Cosmetic Eyelid Surgery
Part 2

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No Financial Disclosures

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Outline

- Periorbital Anatomy
- Upper Blepharoplasty
- Eyebrow and Forehead Lift
- Lower Blepharoplasty
- HA Filler and Fat Transfer
- Case Studies

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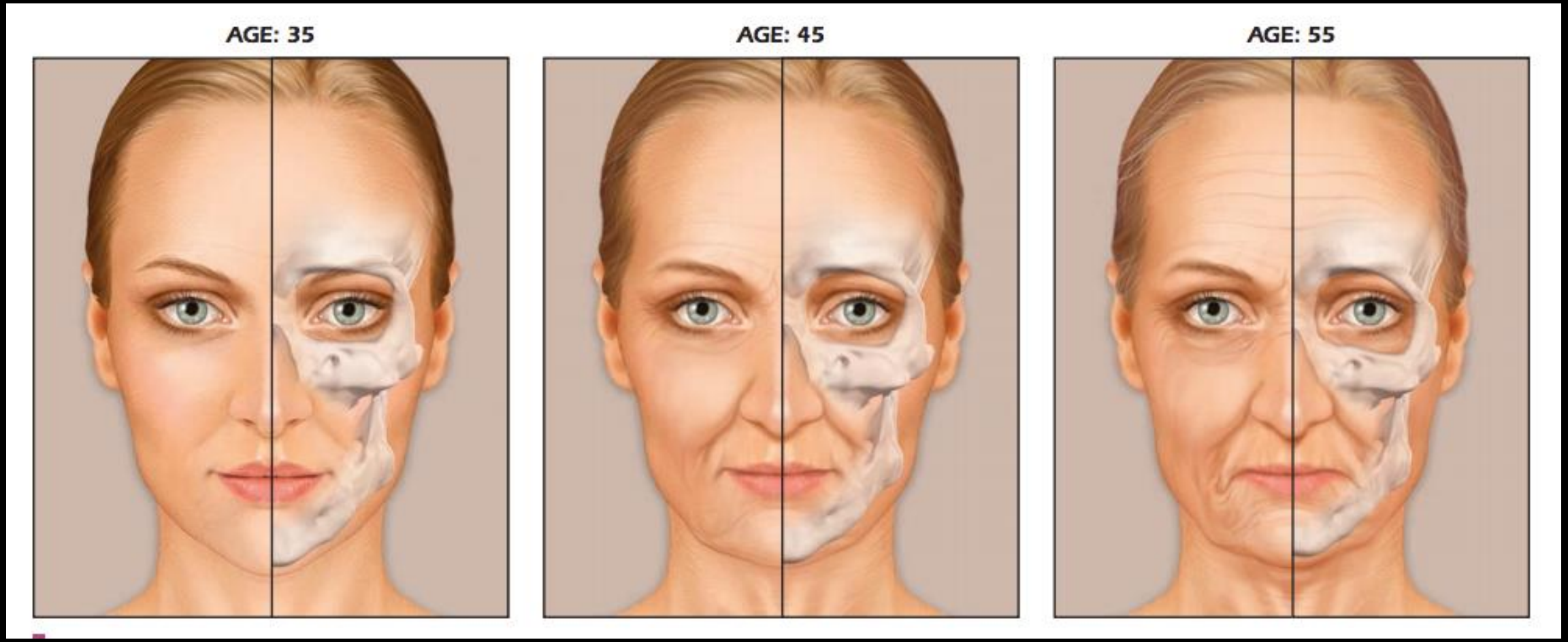
Bony Framework



Source: Galderma

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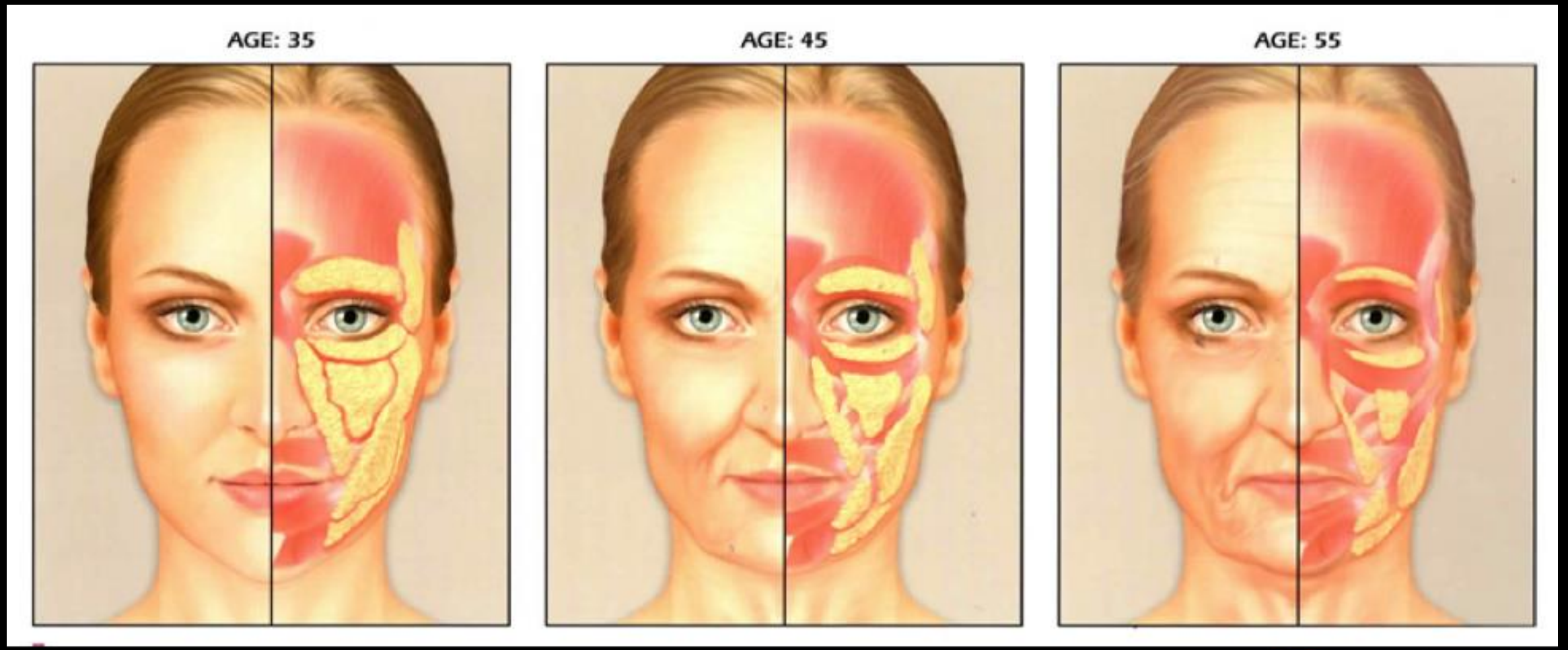
Fat Atrophy



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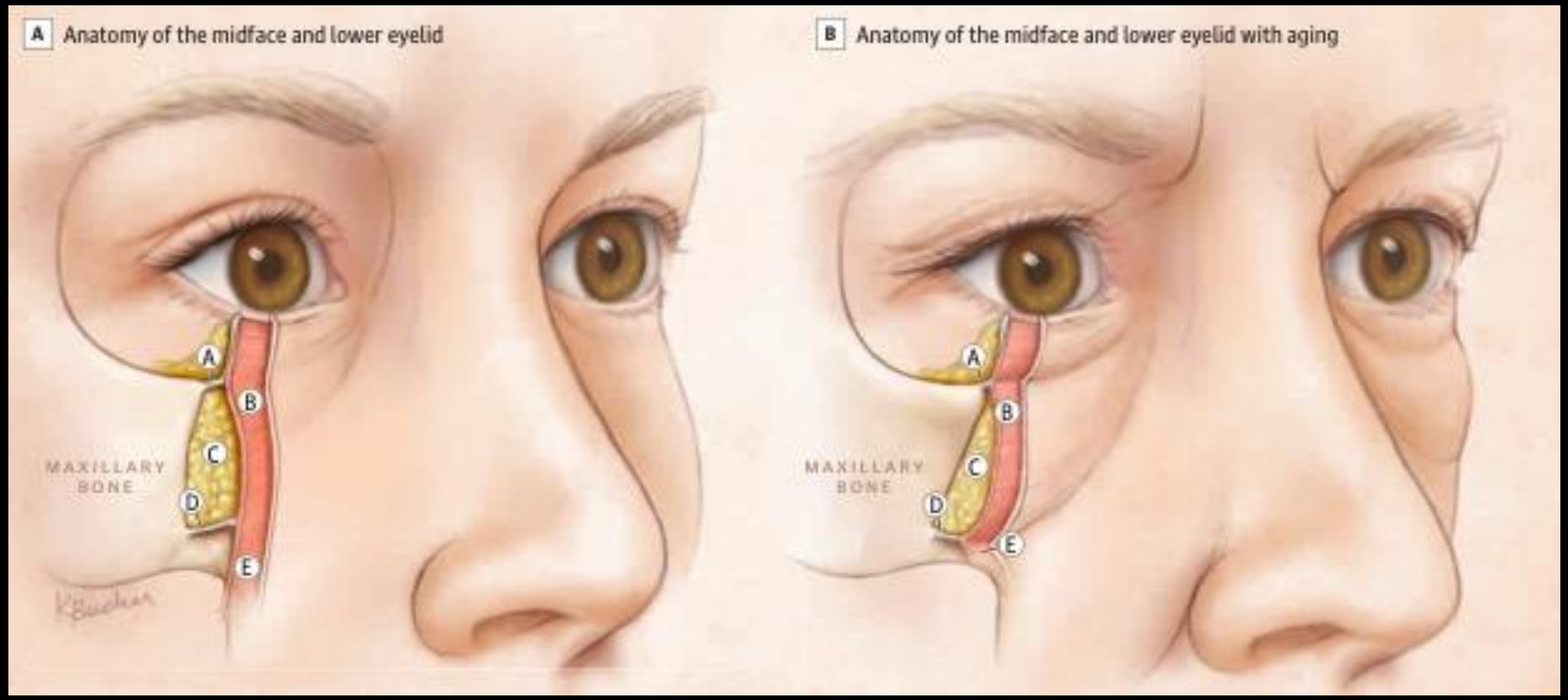
Periorbital Aging Changes



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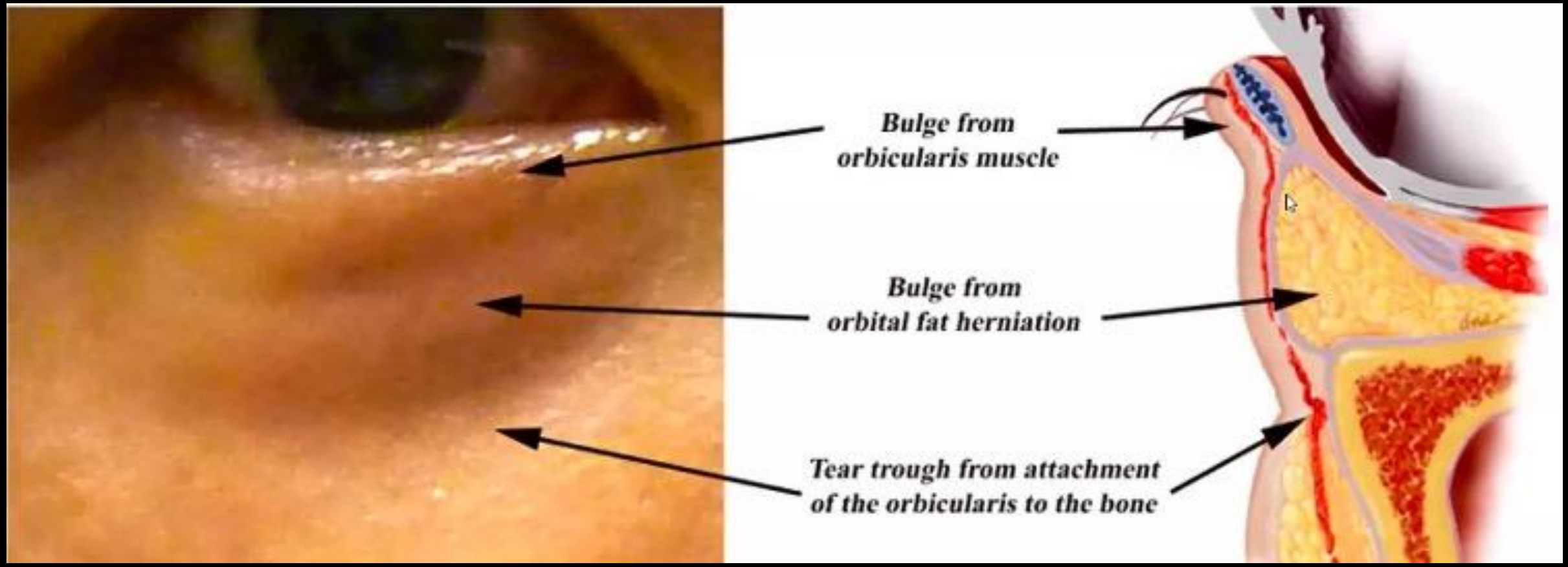
Lower Eyelid Nuances



