

## **Insights into Treating Chronic Eyelid Inflammation: From Blepharitis to Rosacea**

1 hour

Pamela Theriot, OD, FAAO

### **Description**

Blepharitis and ocular rosacea are common drivers of chronic ocular surface disease. This course will review of the underlying causes, diagnostic challenges, and modern therapeutic strategies for managing eyelid inflammation. It will also discuss causes of the disease including meibomian gland dysfunction, microbiome imbalance, and Demodex mites. Finally, guidance will be given to develop a step by step management plan, from foundational lid hygiene, prescription medications, and in-office procedures.

### **Objectives**

- Identify appropriate diagnostic techniques for evaluating eyelid margins, meibomian gland function, corneal involvement, and Demodex-related disease.
- Develop a stepwise, evidence-based treatment plan that incorporates conservative therapy, pharmacologic management, antiparasitic agents, and advanced procedures such as IPL and LLLT.
- Educate patients on long-term disease management, including trigger avoidance, daily lid hygiene, and maintenance strategies to reduce recurrence and improve comfort and visual outcomes.

### **Outline**

#### **I. The Critical Role of the Eyelids in Ocular Surface Health**

##### **A. Eyelid Anatomy and Function**

- Protective functions of the eyelids
- Tear film distribution and maintenance
- Blink physiology
- Importance of eyelid closure

##### **B. Eyelashes and Ocular Protection**

- Normal lash function
- Effects of lash alterations on ocular health

##### **C. TFOS DEWS III Overview**

- Ocular surface homeostasis

- Root-cause management philosophy
- Overview of Diagnostic and Therapeutic Algorithm #2

## II. Eyelid Structural Abnormalities and Functional Disease

### A. Incomplete Lid Closure

- Korb-Blackie Lid Light Test
- Nocturnal lagophthalmos
- Floppy eyelid syndrome
- CPAP-associated exposure

### B. Blink Dysfunction

- Incomplete blinking
- Digital device use
- Impact on tear film stability

### C. Therapeutic Interventions

- Blink training exercises
- Dynamic muscle stimulation
- Improving lid tone and function

## III. Anterior Blepharitis: Pathophysiology and Diagnosis

### A. Classification of Anterior Blepharitis

- Staphylococcal blepharitis
- Seborrheic blepharitis
- Demodex blepharitis

### B. Biofilm Formation and Chronic Inflammation

- Ocular biofilm development
- Relationship to dry eye disease

- Progression to meibomian gland dysfunction

#### C. Clinical Presentation

- Signs and symptoms
- Lid margin findings
- Tear film abnormalities

#### D. Associated Corneal Disease

- Staphylococcal marginal keratitis
- Chronic ocular surface inflammation

### IV. Demodex Blepharitis: Diagnosis and Management

#### A. Epidemiology and Clinical Significance

- Prevalence and disease burden
- Contact lens intolerance
- Impact on quality of life

#### B. Pathophysiology

- Mechanical damage
- Bacterial vector effects
- Chemical inflammation

#### C. Clinical Diagnosis

- Identification of collarettes
- Collarette grading scales
- Slit lamp evaluation techniques

#### D. Evidence-Based Treatment

- Lotilaner ophthalmic solution
- SATURN clinical trials

- Treatment outcomes – MGYLS data
- Long-term management strategies

## V. In-Office and At-Home Management of Anterior Blepharitis

### A. Mechanical Biofilm Removal

- Blepharoexfoliation procedures
- Oscillating lid cleansing systems

### B. Prescription Therapies

- Antibiotic therapies
- Antibiotic-steroid combinations
- Antiparasitic therapies

### C. Home-Care Protocols

- Hypochlorous acid cleansers
- Foams, gels, and lid wipes
- Okra-based cleansing products
- Eyelash extension hygiene considerations

### D. Improving Patient Compliance

- Product selection
- Direct-to-patient fulfillment
- Subscription and maintenance programs

## VI. Posterior Blepharitis and Meibomian Gland Dysfunction

### A. Epidemiology and Clinical Impact

- Relationship between MGD and dry eye disease
- Evaporative dry eye prevalence

## B. Clinical Diagnosis

- Signs and symptoms
- Meibography interpretation
- MeiboScore grading
- Tortuosity assessment
- Segmentation analysis

## C. Preserving Meibomian Gland Function

- Environmental and cosmetic contributors
- Toxicity and gland atrophy
- Importance of early intervention

## D. Emerging Pharmacologic Treatments

- Perfluorohexyloctane ophthalmic solution
- AZR-MD-001 and keratinization management

# VII. Contemporary In-Office Treatments for MGD

## A. Thermal Therapies

- Heat and expression devices
- Manual gland expression

## B. Intense Pulsed Light (IPL)

- FDA approval history
- Mechanisms of action
- Effects on inflammation and gland function
- Clinical outcomes and evidence

## C. Radiofrequency Therapy

- Mechanisms of action

- Effects on meibomian gland function
- Clinical trial outcomes

#### D. Low-Level Light Therapy (LLLT)

- Photobiomodulation principles
- Evidence for dry eye and MGD
- Patient selection

#### E. At-Home Heat Therapies

- Warm compresses
- Infrared mask technology

### VIII. Ocular Rosacea: A Frequently Missed Cause of Chronic Lid Disease

#### A. Epidemiology

- Relationship between facial and ocular rosacea
- Prevalence data

#### B. Clinical Presentation

- Ocular symptoms
- Eyelid findings
- Ocular surface manifestations

#### C. Relationship to Blepharitis and MGD

- Chronic inflammation
- Recurrent chalazia
- Treatment-resistant disease

#### D. Differential Diagnosis

- Allergic conjunctivitis
- Infectious conjunctivitis

- Primary dry eye disease
- Staphylococcal blepharitis

## IX. Management of Ocular Rosacea

### A. First-Line Therapy

- Lid hygiene
- Trigger avoidance
- Preservative-free tears

### B. Pharmacologic Management

- Topical antimicrobials
- Oral doxycycline
- Immunomodulators
- Combination therapy

### C. Procedural Treatments

- IPL
- Radiofrequency
- LLLT

### D. Long-Term Maintenance

- Lifelong management strategies
- Monitoring disease progression
- Patient education and compliance

## X. Summary and Clinical Pearls

### Key Takeaways

- Chronic eyelid inflammation is multifactorial and progressive.
- Biofilm control is foundational to successful management.

- Demodex infestation is frequently underdiagnosed.
- Meibography improves diagnosis and treatment planning.
- IPL, RF, and photobiomodulation have expanded treatment options.
- Ocular rosacea should be considered in patients with treatment-resistant blepharitis and MGD.
- Long-term patient education and maintenance therapy are essential for successful outcomes.