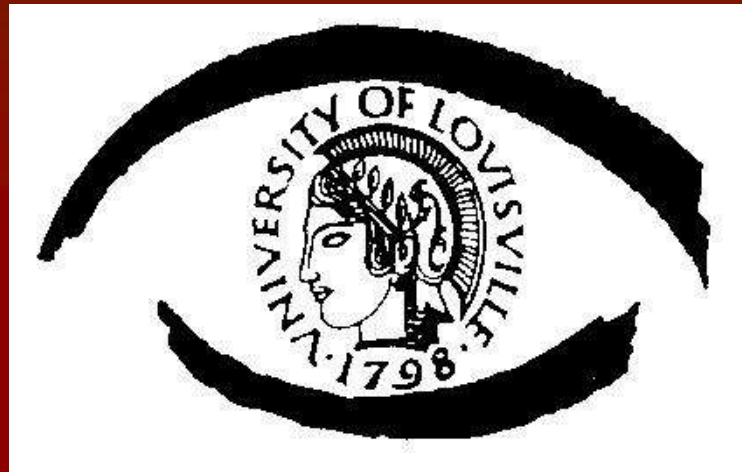


Grand Round



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Presentation

CC: “bothered by his eyelashes”

HPI: 41 yo WM presenting because his right eyelashes are in his line of sight. He reports blurry vision OD for a few months and intermittent irritation with mucous discharge.

POH: refractive error, soft contact lens wear

PMH: none

Family history: HTN, DM

Meds: none

Allergy: NKDA

ROS: snoring, sleeping on his R side for several months

Physical Exam

BCVA $\left\{ \begin{array}{l} 20/20 \\ 20/20 \end{array} \right.$

P $\left\{ \begin{array}{l} 2.5 \rightarrow 1.5 \\ 2.5 \rightarrow 1.5 \end{array} \right.$
No RAPD OU

T_{Tonopen} $\left\{ \begin{array}{l} 16 \\ 19 \end{array} \right.$

EOM: full OU. Orthophoric in primary gaze

CVF: full OU

SLE

OD

L/L upper eyelid laxity
upper lid lash ptosis

C/S 1+ injection
3+ papillary reaction
mucous discharge

K early pannus superiorly

AC quiet

Iris WNL

Lens WNL

DFE WNL



SLE

OS

L/L

WNL

C/S

trace injection

1+ papillary reaction

K

early pannus superiorly

AC

quiet

Iris

WNL

Lens

WNL

DFE

WNL





OD

OS



Pictures taken with equal minimal traction applied to both upper eyelids

Assessment

- 41 yo M presenting with right eyelid laxity, lash ptosis and papillary conjunctivitis
 - > Floppy Eyelid Syndrome

Differential diagnosis

- **Floppy Eyelid Syndrome**
- Chronic conjunctivitis: allergic/infectious
- Dry eye Syndrome
- Blepharitis
- Trichiasis