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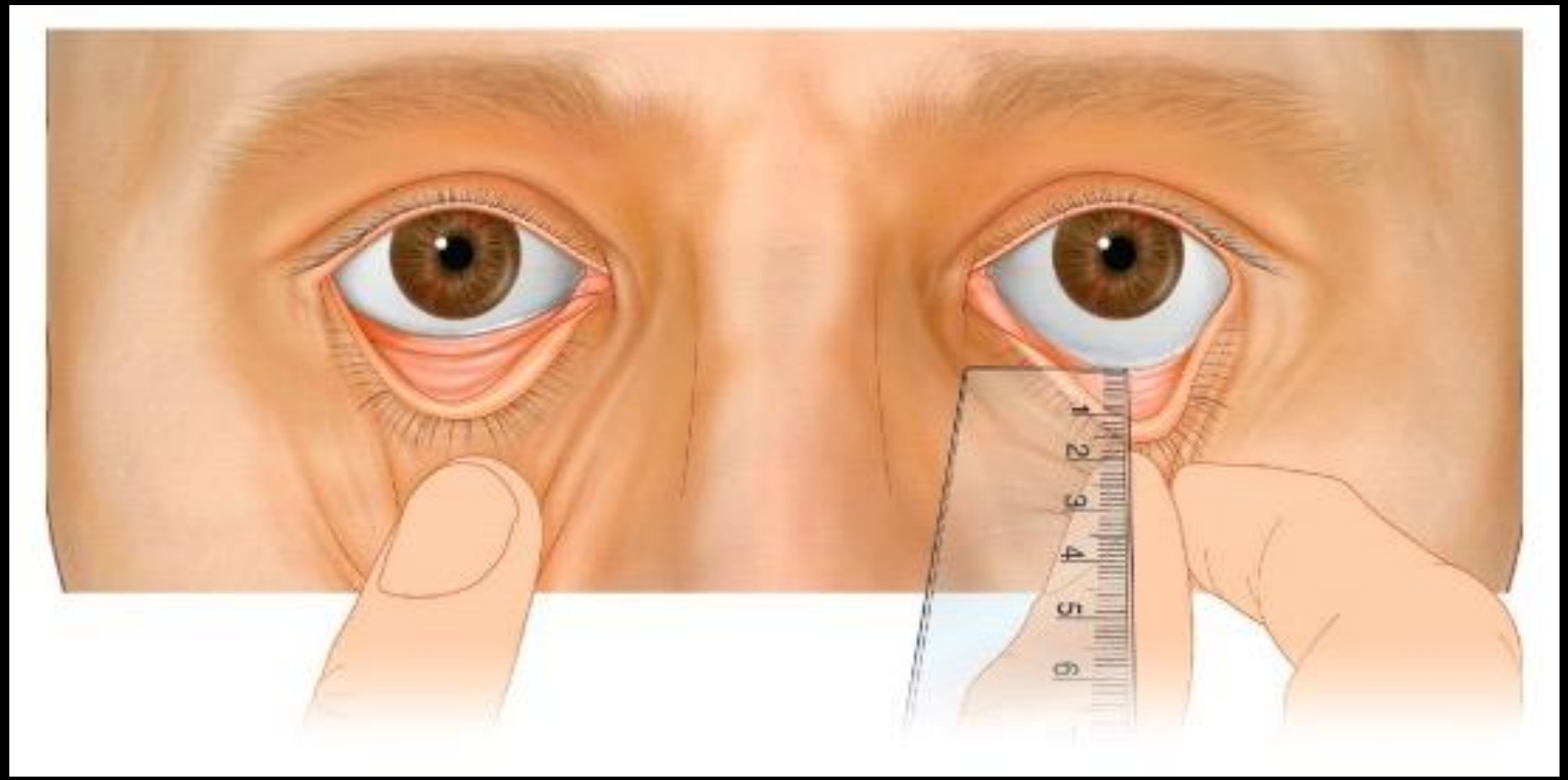
Pre-Operative Evaluation



Brent R Moody MD, Paul J Weber MD, Surgery of the Skin (2005), Figure 42.7

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“Snap” Test

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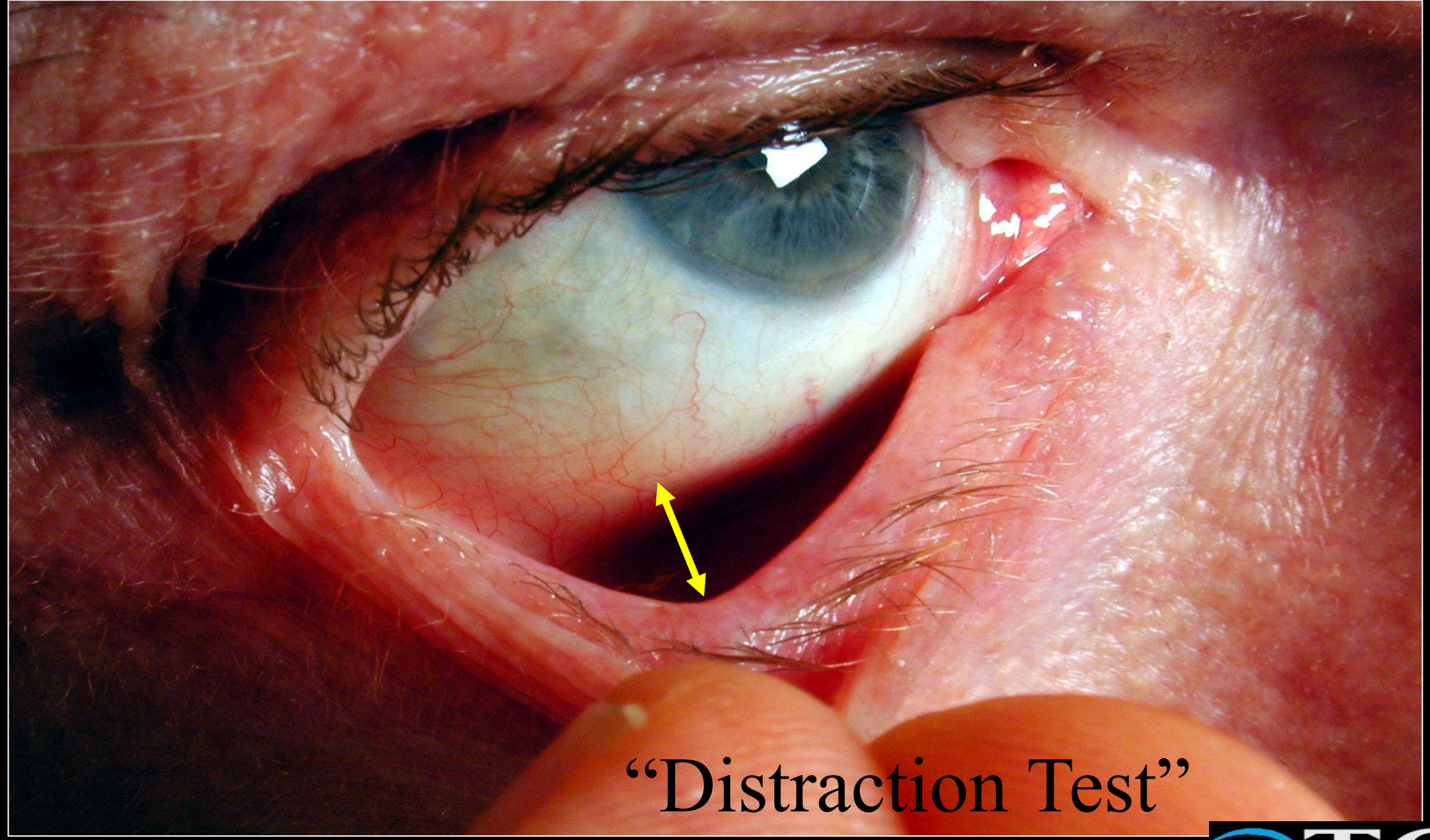

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Orbital Fat Prolapse
versus
Eyelid Edema

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Orbital Fat Prolapse

- Characteristic cigar shaped fat pad
- Prominence increases in upgaze

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Eyelid Edema

- Worse after salty meal or in the morning
- Not limited by orbital compartments
- Purplish color
- Does **NOT** increase prominence in upgaze

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Eyelid Edema – No Change In Upgaze

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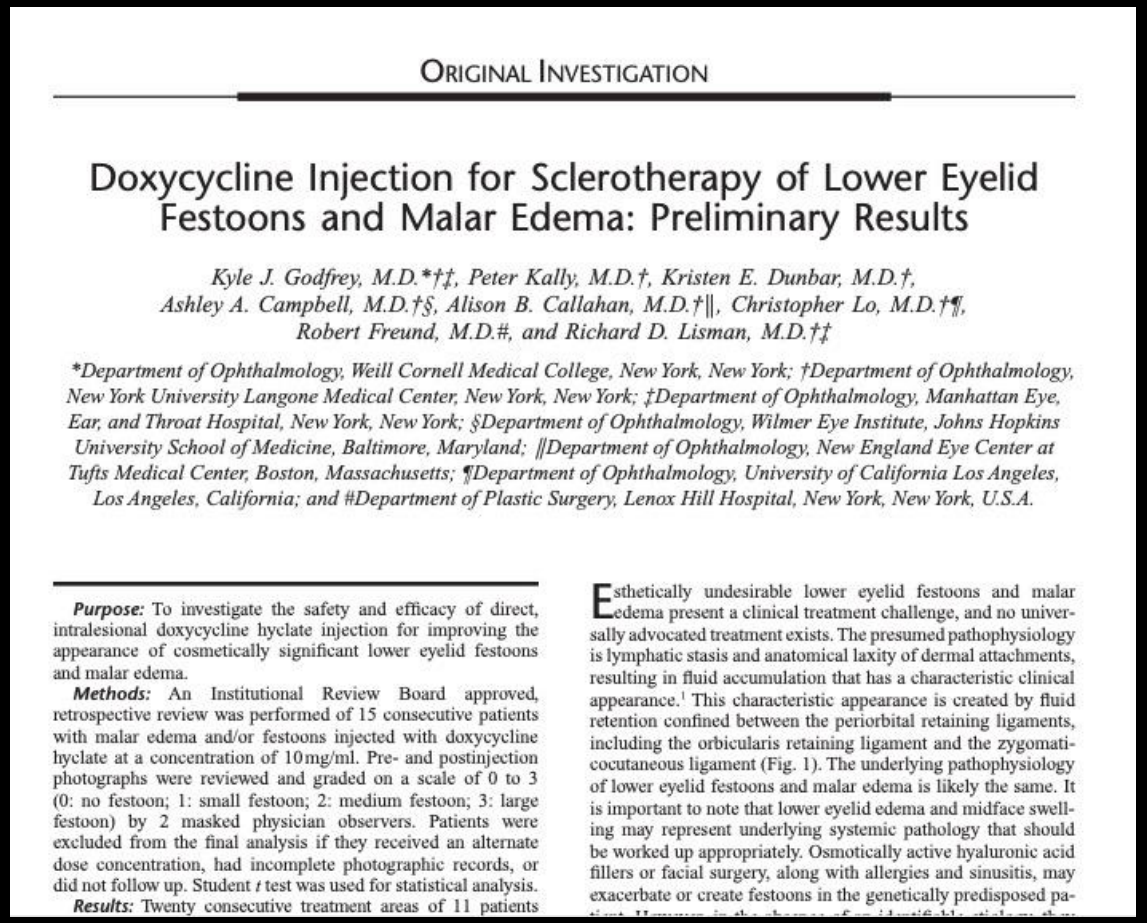
Malar Fluid → Festoon

- Fluid sponge
- Bound by retaining ligaments
- Familial
- Allergic

Treatment of Eyelid/Malar Fluid or ‘Festoons’



ORIGINAL INVESTIGATION

Doxycycline Injection for Sclerotherapy of Lower Eyelid Festoons and Malar Edema: Preliminary Results

Kyle J. Godfrey, M.D.†‡, Peter Kally, M.D.†, Kristen E. Dunbar, M.D.†, Ashley A. Campbell, M.D.†§, Alison B. Callahan, M.D.†‖, Christopher Lo, M.D.†¶, Robert Freund, M.D.#, and Richard D. Lisman, M.D.†‡*

**Department of Ophthalmology, Weill Cornell Medical College, New York, New York; †Department of Ophthalmology, New York University Langone Medical Center, New York, New York; ‡Department of Ophthalmology, Manhattan Eye, Ear, and Throat Hospital, New York, New York; §Department of Ophthalmology, Wilmer Eye Institute, Johns Hopkins University School of Medicine, Baltimore, Maryland; ‖Department of Ophthalmology, New England Eye Center at Tufts Medical Center, Boston, Massachusetts; ¶Department of Ophthalmology, University of California Los Angeles, Los Angeles, California; and #Department of Plastic Surgery, Lenox Hill Hospital, New York, New York, U.S.A.*

Purpose: To investigate the safety and efficacy of direct, intralesional doxycycline hyclate injection for improving the appearance of cosmetically significant lower eyelid festoons and malar edema.

Methods: An Institutional Review Board approved, retrospective review was performed of 15 consecutive patients with malar edema and/or festoons injected with doxycycline hyclate at a concentration of 10 mg/ml. Pre- and postinjection photographs were reviewed and graded on a scale of 0 to 3 (0: no festoon; 1: small festoon; 2: medium festoon; 3: large festoon) by 2 masked physician observers. Patients were excluded from the final analysis if they received an alternate dose concentration, had incomplete photographic records, or did not follow up. Student *t* test was used for statistical analysis.

