SLEEP APNEA AND THE EYELIDS
Sara Nonhof, O.D.

Floppy Eyelid Syndrome
First described in 1981
Definition:
• easily everted eyelids
• chronic papillary conjunctivitis
• found in obese, middle-aged men

Leibovitch I, Selva D. Floppy eyelid syndrome: clinical features and the association with obstructive sleep apnea. Sleep Medicine. 2006;7:117-22

PATHOGENESIS
- Mechanical theory
- Decreased tarsal elastin
- Lid laxity
- Tear film abnormalities/Meibomianitis
- Chronic inflammation
- Alterations in collagen

http://utahoc.com/floppy-eyelid-syndrome-sleep-apnea/
OCULAR ASSOCIATIONS

- Eyelids
- Conjunctiva
- Cornea
- Glaucoma

OCULAR ASSOCIATIONS: EYELIDS

Function: protect ocular surface
- Become easily distorted and everted

Other pathologies reported
- Ptosis
- Dermatochalasis
- Blephrochalasis
- Upper lidtech ptosis
- Entropion/Ectropion
- Blepharitis, Meibomianitis, Demodex

OCULAR ASSOCIATIONS: CONJUNCTIVA

- Chronic papillary conjunctivitis
- Hallmark sign
- Epithelial and stromal changes are non-specific
- May delay in diagnosis
OCULAR ASSOCIATIONS: CORNEA

- Punctate epithelial keratopathy
  - Most common finding
  - Typically only involves affected eye
- Keratoconus
  - Study published in Cornea in May 2015
  - FES patients have lower CH values
  - Sub epithelial scarring
  - Deep neovascularization

OCULAR ASSOCIATIONS: GLAUCOMA

- FES as an Indicator of the Presence of Glaucoma in Patients with OSA
  - Published in J Glaucoma in January 2014
  - 152 patients
  - Prevalence of glaucoma
    - Total: 12.9%
    - With FES: 23.07%
    - Without FES: 5.3%
  - Possible that elastic fiber depletion may cause changes to lamina cribosa or TM
  - Advise screening patients with FES for glaucoma

SYSTEMIC ASSOCIATIONS

- Obesity
- Obstructive sleep apnea-hypopnea syndrome
- Hypertension
- Diabetes mellitus
- Ischemic heart disease
- Hyperlipidemia
- Skin pathologies
**OSAHS**

- **Clinical definition**
  Partial or complete closure of upper airway despite ongoing respiratory effort.
  Leads to recurrent arousals, intermittent hypoxemia, and sleep fragmentation.

- **Prevalence**
  - 1-7% among adult men
  - 2-5% among adult women

- **Risk Factors**
  - Male sex
  - Obesity
  - Advanced age

- **Linked to an increase in cardiovascular and cerebrovascular morbidity and mortality**

- **Diagnosed with polysomnography**

- **Treatment**
  - Weight loss
  - CPAP
  - Positional therapy
  - Surgical intervention

---

**FES AND OSAHS**

- Several studies linking the two conditions
- Originally thought to affect obese male only
- If FES is present, but OSAHS undiagnosed, consider referral for a polysomnography

- **Prevalence**
“Although the prevalence of floppy eyelid syndrome in patients in OSAS is relatively low, 4.5%-5.0%, OSAS is seen in 96%-100% of patients with floppy eyelid syndrome.”


**DIAGNOSIS**

- **Symptoms**
  - Non-specific irritation
  - Foreign body sensation
  - Tearing
  - Mucoid discharge
  - Dryness
  - Redness
  - Photophobia

- **Signs**
  - Upper lid laxity
  - Papillary conjunctivitis
  - Mucoid discharge
  - PSE

**TREATMENT**

- Medical
- Surgical
**MEDICAL TREATMENT**

- Weight loss
- Treatment of OSAHS
- Lid shield at night*
- Lid taping
- Nocturnal lubrication
- Topical steroids
- Topical antihistamines
- Treatment of any blepharitis/meibomianitis

**SURGICAL MANAGEMENT**

- Full-thickness wedge excisions
- Lateral tarsal strip procedure
- Lateral canthal tendon plication
- Lateral tarsorrhaphy

**CASE REPORT**

**CC/HPI**
- 68 year old WM
- Dryness, FBS
- OS>OD
- About 6 months
- Not using any lubrication
- History of allergies

**PERTINENT HISTORY**

- + OSAHS
- Dx about 8 months prior
- (+) CPAP use
- Seasonal allergies
- No other systemic condition reported
- Multivitamin
CASE REPORT

ENTERING DATA
- VA: 20/20 OU
- Pupils: PERRLA
- EOM: FROM, OU
- IOP: 13/12
- Marked lid laxity w/significant dermatochalasis
- 1+ superior papillary reaction, trace inferior papillary reaction
- Blepharitis
- Trace SPK, OU
- Posterior segment: unremarkable

DIAGNOSIS/TREATMENT
1. FES
2. Dermatochalasis
3. Blepharitis
4. Allergic conjunctivitis

Treatment
- Eyelid taping
- Refresh P.
- Monitor in 1 month

CASE REPORT: FOLLOW UP

CC/HPI
- Little to no improvement
- Reports taping lids qhs
- Uses Refresh PM qhs
- Dryness, FBS still present

TREATMENT
- Started patient on Lotemax BID
- Recommended referral to oculoplastics surgeon
- Recommended blepharoplasty
- Consider long term use of anti-histamine

REFERENCES