


Missing Tissue is the Issue: Considerations in Orbital Reconstruction

Jeremy F Tan, MD

Clinical Associate Professor

 **Dean McGee Eye Institute**

Department of Oculofacial Plastic and Reconstructive surgery

608 Stanton L Young Boulevard | Oklahoma City, OK 73104

Oklahoma University Health Sciences Center

Financial Disclosures

- Speaker Bureau
 - Tepezza
 - Kerecis

Goals

- Review thought process of reconstruction of orbital defects
 - Globe sparing cases
- Introduce usage of intact acellular fish skin xenograft for replacement of medial wall and floor defects for orbital support

Etiology

- Trauma
 - Acute
 - Chronic
- Post resection
- Congenital

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Trauma

- Acute
 - Mechanism
 - Motility exam
 - Size of fracture with globe position

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 - Size of fracture with globe position

Mechanisms of injury

- Gun shot
- Firework
- Knife, blade and handle
- Grinding wood, metal, tile
- Landscaping injury
- Farm equipment
- Motor vehicle, motor bike, ATV
- Falls- standing, off ladder,
- Livestock/large animal injury
- Fist, foot, knee, elbow, head
- Softball, baseball
- Lock in sock, bat

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Trauma

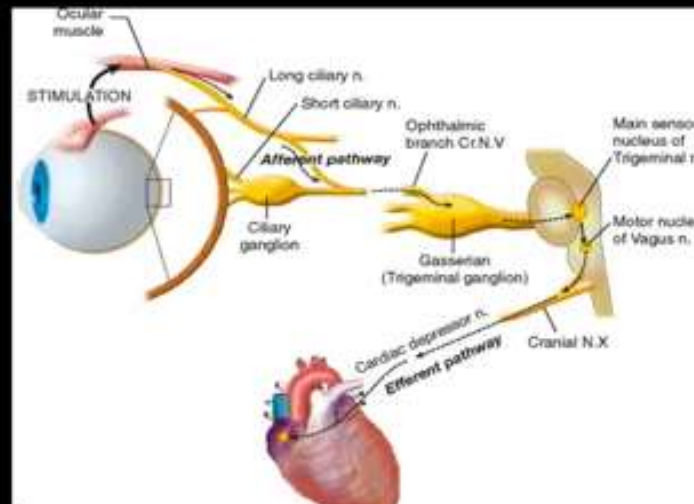
- Acute
 - Mechanism
 - **Motility exam**
 - Size of fracture with globe position

Balance and Motility

- Deficient movement
 - Intrinsic forces
 - Weak, nerve injury- distal peripheral versus cranial nerve
 - Extrinsic forces
 - Restricted
 - Entrapment, tethering, orbital edema

FINDINGS WITH EOM

- Double vision
 - Inequivalent yoking
- Pain
 - Suggests tethering or capture of muscle/fat
 - Edema and direct contusion
- Nausea, vomiting,
 - Oculocardiac reflex