Results: Twenty consecutive treatment areas of 11 patients

Esthetically undesirable lower eyelid festoons and malar edema present a clinical treatment challenge, and no universally advocated treatment exists. The presumed pathophysiology is lymphatic stasis and anatomical laxity of dermal attachments, resulting in fluid accumulation that has a characteristic clinical appearance.[1] This characteristic appearance is created by fluid retention confined between the periorbital retaining ligaments, including the orbicularis retaining ligament and the zygomaticocutaneous ligament (Fig. 1). The underlying pathophysiology of lower eyelid festoons and malar edema is likely the same. It is important to note that lower eyelid edema and midface swelling may represent underlying systemic pathology that should be worked up appropriately. Osmotically active hyaluronic acid fillers or facial surgery, along with allergies and sinusitis, may exacerbate or create festoons in the genetically predisposed pa-

- **Diuretics**
- **Thermoplasty**
- **Camouflage**
- **??Sclerotherapy with doxycycline**
- **Surgery +/- CO_2 laser resurfacing**

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Lower Blepharoplasty → Camouflage

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Options to Improve the Lower Eyelid:

1. Skin Resurfacing
2. Filler Injections
    1. Hyaluronic acid (“fillers”)
    2. Autologous fat transfer
3. Transconjunctival Lower Blepharoplasty
4. Transcutaneous Lower Blepharoplasty
5. Orbit Fat Transposition
6. Cheek Augmentation

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Transconjunctival Blepharoplasty with Fat Transposition

- +/- lateral canthal release

1. Transconjunctival incision 2-3mm below the inferior border of the tarsus
2. Preseptal dissection to the inferior orbital rim
3. Periosteal incision
4. Release of the orbital retaining ligament
5. Dissection of fat pedicles
6. Transposition of the fat pedicles

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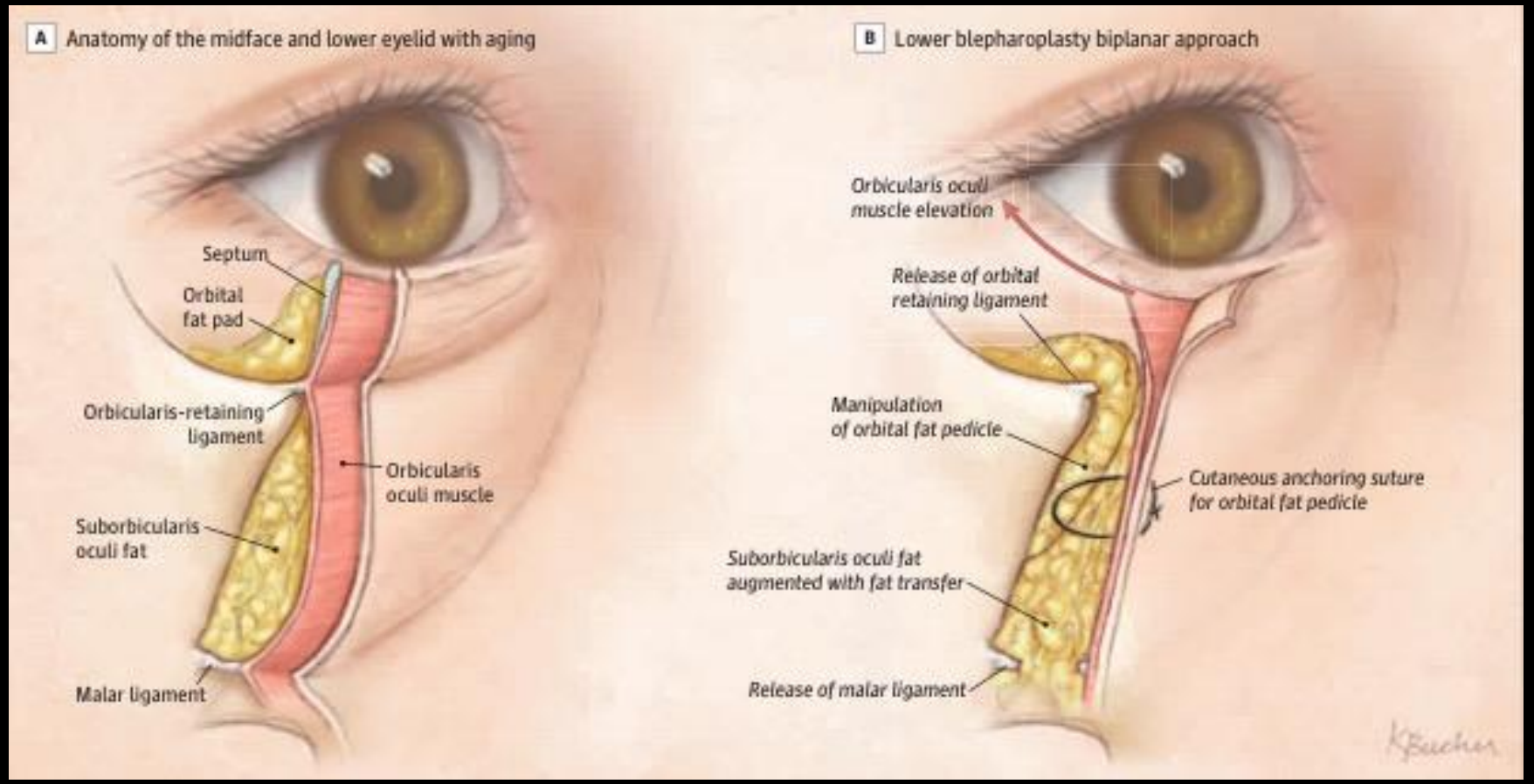
Transposition of Fat Pedicles



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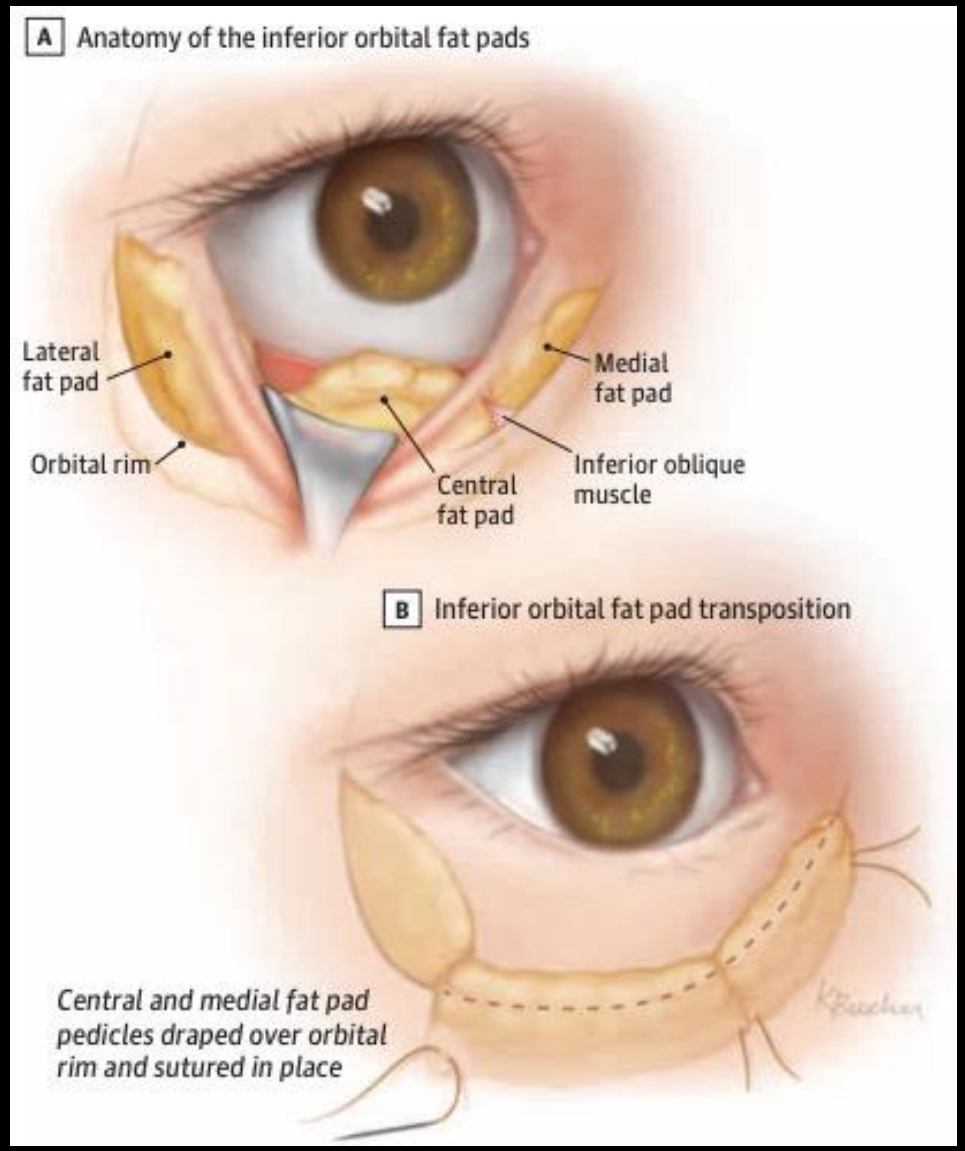
End-to-End Technique



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Treat volume **LOSS** with…

Volume Augmentation

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Volume Augmentation Options

- Implants
- Synthetic fillers (ie hyaluronic acid)
- Fat transfer

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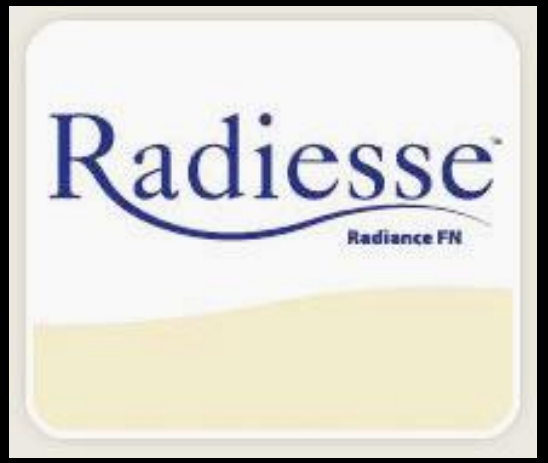
Synthetic Fillers



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Fat Transfer: Equipment

Tulip® MEDICAL PRODUCTS

AMPLE SCIENTIFIC

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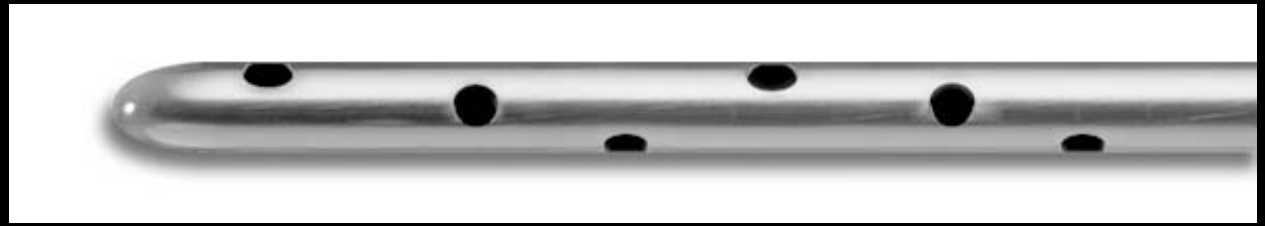
Fat Transfer: Equipment

- **Infiltrator**
- Harvestor
- Luer lock transfer
- 1cc & 10cc luer lock syringes
- Albumin
- Centrifuge (optional)
- 0.9 injector



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- **Luer lock transfer**

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Ample Scientific "Champion D-50"

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Fat Transfer: Essential Steps

1. Tumesce harvest area
2. Sensory blocks
3. Harvest and process fat
4. Inject fat

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Step 1: Tumesce Harvest Site

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Step 1: Tumesce Harvest Site

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Lidocaine Toxicity

- Determined by total dose and rate of absorption
- Total Dose = 4.5 mg/kg
- Rate of absorbtion → dependent on blood flow to that tissue
  - Vasoconstrictors, such as epinephrine, is frequently used
  - May increase toxic dose to 7 mg/kg

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Lidocaine Toxicity Signs and Symptoms

- Early signs (*awake patients)
  - Circumoral numbness
  - Tongue paresthesia
  - Dizziness
  - Tinnitus
  - Blurred vision
- Progressive signs
  - Muscle twitching
  - Seizures
- Late signs
  - Unconsciousness
  - Coma

