Thickened lid margins with distorted, possibly capped, meibomian glands
- Marginal dry eye signs (inferior corneal staining, recurrent corneal erosions) clinically apparent inflammation and ocular surface disease
- Discrete lipid deposits or greasy lipid layer over lens surface

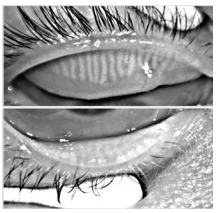


Figure 1: Meibography showing gland drop out, more severe in lower than upper lid

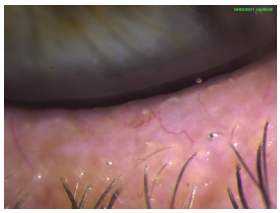


Figure 2: High magnification view of telangiectasia, capped meibomian glands and irregular lid margin

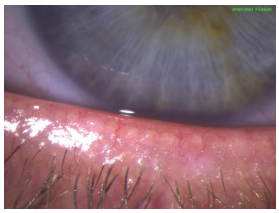


Figure 3: Telangiectasia, capped meibomian glands

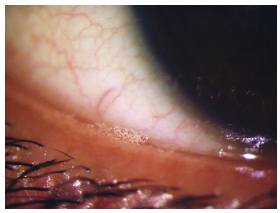


Figure 4: Frothy tears

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WHAT YOU NEED TO RECOMMEND TO YOUR PATIENTS

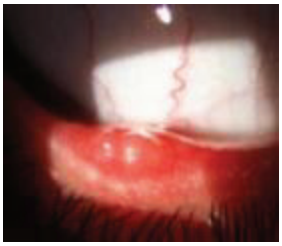
Management:

- Explain chronic nature of condition to patient
- Manage ≥ grade 2 or if symptomatic
- Lens wear can be continued if tolerated
- Daily eyelid hygiene including warming with proprietary masks followed by moderate to firm massage and expression of MG secretions
- In practice microblepharon exfoliation
- Device assisted thermal pulsation and expression in practice
- Consider CLs with shorter replacement frequency
- Artificial tears
- Advice on diet (increase omega-3 fatty acid intake), effect of work/ home environments on tear evaporation and possible drying effect of certain systemic medications
- If severe, systemic tetracyclines may be necessary

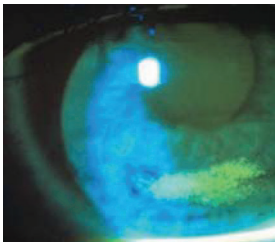
Prognosis:

Generally good resolution of symptoms and improvement in tear quality following treatment.

Differential Diagnosis:



Hordeolum (external/ stye and internal/ meibomian cyst) and chalazion (left)



MGD associated with reduced TBUT and inferior corneal staining (left)

FURTHER READING

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- Schaumberg D et al. (2011) The international workshop on meibomian gland dysfunction: report of the subcommittee on the epidemiology of, and associated risk factors for, MGD. Invest Ophthalmol Vis Sci 2011; 52(4): 1994-2005
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- Siddireddy J et al. Predictive Potential of Eyelids and Tear Film in Determining Symptoms in Contact Lens Wearers. Optom Vis Sci 2018; Nov 95(11): 1035-1045
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- Siddireddy J et al. Effect of Eyelid Treatments on Bacterial Load and Lipase Activity in Relation to Contact Lens Discomfort. Eye Contact Lens 2020; 46(4): 245-253
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