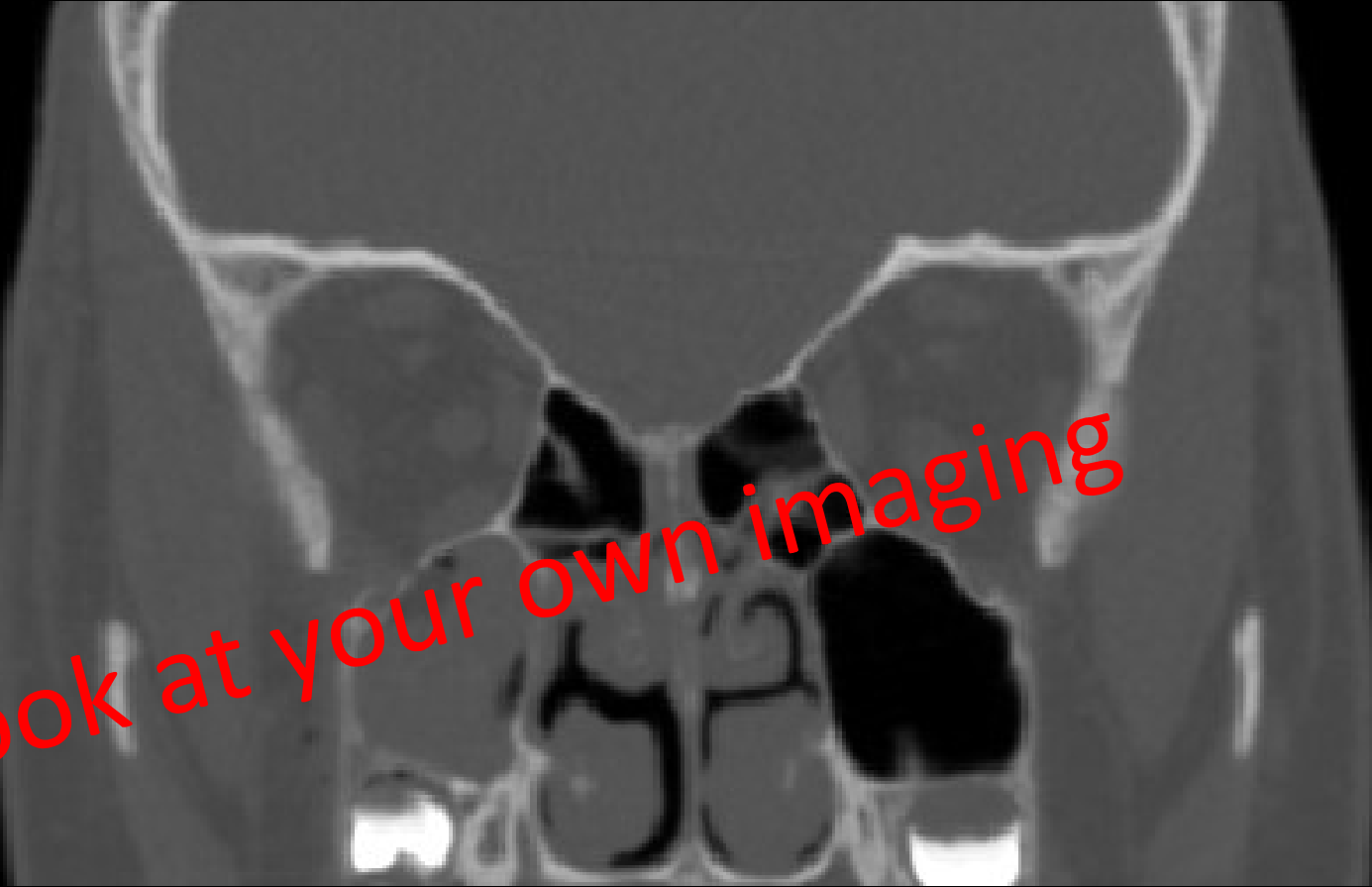


Afferent- Trigeminal
Efferent- Vagal





Look at your own imaging





CONSIDERATIONS



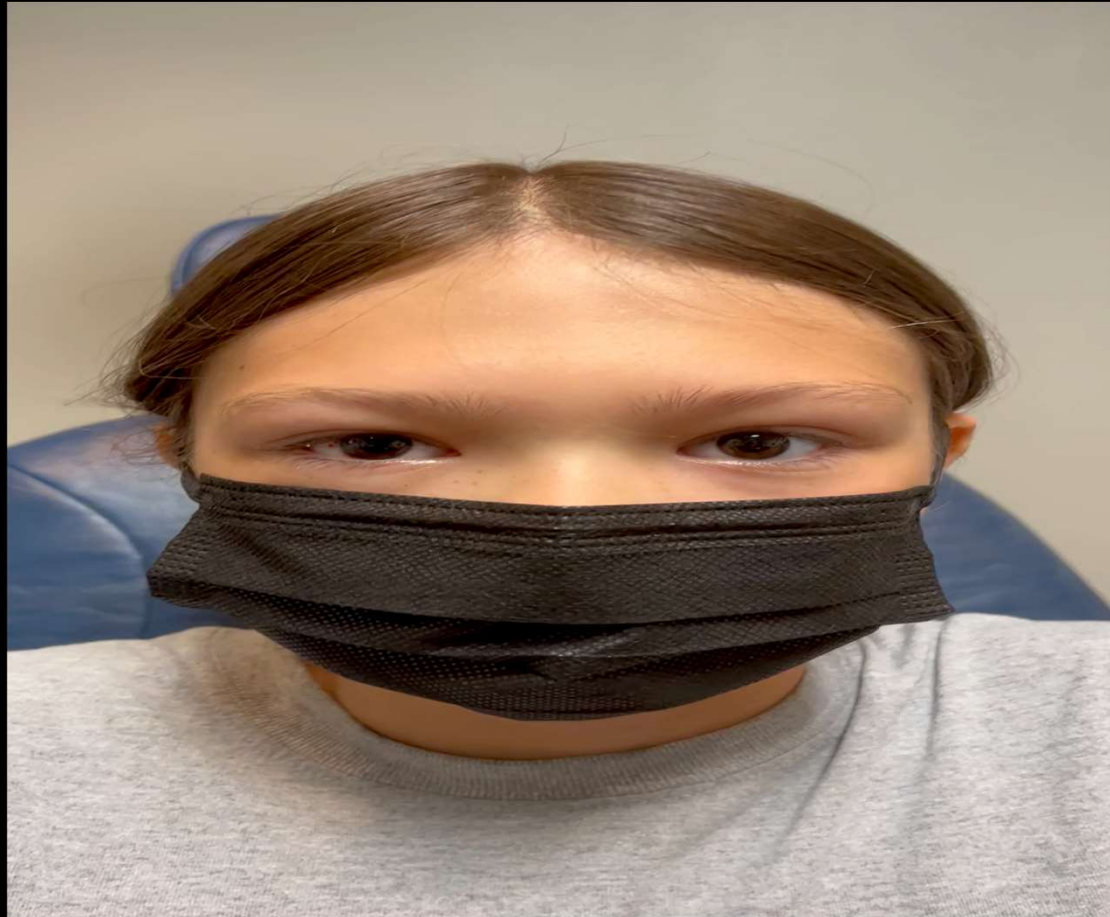
MANAGEMENT OF RESTRICTED EOM

- ADULT/SWOLLEN

- Telemetry (OCR)