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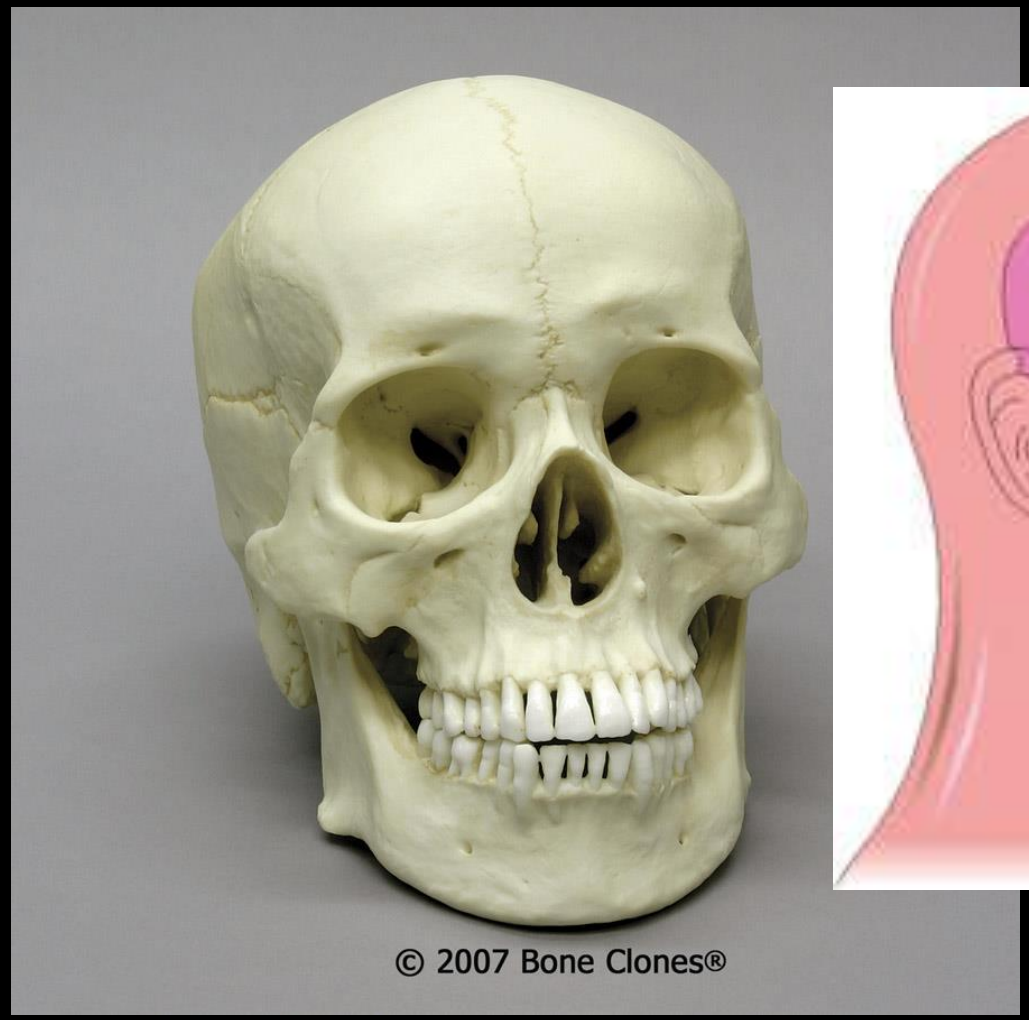
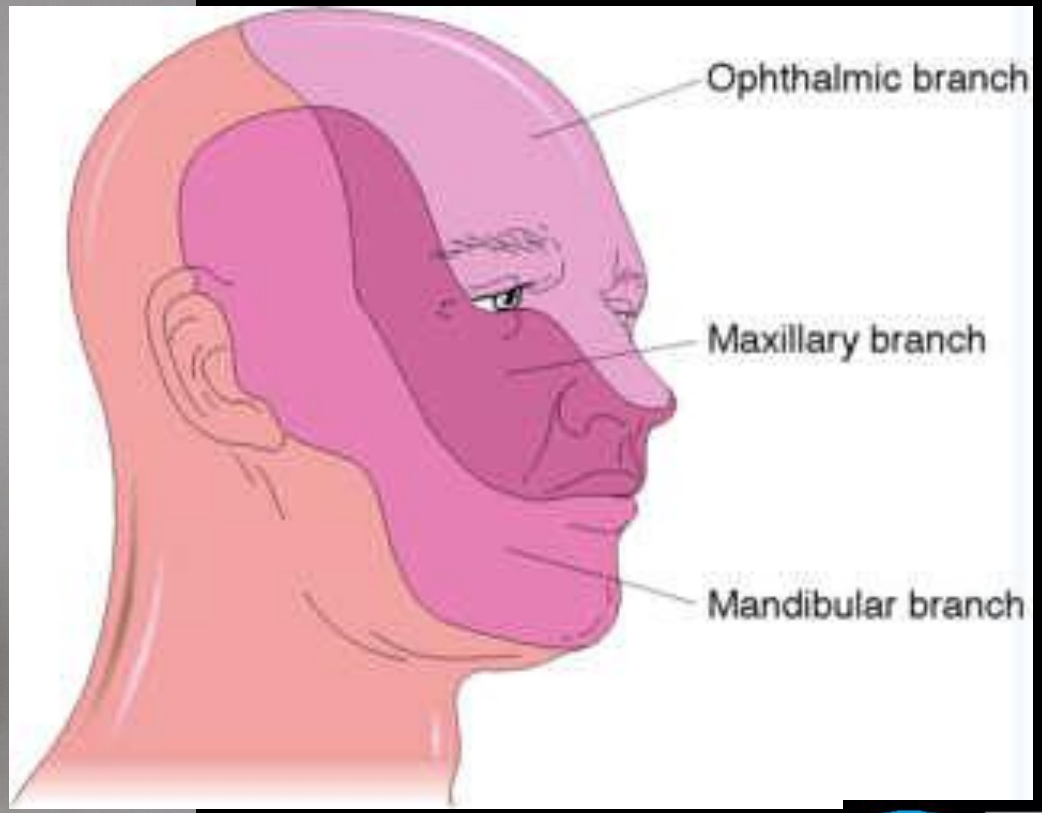
Step 2: Sensory Nerve Blocks





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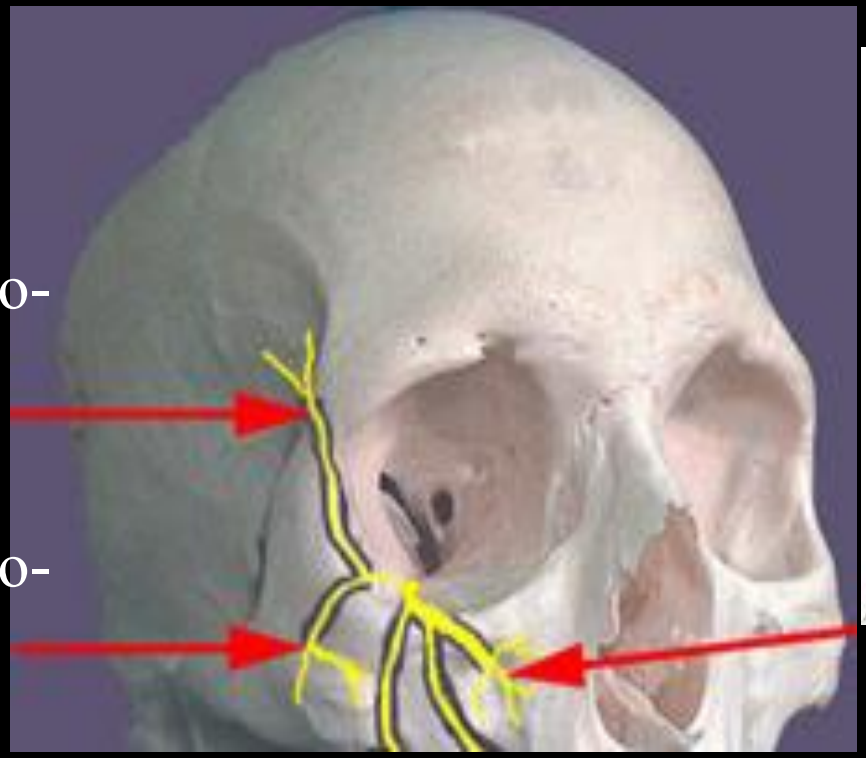
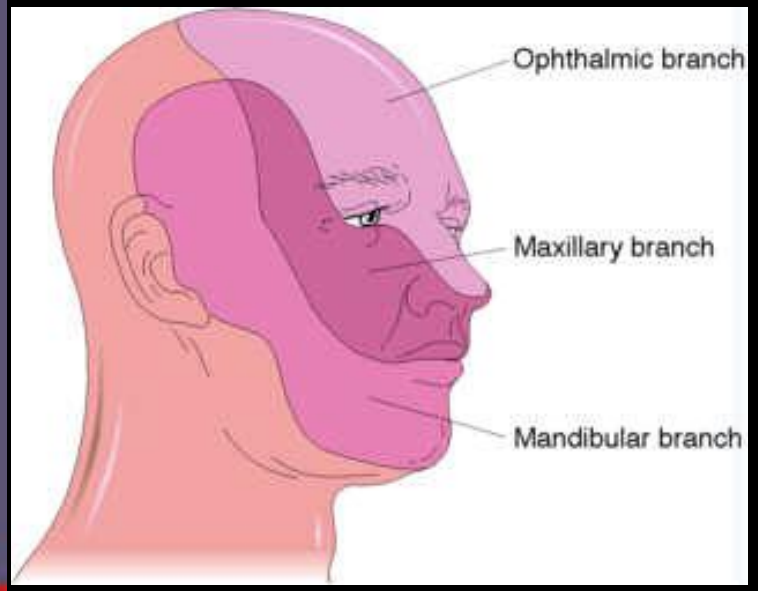
Step 2: Sensory Nerve Blocks

Zygomatico-facial

Zygomatico-temporal





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Step 3: Harvest and Process Fat

Maintain 2cc of back pressure

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Step 3: Harvest and Process Fat

Centrifuge:

3 minutes
1000 RPM

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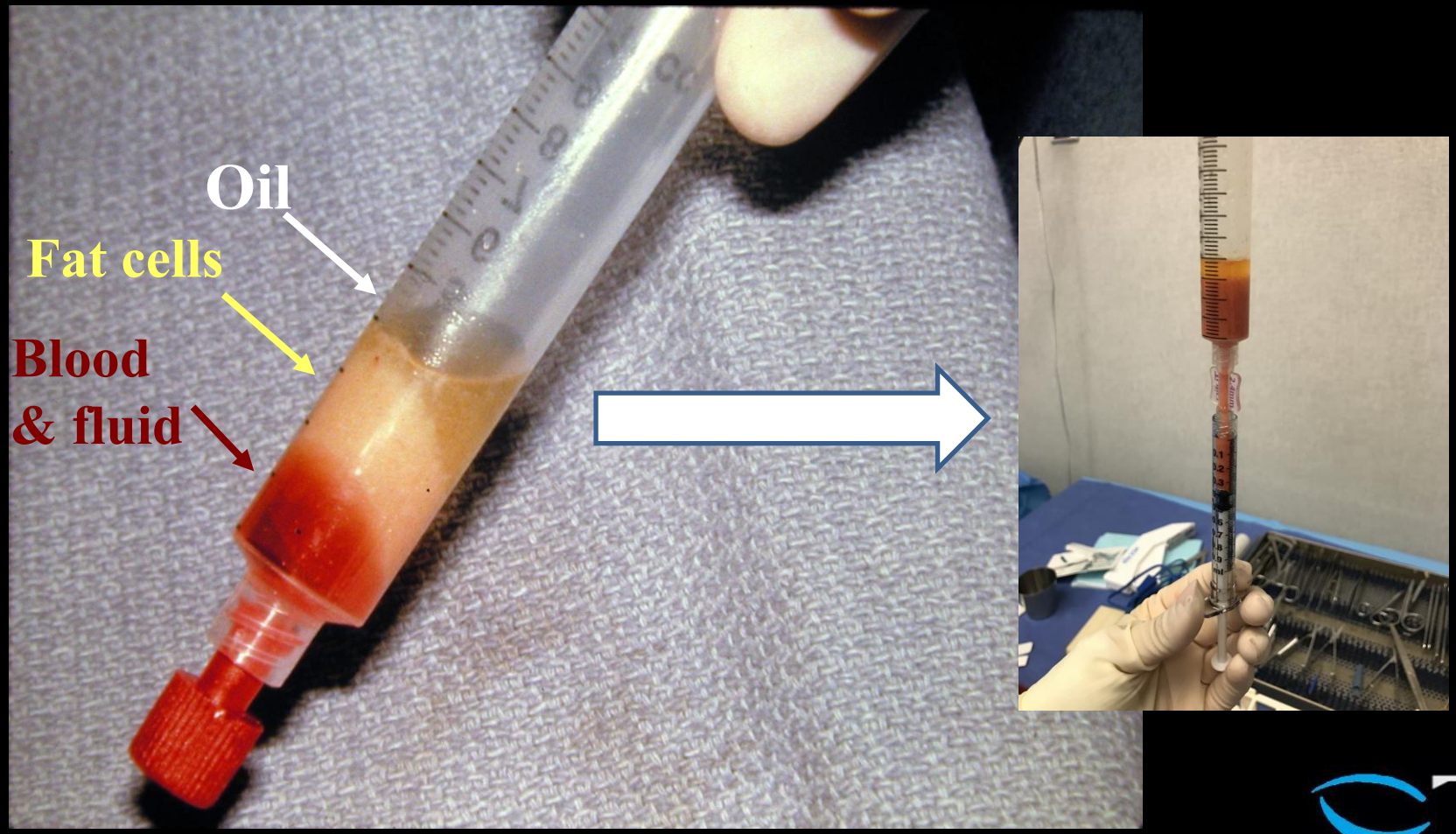
Step 3: Harvest and Process Fat



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Step 4: Inject Fat

- Larger Cannula
  (C
- Sr
  (Tulip)

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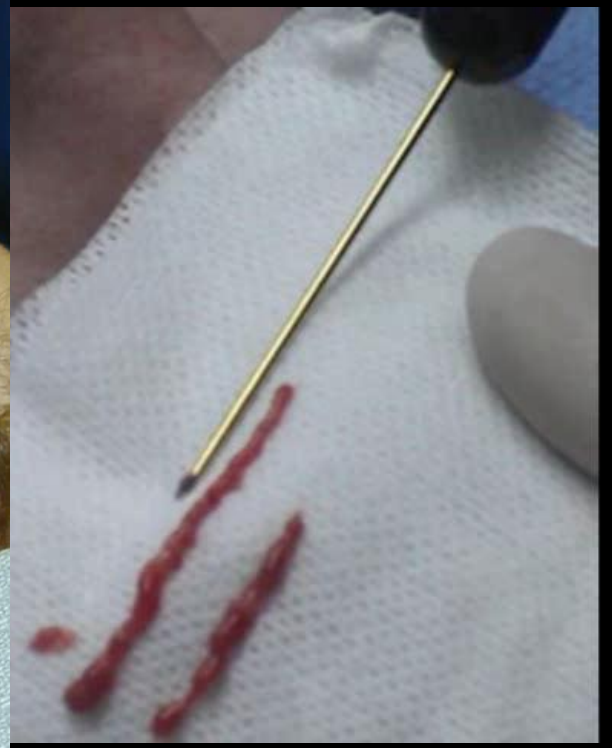
Step 4: Inject Fat