Plan

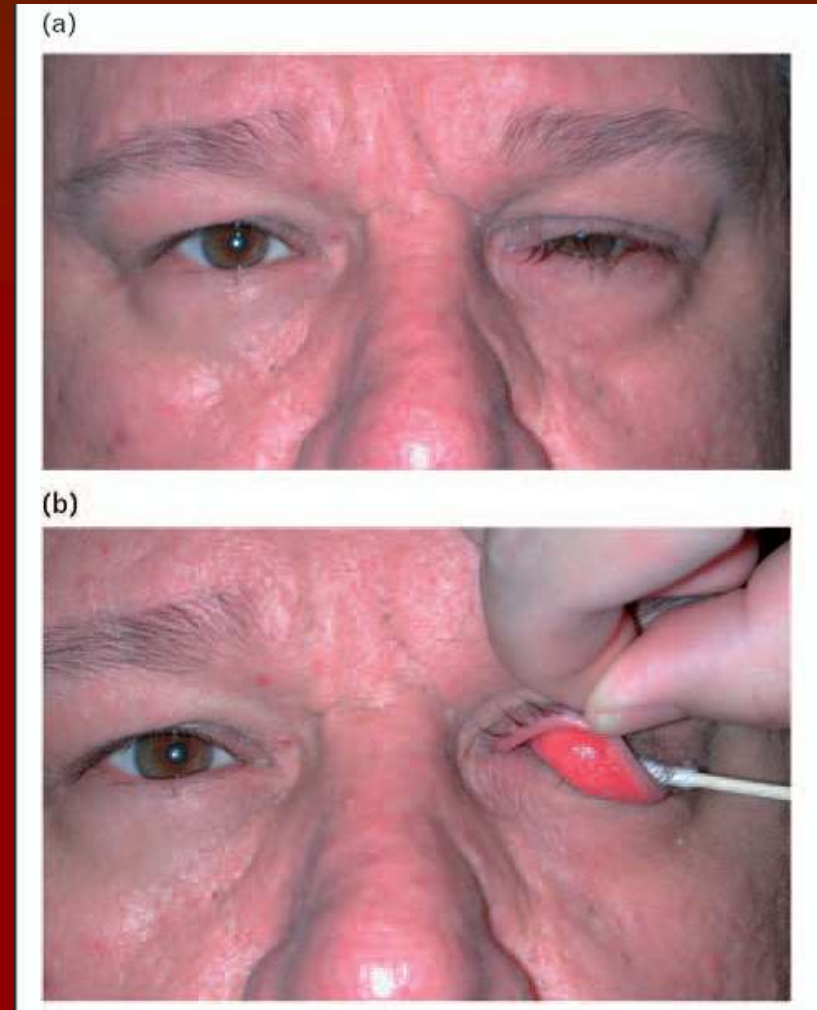
- Sleep study
- Protective shield at night
- Surgical repair: medial and lateral lid tightening with lash rotation

Floppy Eyelid Syndrome (FES)

- First described in 1981 by Culbertson and Osler ¹
- Most commonly affects middle-aged obese men, can affect women in 37% of cases²
- Hallmark: lax upper eyelids that readily evert on elevation of the lid, soft and foldable tarsus
+/- chronic papillary conjunctivitis
- Symptoms are generally non specific often leading to a delay in diagnosis and treatment: the median time from the initial presentation to an ophthalmologist until the correct diagnosis was made was 17 months (range 0–192 months) ³

Ocular Associations

- Eyelid:
dermatochalasis,
blepharitis,
blepharoptosis, **upper
lid lash ptosis**



(a) External photograph of a patient with floppy eyelid syndrome demonstrates thick, redundant upper eyelid tissue causing lash ptosis of the left upper eyelid. (b) The floppy left upper eyelid is easily everted, and very distensible. ⁴

- Cornea: punctate epitheliopathy, neovascularization, keratitis, keratoconus (10%), recurrent corneal erosion syndrome... may progress to corneal perforation ²
- Globe luxation ⁵



Systemic Associations

- Obesity
- **Obstructive sleep apnea (OSA):**
 - repetitive episodes of upper airway occlusion during sleep leading to apnea
 - independent risk factor for the development of high blood pressure, cardiovascular disease, and cerebrovascular disease
 - symptoms : excessive daytime sleepiness, snoring, morning headaches, waking up choking or short of breath
 - Studies have found association between OSA and glaucoma, NAION, and papilledema.