- Consider steroid (+/-antibiotic)
- TIME

- CHILD/QUIET

- Telemetry (OCR)
- Timely intervention
- Steroid before/after

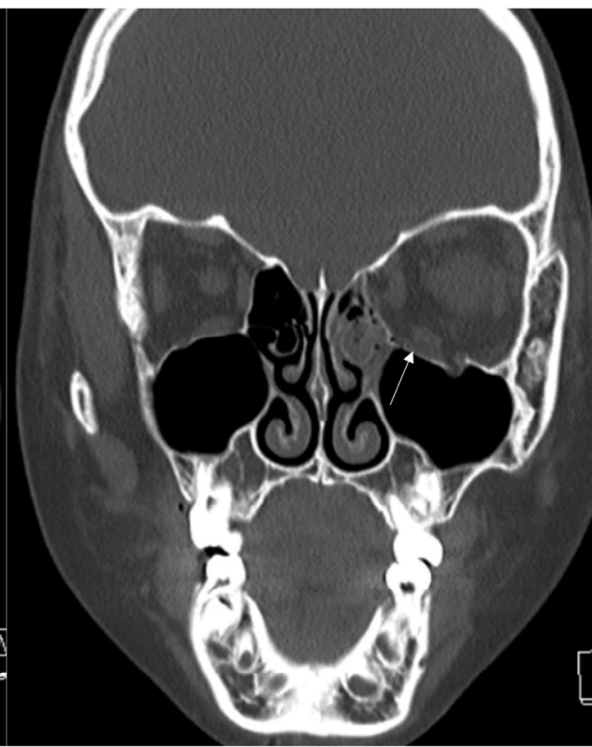
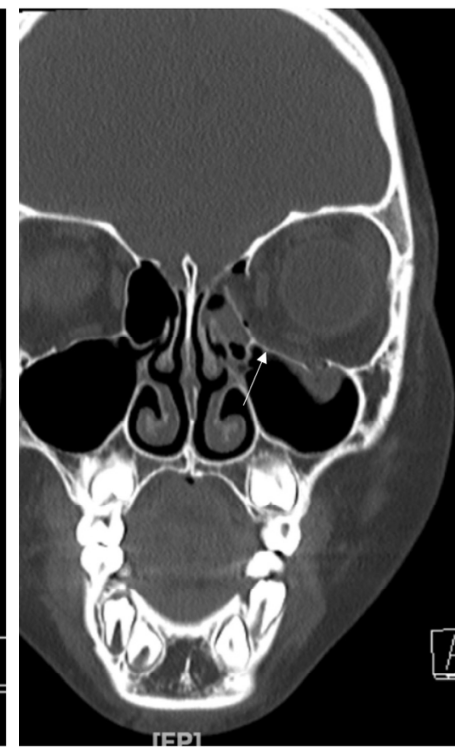
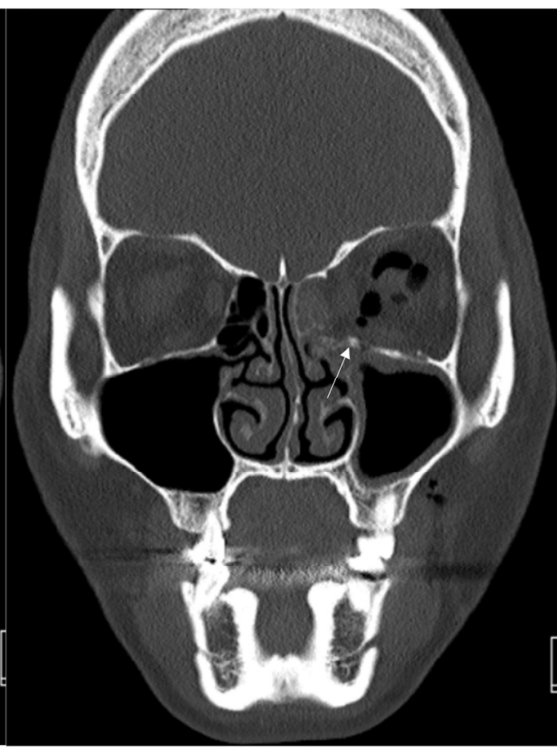