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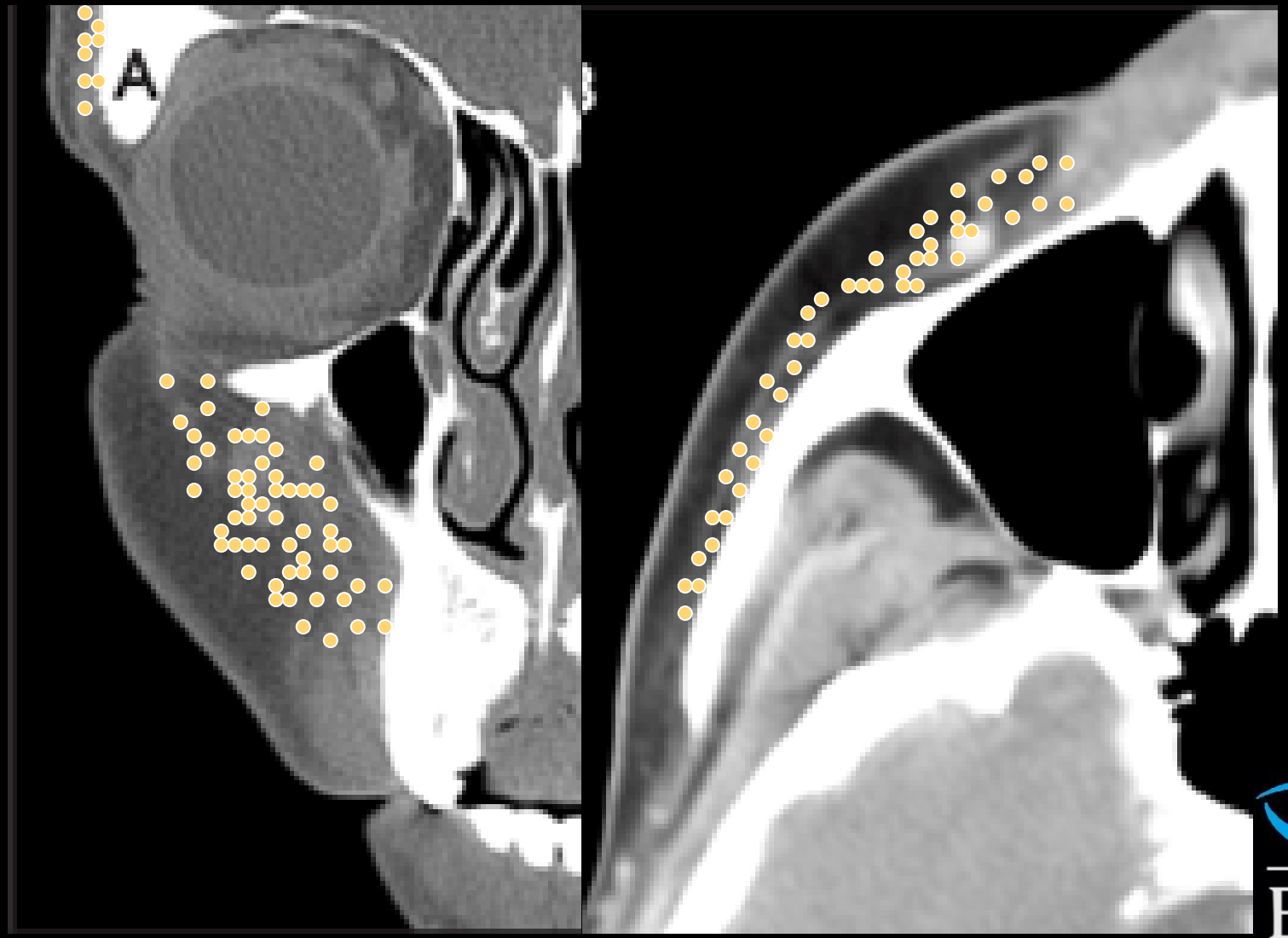
Step 4: Inject Fat



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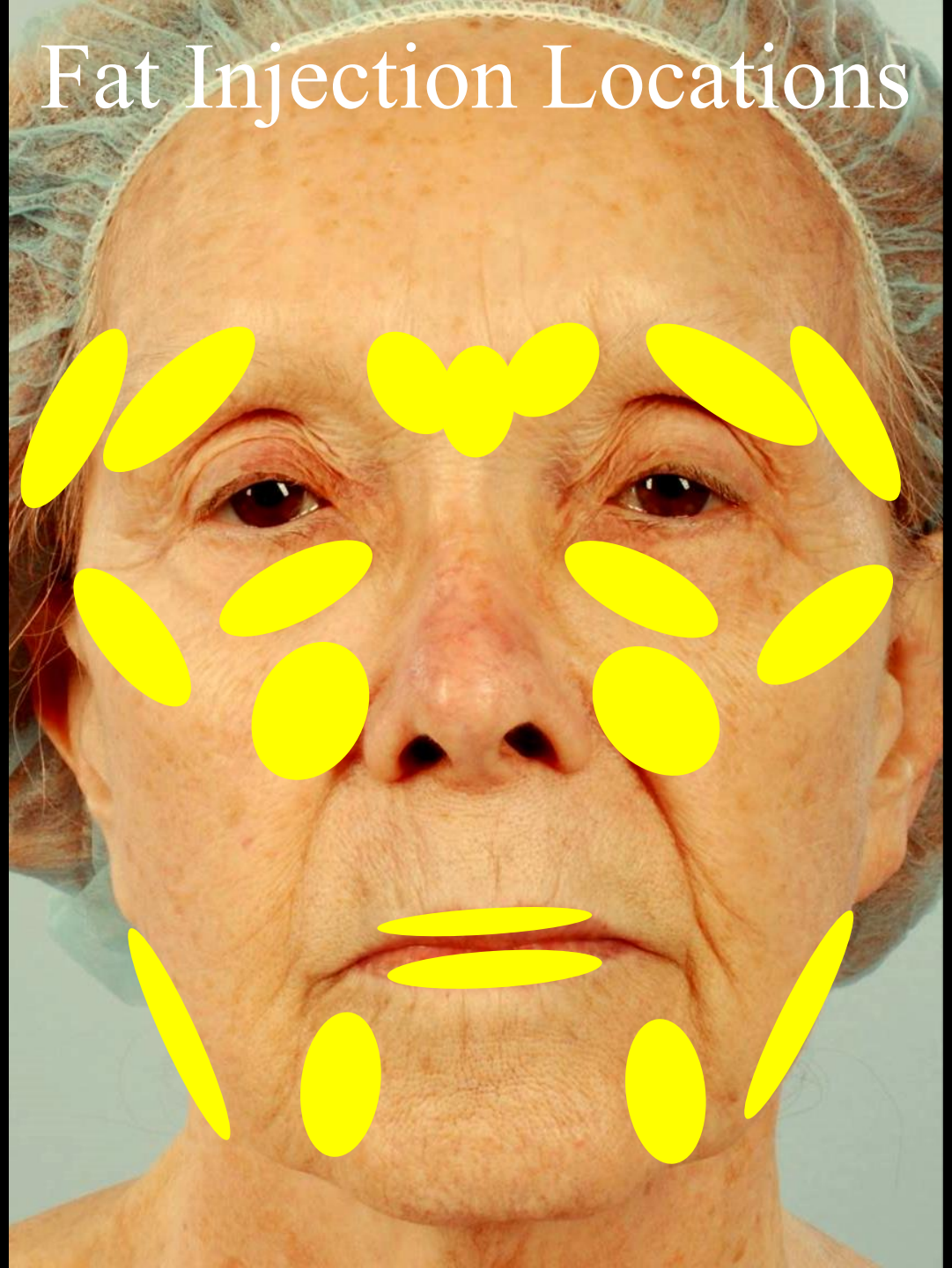
Fat Injection Locations



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Questions?

msomogyi@tocaustin.com

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- **Case Studies**

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Case #1

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Quad Bleph in Mexico – now with “eye redness”

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Post-Blepharoplasty Lower Eyelid Retraction

- Three Primary Features:
  1. Retracted Lower Eyelids
  2. Scleral Show
  3. Rounding or distortion of the canthal angle

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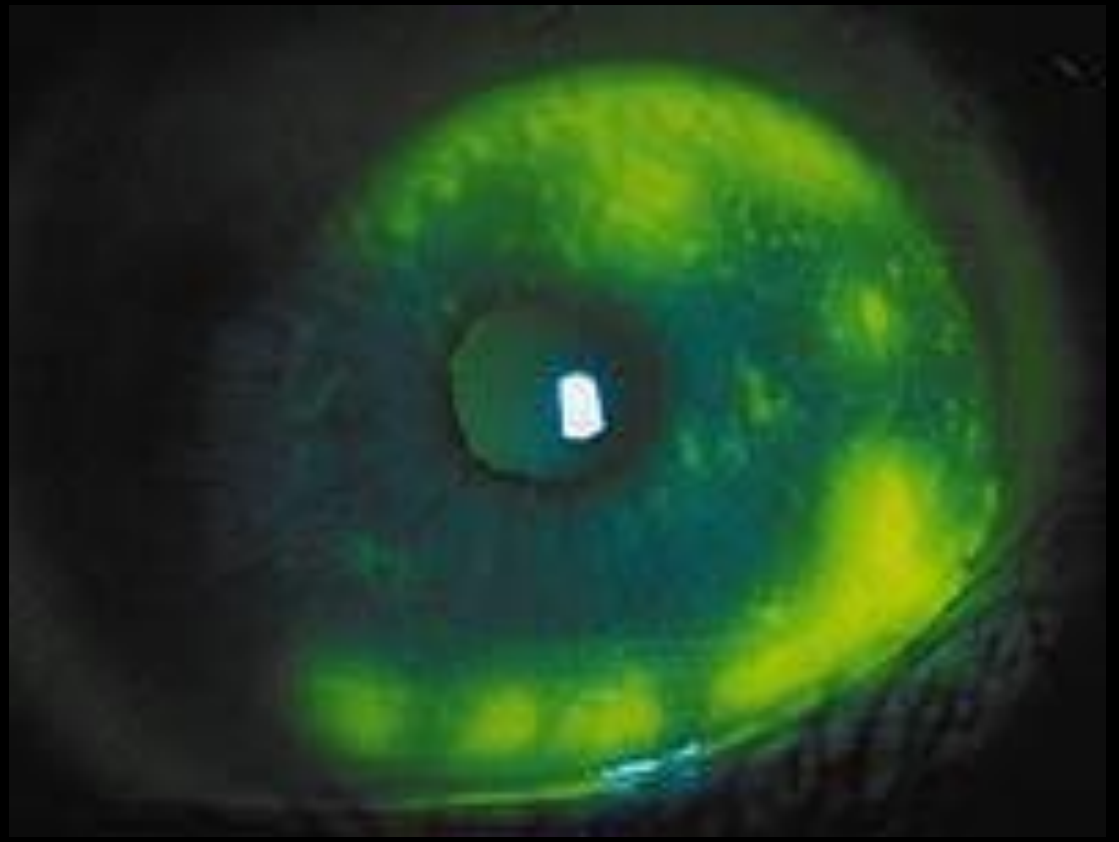
Exam

- Check Vision
- Ocular Surface
  - Fluoroscein staining
- Lower eyelid position
  - Laxity?
  - Forced upward traction test
- Orbicularis weakness
  - Fish mouthing of the eyelids
- Negative vector eyelid?



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Post-Blepharoplasty Lower Eyelid Retraction

- Retrospective Chart Review
- **ALL** patients had transcutaneous lower blepharoplasty
- **NO** patients had transconjunctival approach
- Factors:
  - Anterior Lamellar shortage
  - Eyelid tether (ie internal scar)
  - Unrecognized eyelid laxity
  - Orbicularis weakness
  - Presence of negative vector topography

Oculoplastic Surgery

New Insights Into Physical Findings Associated With Postblepharoplasty Lower Eyelid Retraction

SAGE

Garrett Griffin, MD; Babak Azizzadeh, MD; and Guy C. Massry, MD

Abstract

Background: Postblepharoplasty lower eyelid retraction (PBLER) has been linked to anterior lamellar shortage, unaddressed eyelid laxity, and middle lamellar scarring. The authors believe there are other, less appreciated physical findings (orbicularis weakness, negative-vector eyelid, and inferior eyelid/orbital volume deficit) that also influence the development and potentially the management of this complex type of eyelid malposition.

Objectives: To better understand PBLER, potentially prevent its development, and improve treatment options, the authors determined the incidence of various physical findings present on initial examination of patients referred for PBLER evaluation.

Methods: The medical charts of patients referred for PBLER evaluation over a 21-month period were reviewed. The presence of anterior lamellar shortage, lower eyelid laxity, and a middle lamellar (internal eyelid) scar was documented. Orbicularis weakness, negative-vector eyelid topography, and volume deficiency of the lower eyelid/inferior orbit also were noted. The incidence of each finding was calculated.

Results: Forty-six patients (35 women, 11 men) were included. All patients had undergone primary transcutaneous surgery, which led to the eyelid retraction. Orbicularis weakness, anterior lamellar shortage, inferior eyelid/orbital volume deficit, negative-vector eyelid topography, and eyelid laxity were common. A middle lamellar scar of significance was found in only 13% of eyelids.

Conclusions: The data suggest that the aforementioned underappreciated findings are common in patients with PBLER. Evaluating these factors when planning primary blepharoplasty may reduce the incidence of PBLER. Awareness of these findings when planning revisional procedures may improve surgical outcomes.