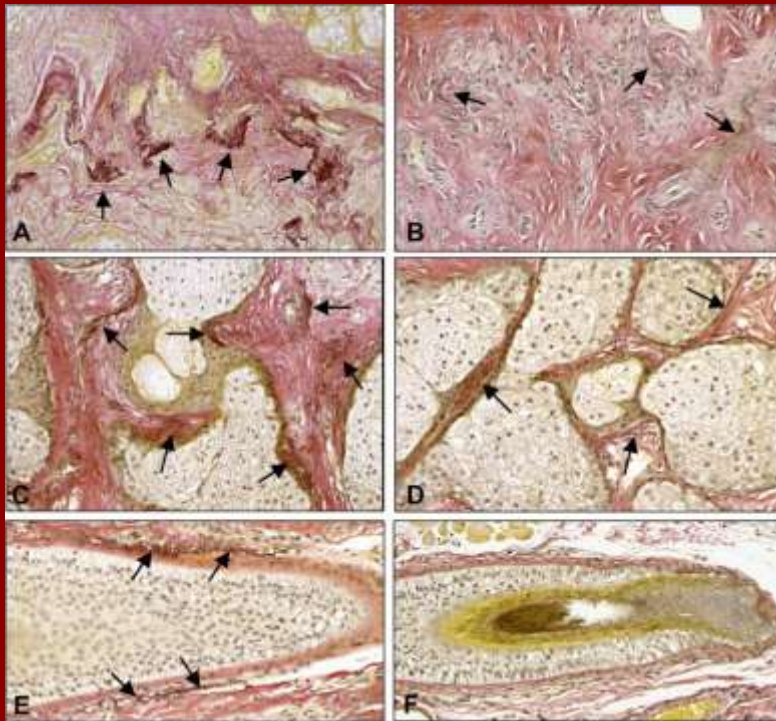
- OSA is common in FES patients (50%-100%) but FES is uncommon in OSA (2.3%)⁶
- patients who have both OSA and FES tend to be younger and have more severe OSA
- Patient diagnosed with floppy eyelid syndrome should strongly be considered for evaluation of obstructive sleep apnea

The associations of floppy eyelid syndrome: a case control study. Ezra DG, Beaconsfield M, Sira M, Bunce C, Wormald R, Collin R. *Ophthalmology*. 2010 Apr;117(4):831-8. Epub 2010 Jan 25.

- **Objective:** To describe the demographic features of a large series of patients with floppy eyelid syndrome (FES) and to investigate the associations of the condition with keratoconus, obstructive sleep apnea-hypopnea syndrome (OSAHS), and a variety of upper and lower eyelid features.
- **Design:** Case control study.
- **Participants:** The test group comprised 102 patients with FES. A control group of 102 patients were recruited from a diabetic retinopathy clinic and matched on a 1:1 basis on age, gender, and body mass index (BMI).
- **Results:** Significant associations were found between FES and OSAHS (OR=12.5), keratoconus (OR 19.3), lash ptosis, dermatochalasis, upper lid medial canthal laxity. No significant association was found between FES and lower lid laxity.

Pathogenesis

- Decrease in elastin fibers in the tarsal plate
- ❖ The Pathogenesis of floppy eyelid syndrome: involvement of matrix metalloproteinases in elastic fiber degradation. Schlötzer-Schrehardt U, Stojkovic M, Hofmann-Rummelt C, Cursiefen C, Kruse FE, Holbach LM. Ophthalmology. 2005 Apr;112(4):694-704



Light microscopy of lid sections stained by van Gieson's method for elastic fibers in (B, D, F) floppy eyelid syndrome (FES) and (A, C, E) control specimens. Elastic fibers appear dark-brown, collagen fibers appear red (original magnification, $\times 50$). A, B, Meibomian gland-poor areas showing nearly complete absence of elastic fibers (arrows) in the collagenous tarsal stroma in FES as compared with control tissue. C, D, Meibomian gland-rich areas showing persisting elastic fibers (arrows) around gland acini in FES. E, F, Details of eyelid skin showing a striking reduction of elastin (arrows) in the periphery of ciliary roots in FES as compared with control tissue.

- Increase expression of elastin-degrading metalloproteinases in eyelids of floppy eyelid syndrome patient with a differential distribution

- Mechanical theory:

eye rubbing or sleeping habits with the face buried in the pillow

- repeated mechanical trauma

- upregulation of metalloproteinases

- reduced eyelid elasticity and stability

- nocturnal eversion of the lids/poor contact of eyelid with the globe

- keratoconjunctivitis

Management

- Conservative treatment:

lubrication, patching/nightly eyeshield

- Sleep study – unclear whether treatment of sleep apnea stabilize or improve the eyelid malfunction

- Surgical treatments to address horizontal eyelid laxity/lash ptosis:

- pentagonal upper eyelid wedge resection
- new techniques that have less visible scarring and preserve more tarsus have been shown to have better long-term success rate ⁷

References

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5. Spontaneous globe luxation and floppy eyelid syndrome in a patient with Hashimoto's disease.Reyniers R, Paridaens D. Eye (Lond). 2007 Feb;21(2):303-4. Epub 2006 Sep 22. No abstract available.
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Thank You !