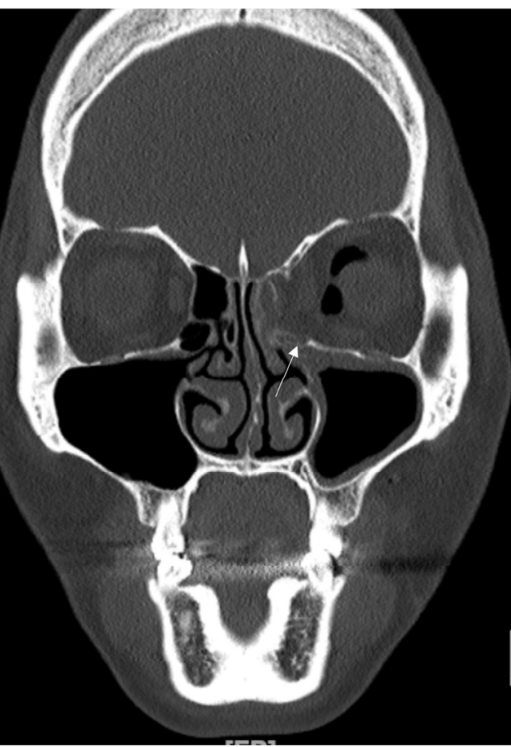


Trauma

- Acute
 - Mechanism
 - Motility exam
 - Size of fracture with globe position

CONSIDERATIONS





Etiology

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 - Chronic
- Post resection
- Congenital

What's Missing?