Level of Evidence: 4

Keywords

blepharoplasty, eyelid retraction, eyelid vector, orbicularis weakness, eyelid volume, eyelid scar, eyelid laxity

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Treatment of postblepharoplasty lower eyelid retraction [PBLER] is challenging.[1] Historically, one type of eyelid malposition has been linked to transcutaneous surgery and a primary etiologic factor: overzealous excision of skin, unaddressed eyelid laxity, and middle lamellar scarring.[2–4] Contemporary approaches to aesthetic lower eyelid reconstruction have evolved in a manner paralleling the awareness of these issues. This awareness, coupled with appropriate precautions and interventions to prevent lower eyelid retraction, has significantly reduced the incidence of PBLER,[5–9] but the problem still occurs.[1] This led the authors to question whether traditional perceptions of factors associated with PBLER provide a complete picture of the problem. It is the anecdotal belief of the senior author (G.C.M.), who has treated many patients with PBLER, that less-recognized factors also

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E-mail: gmassry@drmassry.com

Aesth Surg J. 2014 34: 995-1004

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Identify the Problem & Surgical Solution

- Lower eyelid retraction with mild anterior lamellar shortage
  - Patient refused skin graft
  - Recession of the lower eyelid retractors transconjunctivally
- Unrecognized lower eyelid laxity
  - Canthoplasty

Lateral Tarsal Strip
Step 1: 1 cm Lateral Skin Incision

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Step 2: Dissection to Orbital Rim Periosteum

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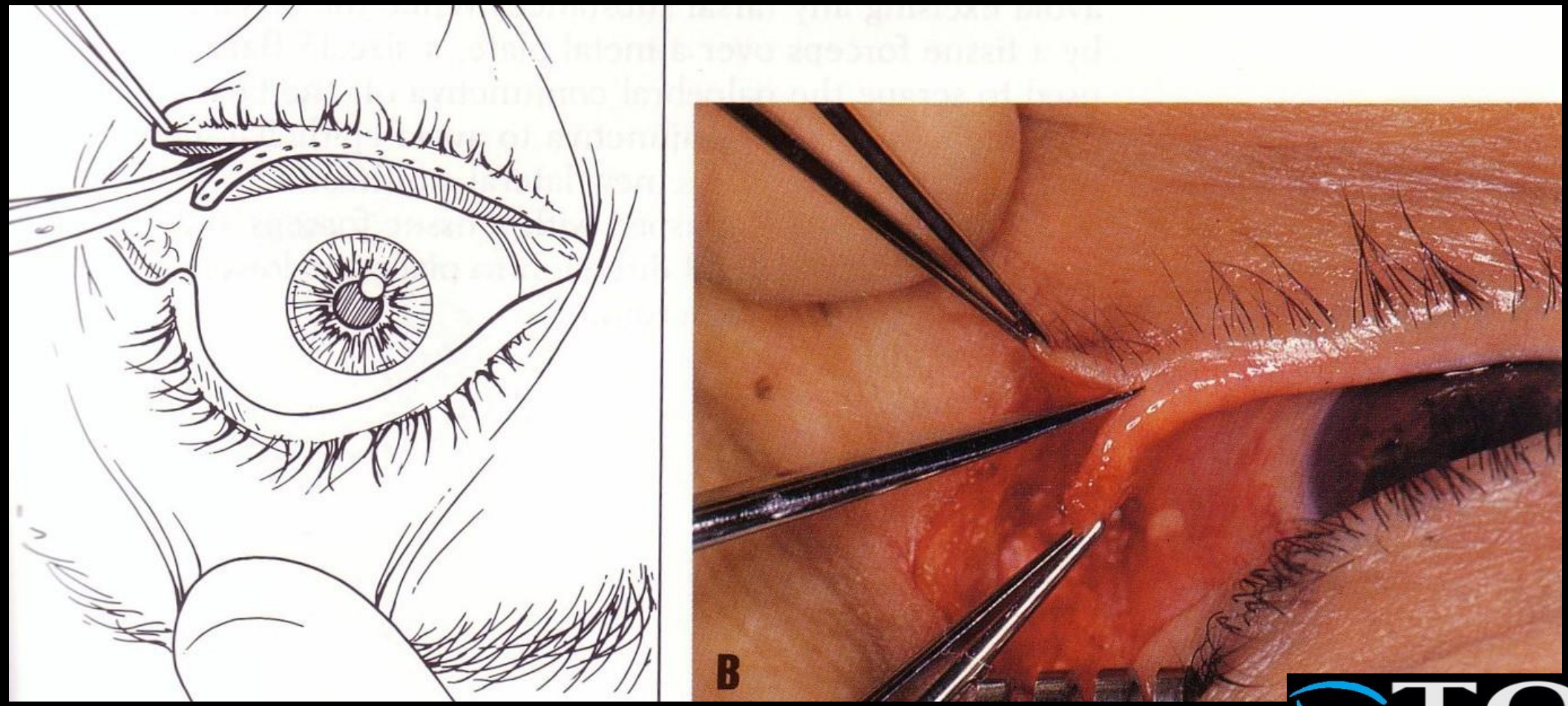
Step 3: Construction of Tarsal Strip



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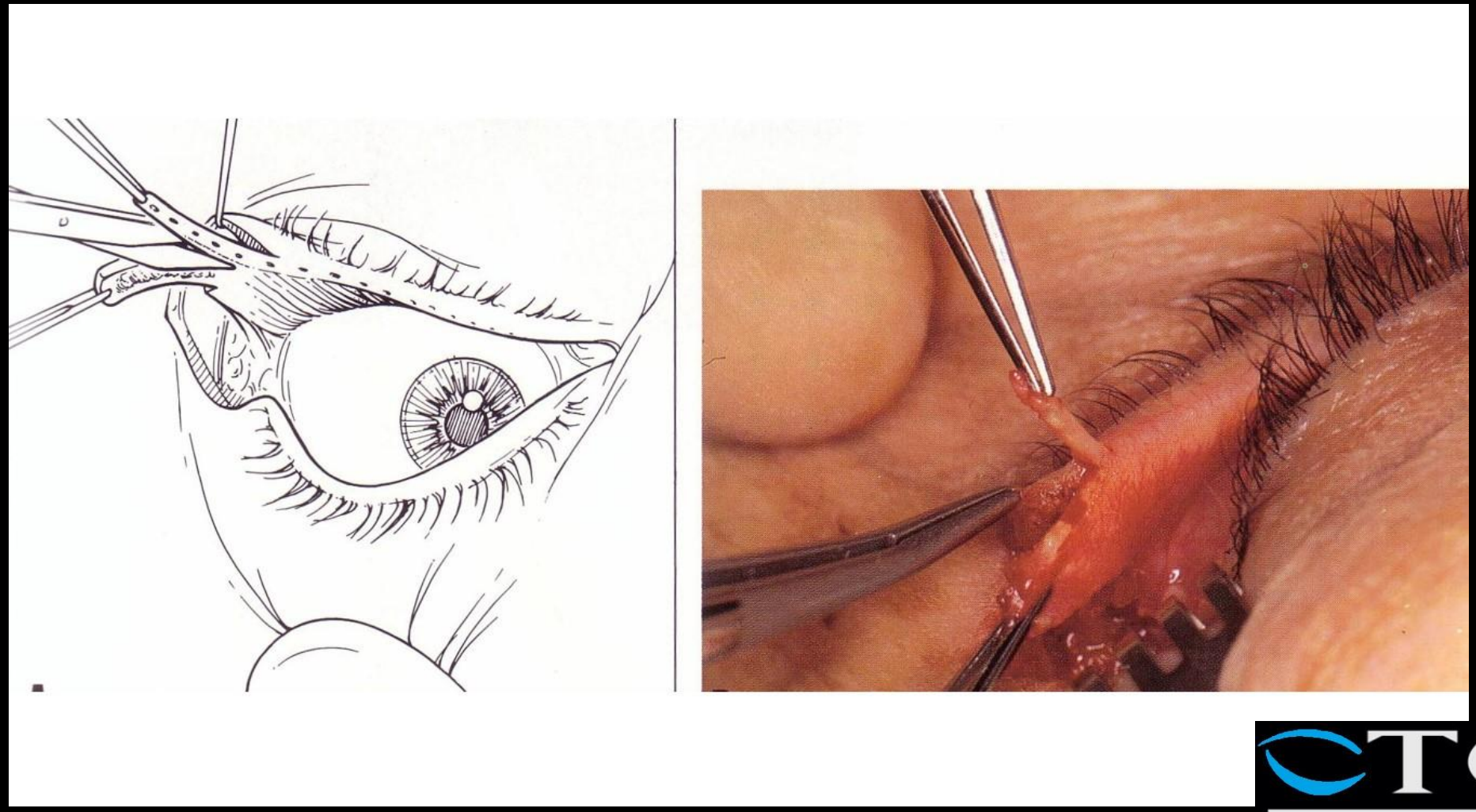
Step 4: Denude Epithelium



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Step 5: Preplace Tarsal Strip Suture

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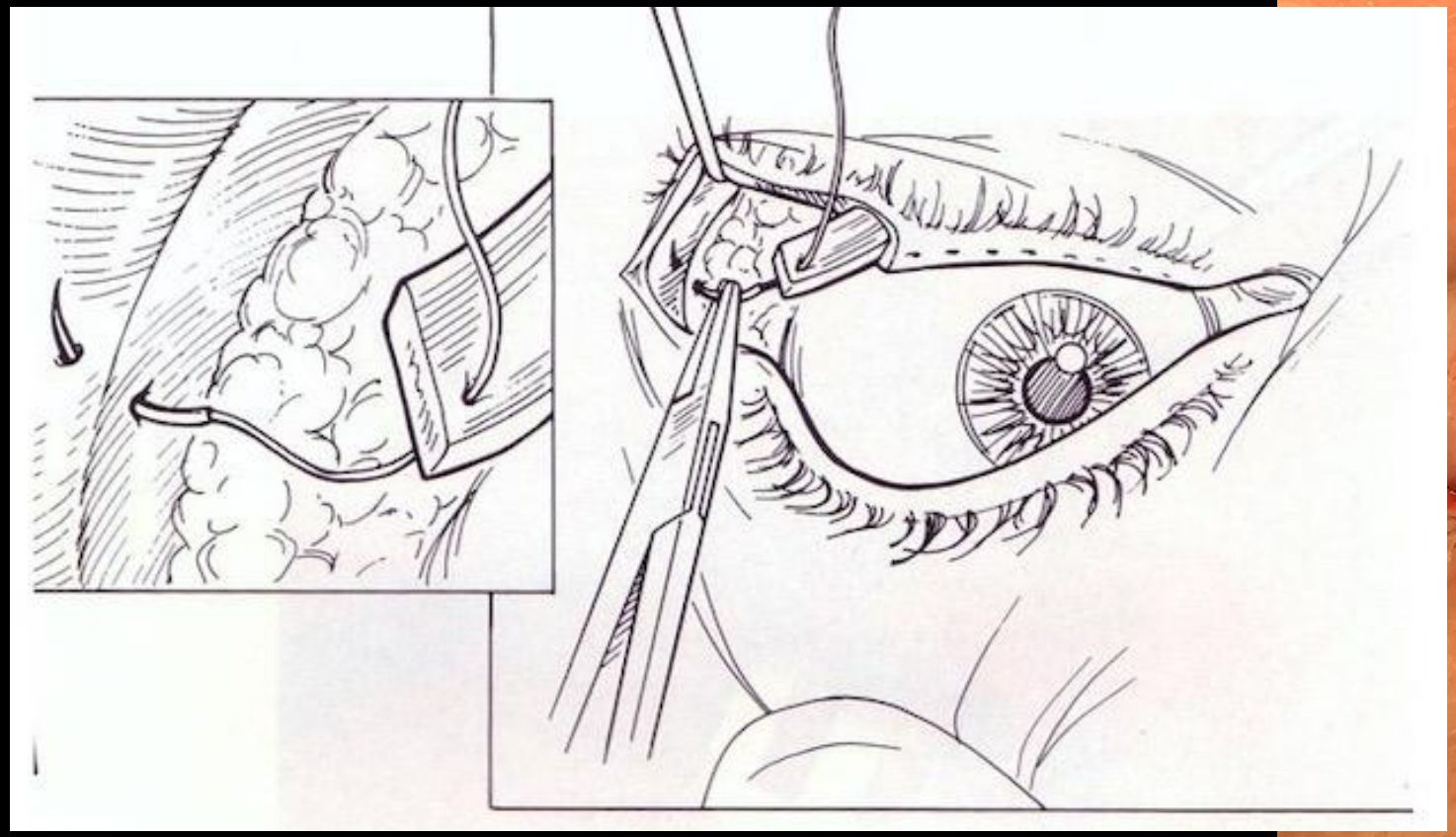
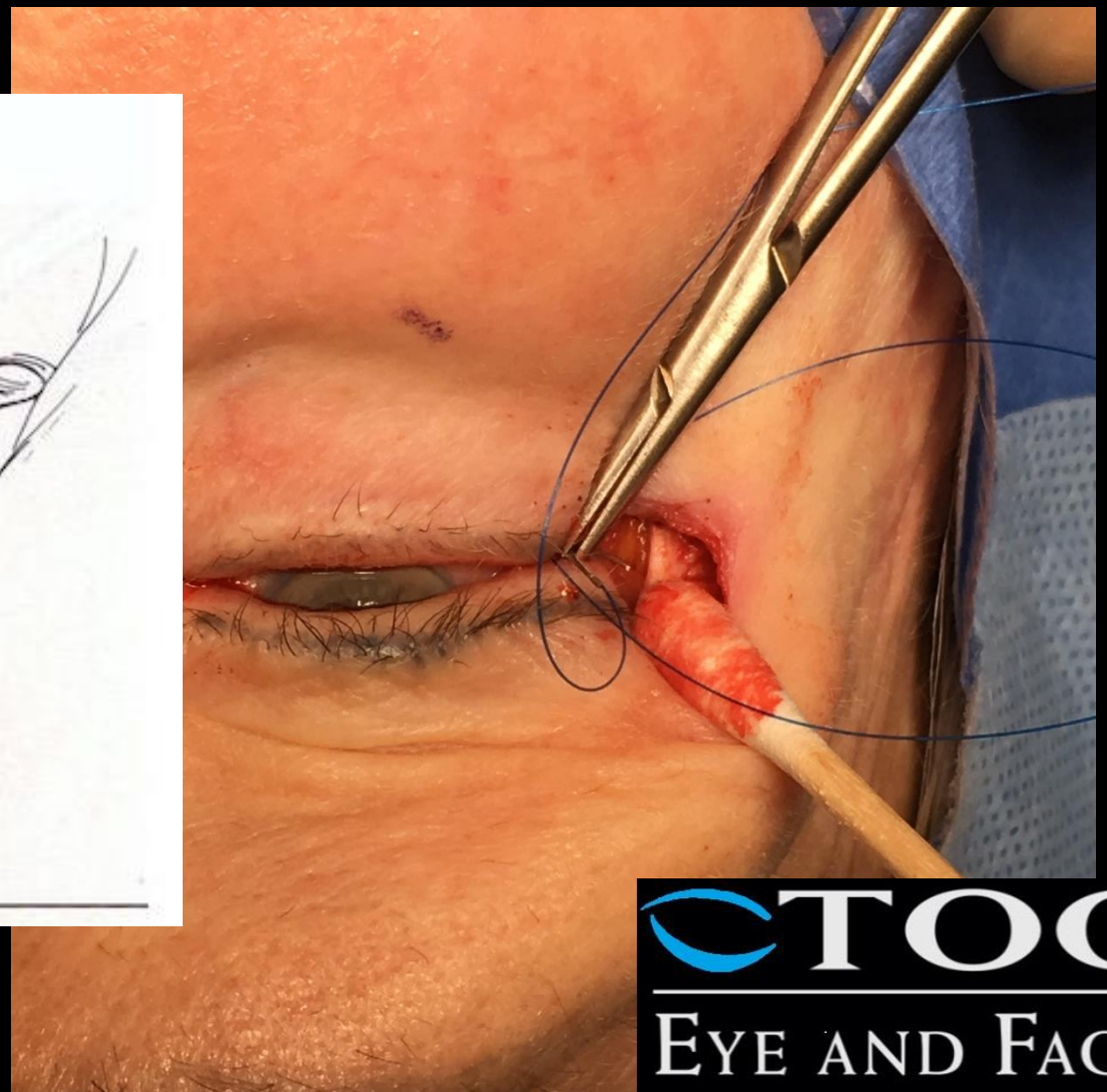
Step 6: Pass Suture Through Rim Periosteum ***INSIDE*** *the Orbital Rim* Near Whitnall's Tubercle