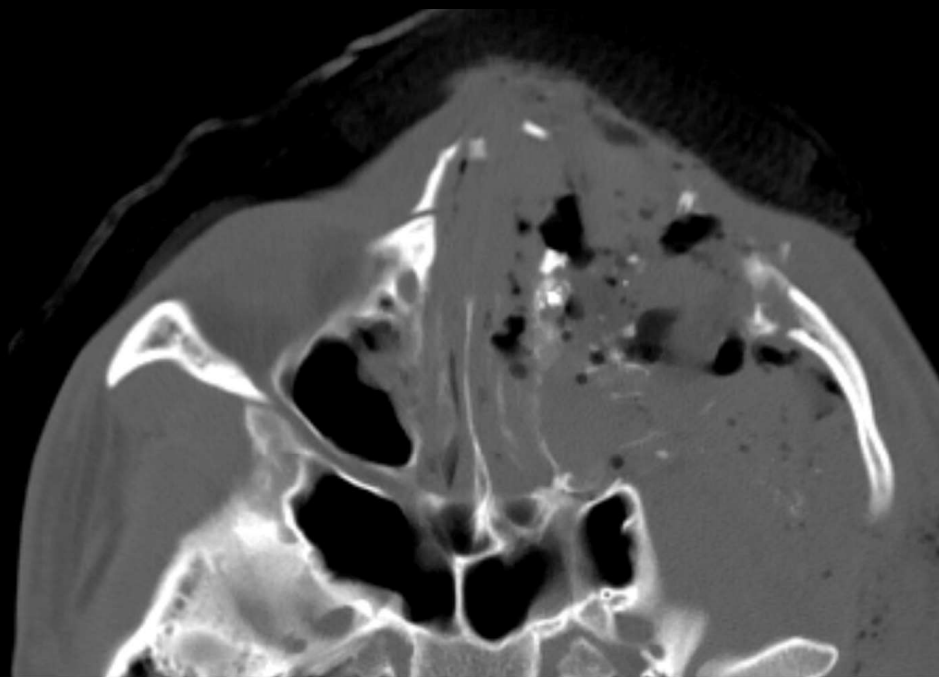
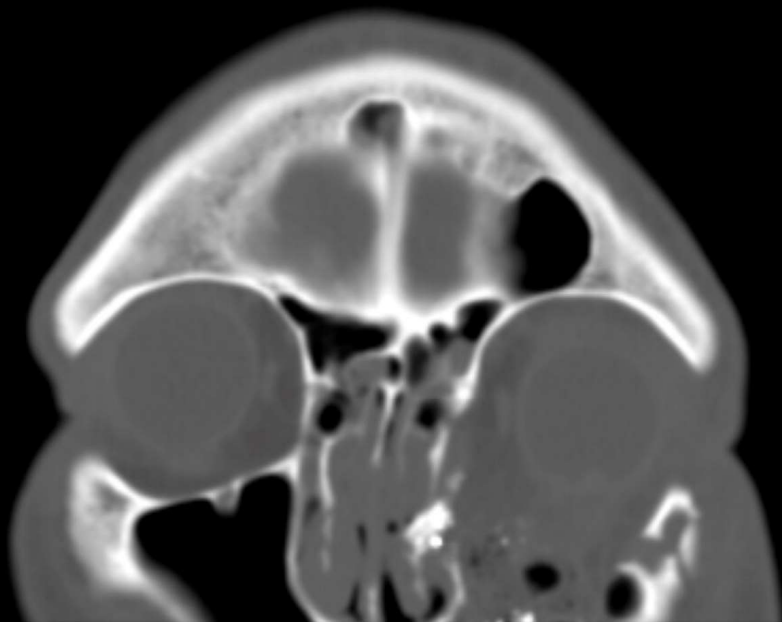
- Support
- Barrier
- What do you have available
- What concerns peri/post

What's Missing?

- Support
 - *Globe position, alignment, motility*
- Barrier
- What do you have available
- What concerns peri/post







What's Missing?

- Support
- Barrier
 - Medial/floor/anterior roof- sinus
 - Lateral- transmission of temporalis movement
 - Roof- pulsatile exophthalmos
- What do you have available
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Ophthalmologist

- Vision/globe salvage
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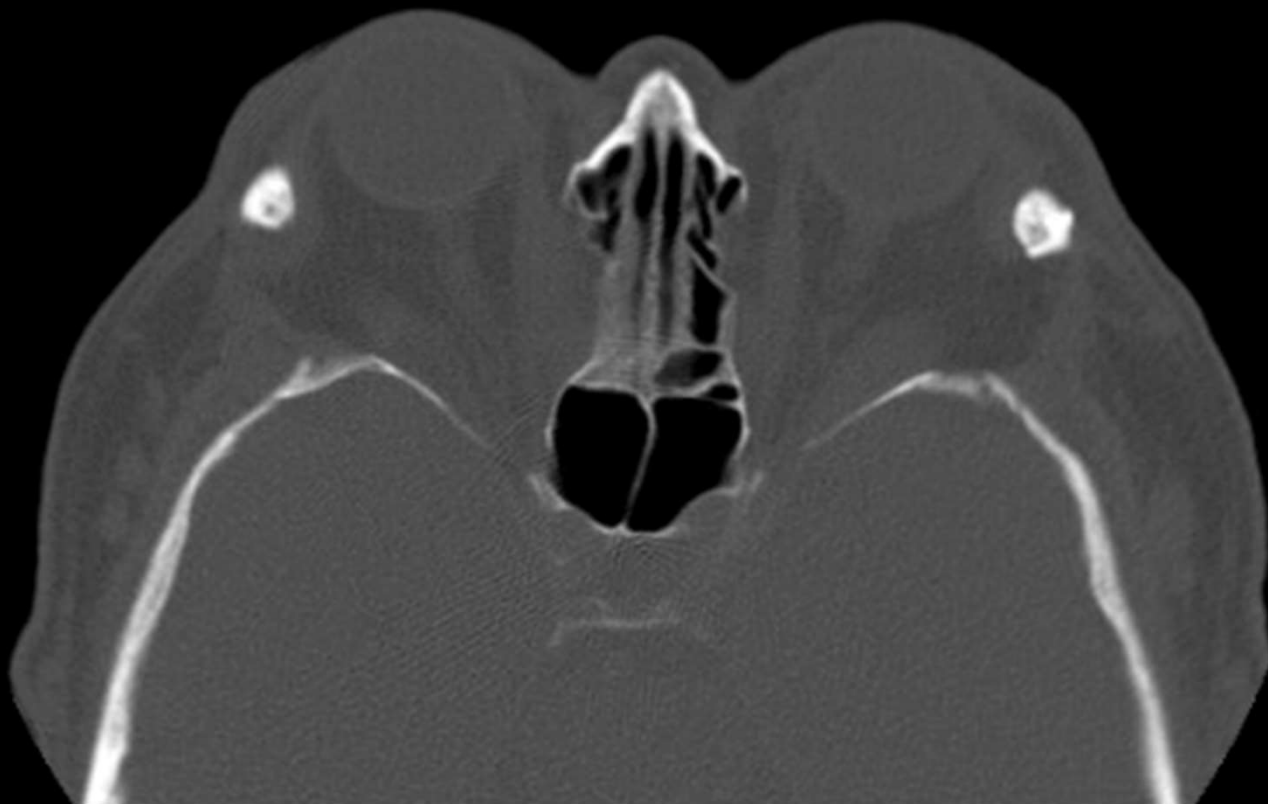
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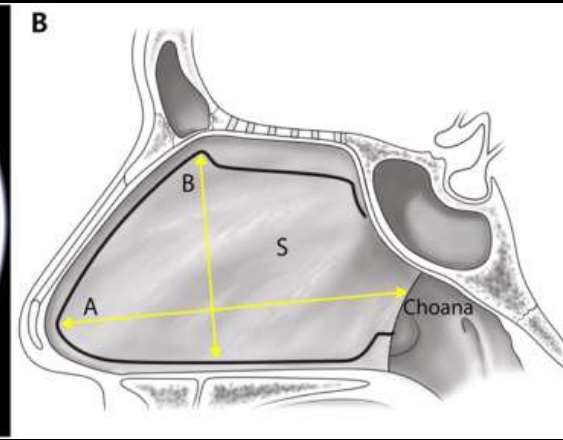
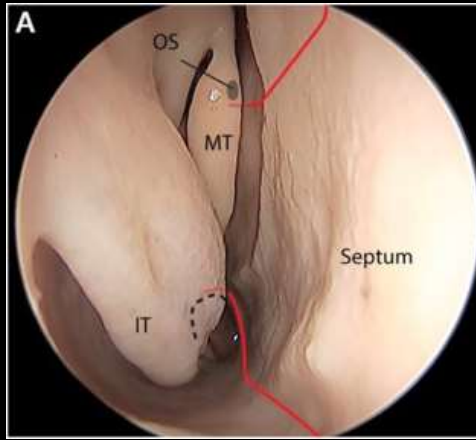