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Step 7: Reform Lateral Canthal Angle

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Step 8: Secure Sutures and Close Skin

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Case #2

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EYE AND FACE

Friday OR

- 75 yo female scheduled for upper blepharoplasty and ptosis repair
- History of prophylactic aspirin
  - Stopped 10 days prior
- Surgery uneventful

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8PM Phone Call

- Complains of nausea, vomiting, and pain in the right eye
- On call doctor recommends taking the pain medication and Zofran
- ”Call back if this does not improve”

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10PM Phone Call

- Reports increase in pain in the right eye and now unable to open the eye
- Appears more swollen than it had after surgery

What do you do?

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Office Visit

- **MEET ME AT THE OFFICE NOW**

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Exam

- ***Quickly*** check vision
- Pupillary exam
- Extraocular motility
- Intraocular presssure

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Checking the Pupil's Response to Light

The Normal Pupillary Reaction

Image Courtesy of: Dr. Marc Cohen

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Light shined in Compromised Eye

Pupils dilate because less light perceived

Normal Optic Nerve

Damaged Optic Nerve

Image Courtesy of: Dr. Marc Cohen

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Exam

- **Va**: 20/100 in the right eye vs 20/40 in the left
- + RAPD in the right eye
- Right orbit feels tense
- **IOP**: 48 in the right eye vs 16 in the left eye

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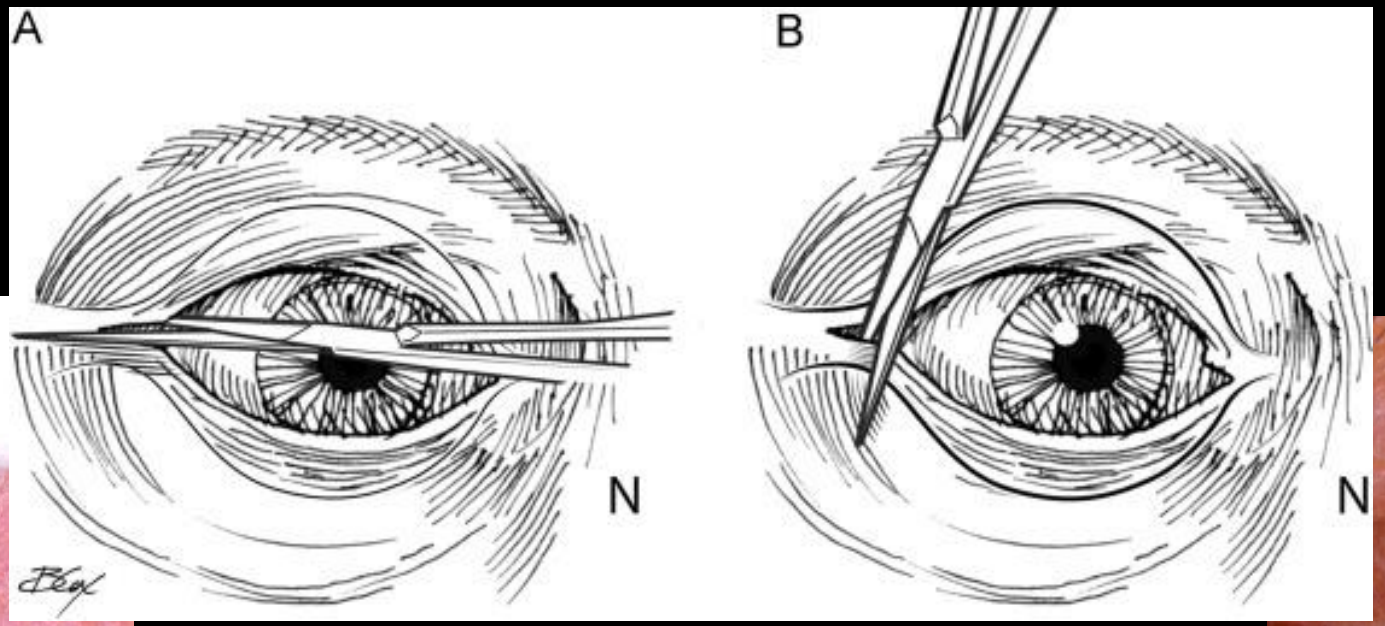
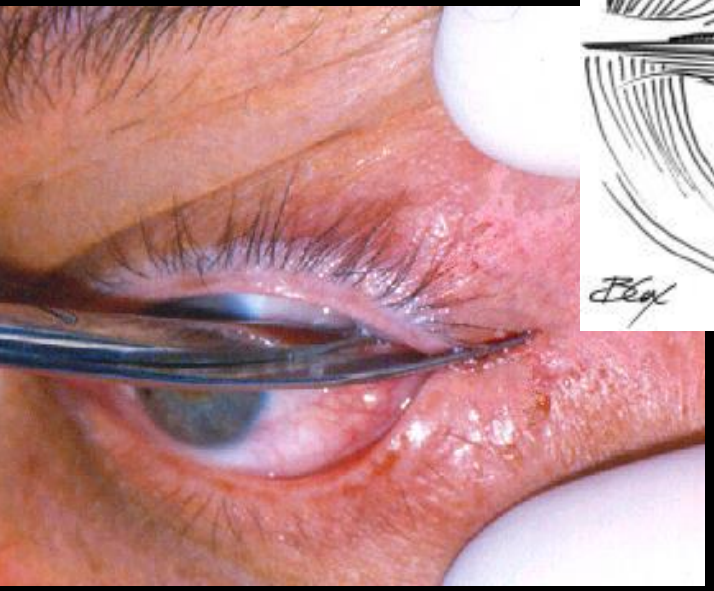
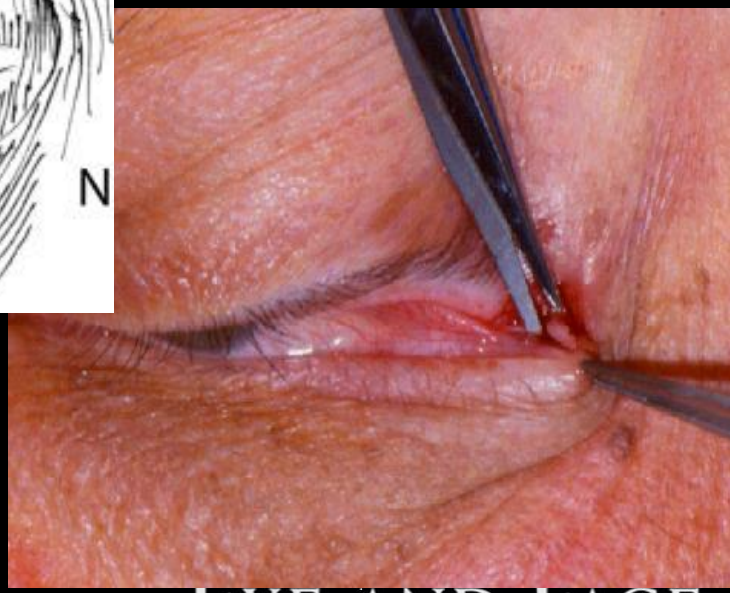
Management

- **Immediate canthotomy and cantholysis**







Tyler, et al. Management of retrobulbar hematoma

Management

- Open canthus
- Drain hematoma
- Obtain hemostasis
- Check Vision and IOP after fully releasing the canthus
- Consider starting steroids
- Check patient the following day

Case #3

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EYE AND FACE

Tear Trough Filler

- Restylane-L performed in the tear trough at 2pm
- Uneventful
- 5pm phone call – “gray vision” out of the right eye

What do you do?

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Filler-Related Vision Loss

- **SEE THE PATIENT**
- Check vision, pupillary exam, extraocular motility, eyelid position
- Careful skin examination → blanching, erythema, duskiness
- If able → direct ophthalmoscope to look at retina
  - If not, referral to ophthalmologist

Treatment???

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Filler-Related Vision Loss Treatment

REVIEW ARTICLE

Avoiding and Treating Blindness From Fillers: A Review of the World Literature

...MD, FRCSC, FRC (OPHTH),
...EK JONES, MD[‡§]

Cosmetic Medicine

Update on Avoiding and Treating Blindness From Fillers: A Recent Review of the World Literature

Katie Beleznay, MD, FRCPC; Jean D.A. Carruthers, MD, FRCSC, FRC (OPHTH); Shannon Humphrey, MD, FRCPC; Alastair Carruthers, MD, FRCPC; and Derek Jones, MD

Aesthetic Surgery Journal
2019, Vol 39(6) 662–674

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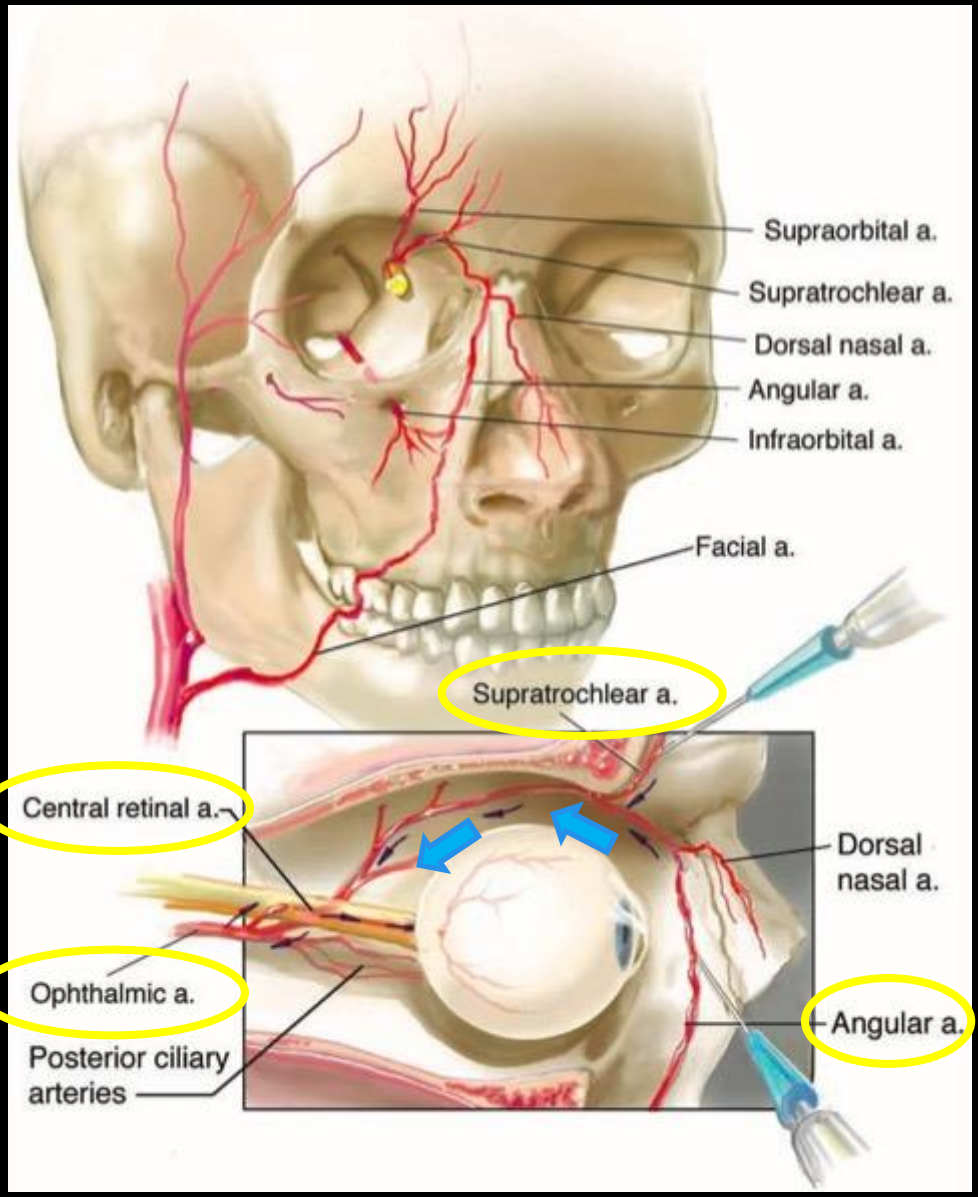
www.aestheticsurgeryjournal.com
OXFORD UNIVERSITY PRESS

Aesthetic Surgery Journal
2014, Vol. 34(4) 584–600

DOI: 10.1177/1090820X14525035
www.aestheticsurgeryjournal.com
SAGE

How does this happen??