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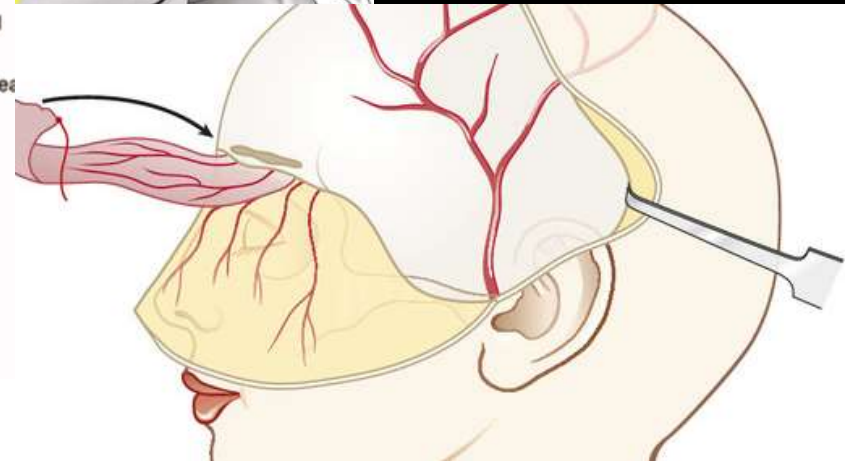
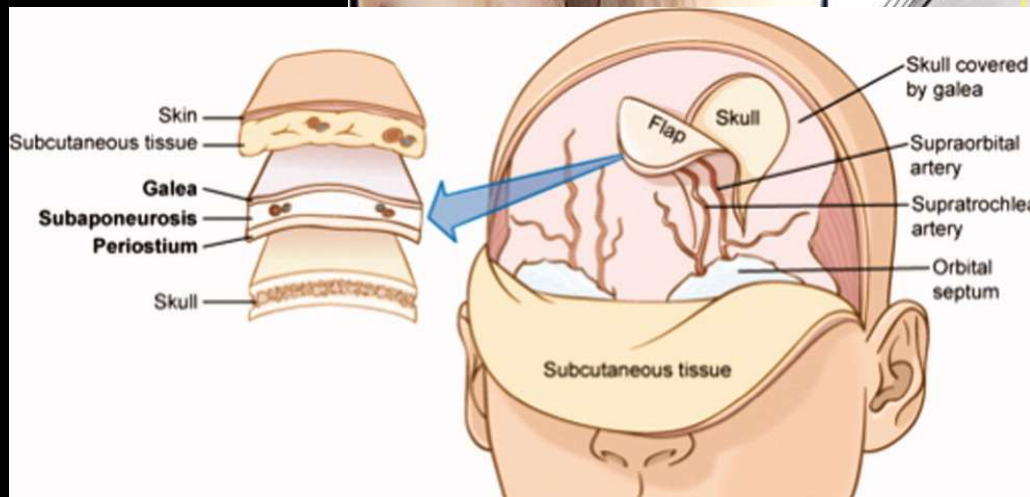
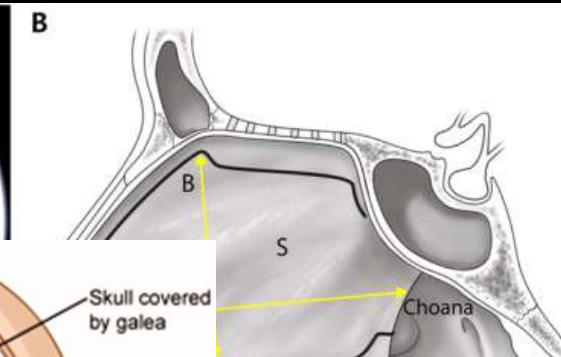
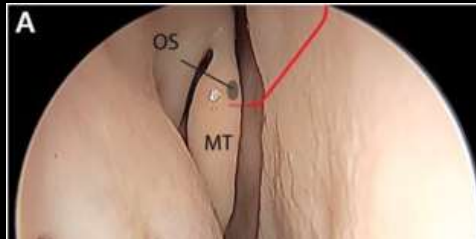