Beleznay, et al. Update on Avoiding and Treating Blindness From Fillers: A Review of the World Literature. Aesthet Surg J, 39 (2019), p. 662

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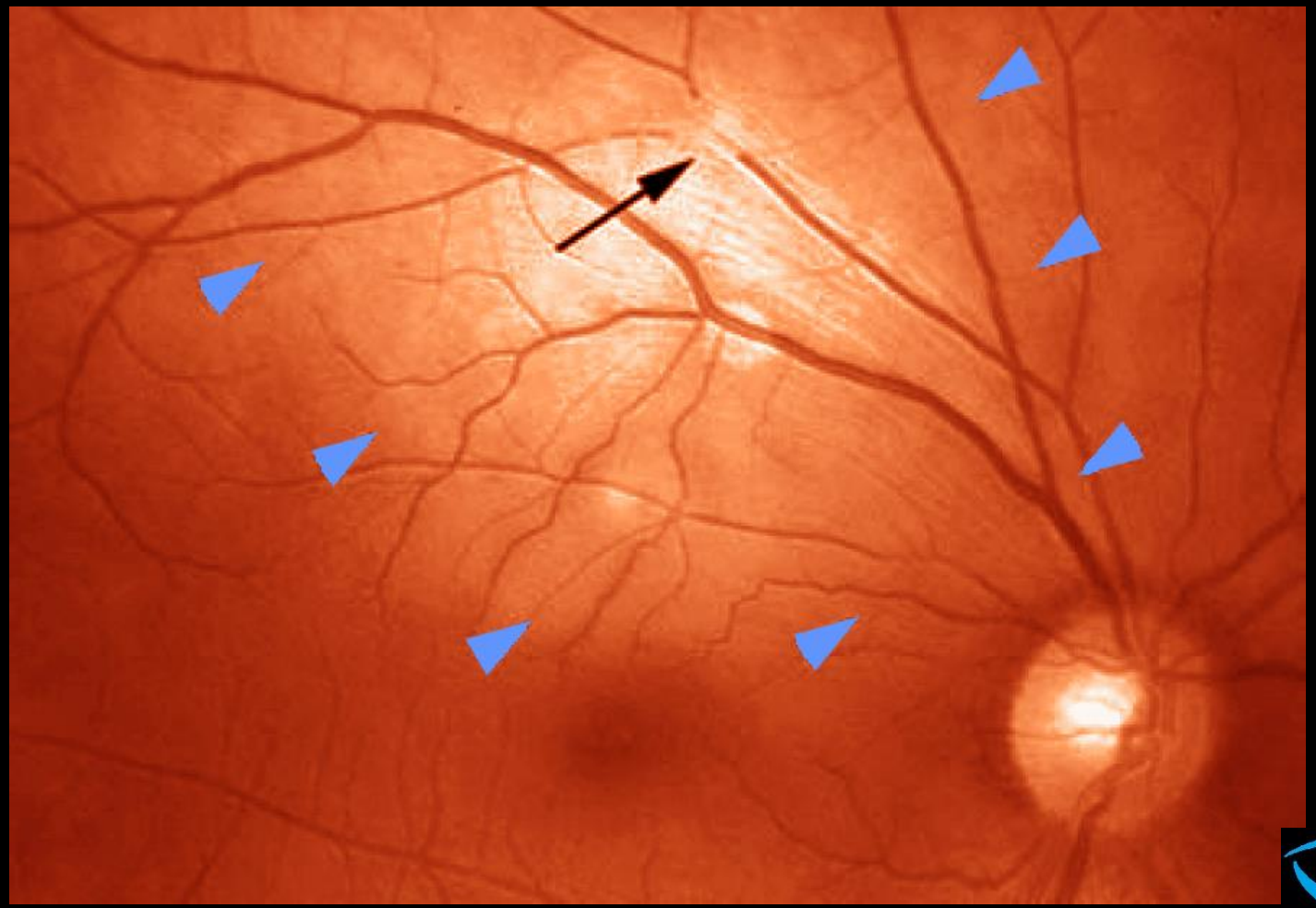
Retinal Vascular Occlusion



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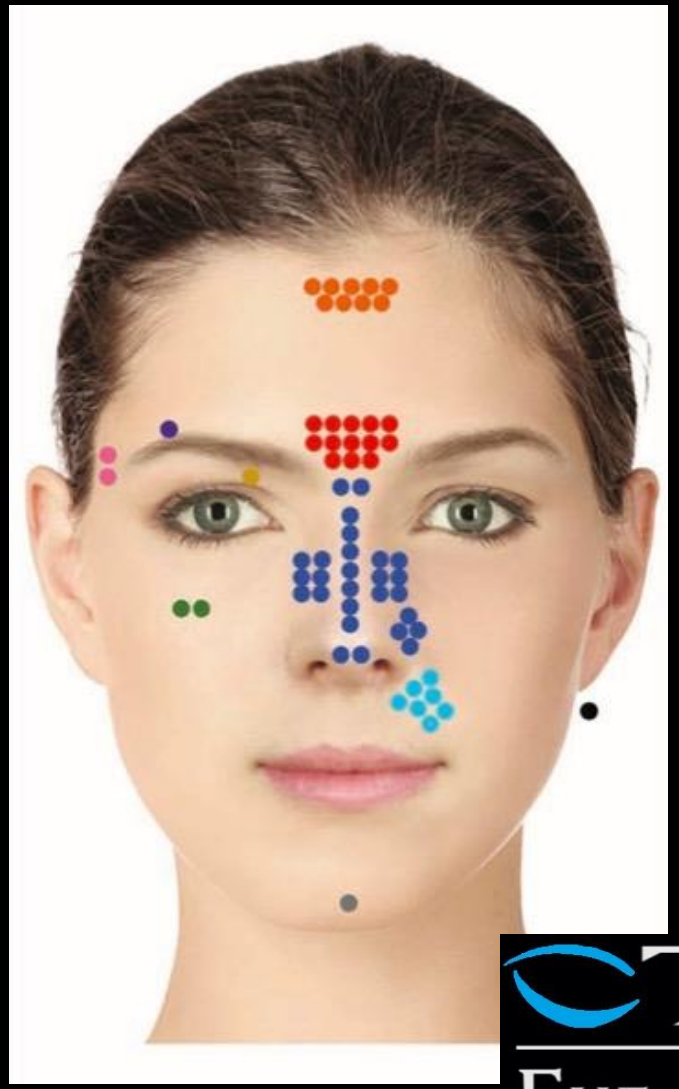
Injection Locations Association With Vision Loss

REVIEW ARTICLE

Avoiding and Treating Blindness From Fillers: A Review of the World Literature

Katie Beleznay, MD, FRCPC, FAAD,* Jean D. A. Carruthers, MD, FRCSC, FRC (OPHTH), FASOPRS,† Shannon Humphrey, MD, FRCPC, FAAD,* and Derek Jones, MD‡§

- Nasal region = 56.3%
- Glabella = 27.1%
- Forehead = 18.8%
- Nasolabial Fold = 14.6%



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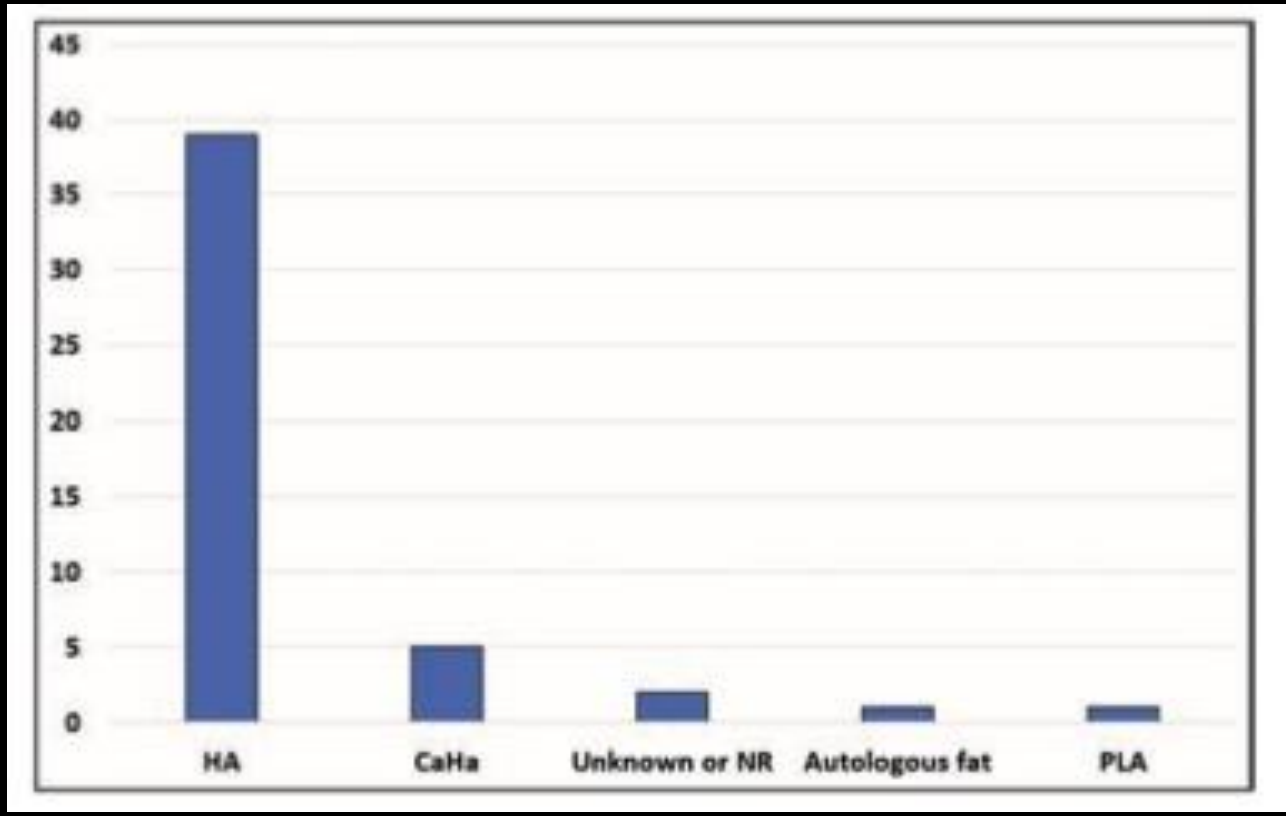
Beleznay, et al. Update on Avoiding and Treating Blindness From Fillers: A Review of the World Literature. Aesthet Surg J, 39 (2019), p. 662

Type of Filler Association With Vision Loss

- HA filler = 81.3%
- CaHa = 10.4%
- Autologous fat = 2.1%
- Poly-lactic acid = 2.1%
- Unknown = 4.2%



Beleznay, et al. Update on Avoiding and Treating Blindness From Fillers: A Review of the World Literature. Aesthet Surg J, 39 (2019), p. 662

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Treatment (?)

ORIGINAL INVESTIGATION

Light Perception Vision Recovery After Treatment for Calcium Hydroxylapatite Cosmetic ...iced Blindness

...M.D., M.S., Seanna R. Grob, M.D., ...Tao, M.D.

Oculoplastic Surgery

Preliminary Report

Efficacy of Retrobulbar Hyaluronidase Injection for Vision Loss Resulting from Hyaluronic Acid Filler Embolization

Guo-Zhang Zhu, MD, PhD; Zhong-Sheng Sun, MD; Wen-Xiong Liao, MD; Bing Cai, MD; Chun-Lin Chen, MD; Hui-Hui Zheng, MD; Li Zeng, MD; and Sheng-Kang Luo, MD, PhD

Aesthetic Surgery Journal
2018, Vol 38(1)12–22

DOI: 10.1093/asj/sjw216
www.aestheticsurgeryjournal.com
OXFORD UNIVERSITY PRESS

...ion After Hyaluronic Acid Filler

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Treatment (?)

- No gold standard for treatment
- High volume of hyaluronidase
- Nitropaste to areas of skin ischemia
- Aspirin
- Lower the intraocular pressure
  - Orbital massage
  - Anterior chamber paracentesis
  - Topical glaucoma medications +/- acetazolamide
- Increase vasodilation → hyperventilate in paper bag (increase CO_2)
- Retrobulbar hyaluronidase??
- Hyperbaric oxygen??

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How to Avoid/Minimize Complications

- **KNOW YOUR ANATOMY**
  - Location of known vessels
- Consider using a cannula rather than needle
- Non-permanent filler (ability to dissolve)
- Avoid areas of scarring (fixed blood vessels)
- Limit injection pressure
- ??aspirate before injecting??

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Questions?

msomogyi@tocaustin.com

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