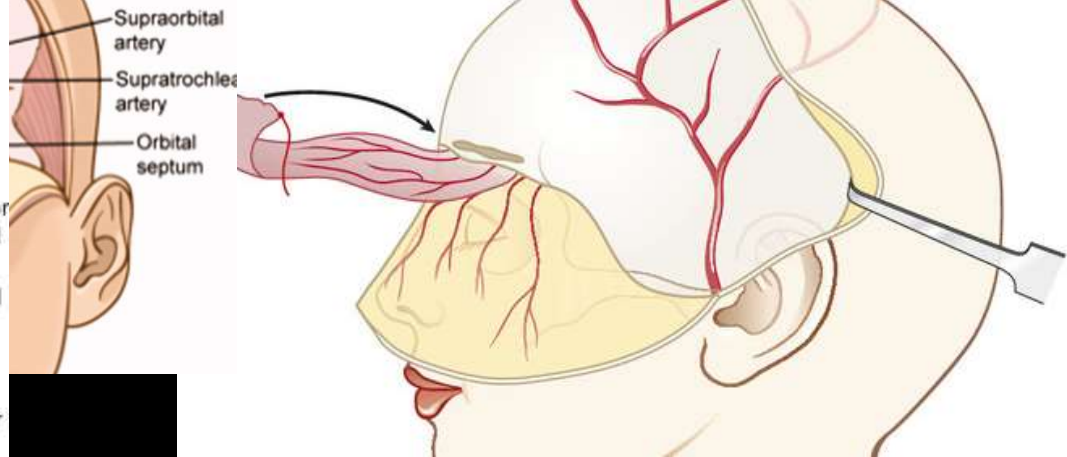
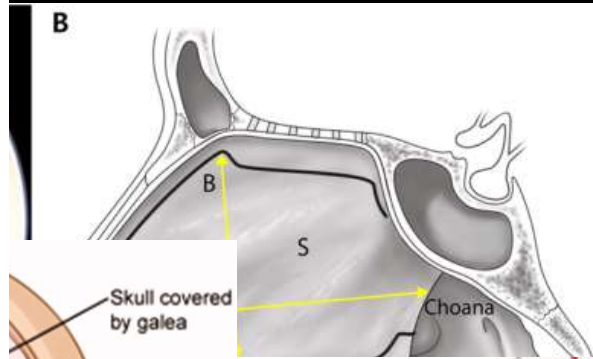
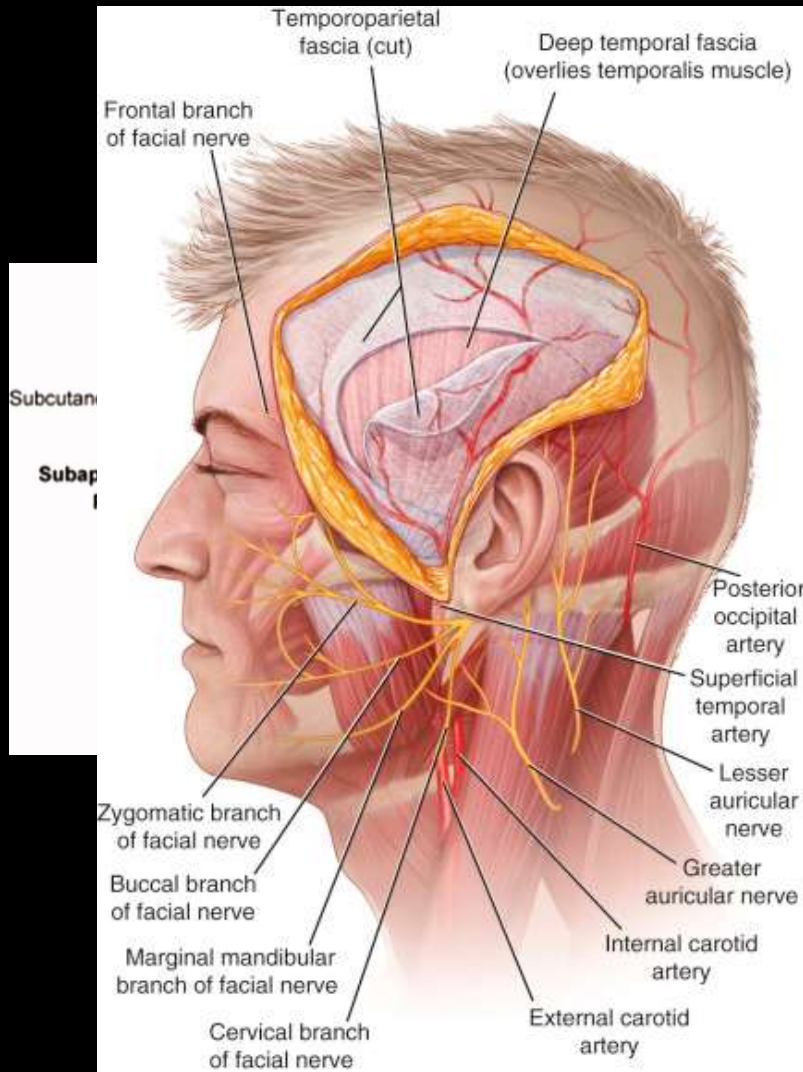


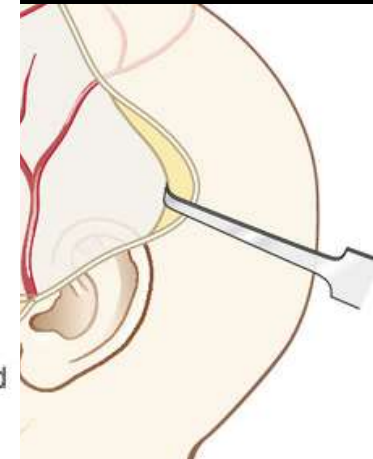
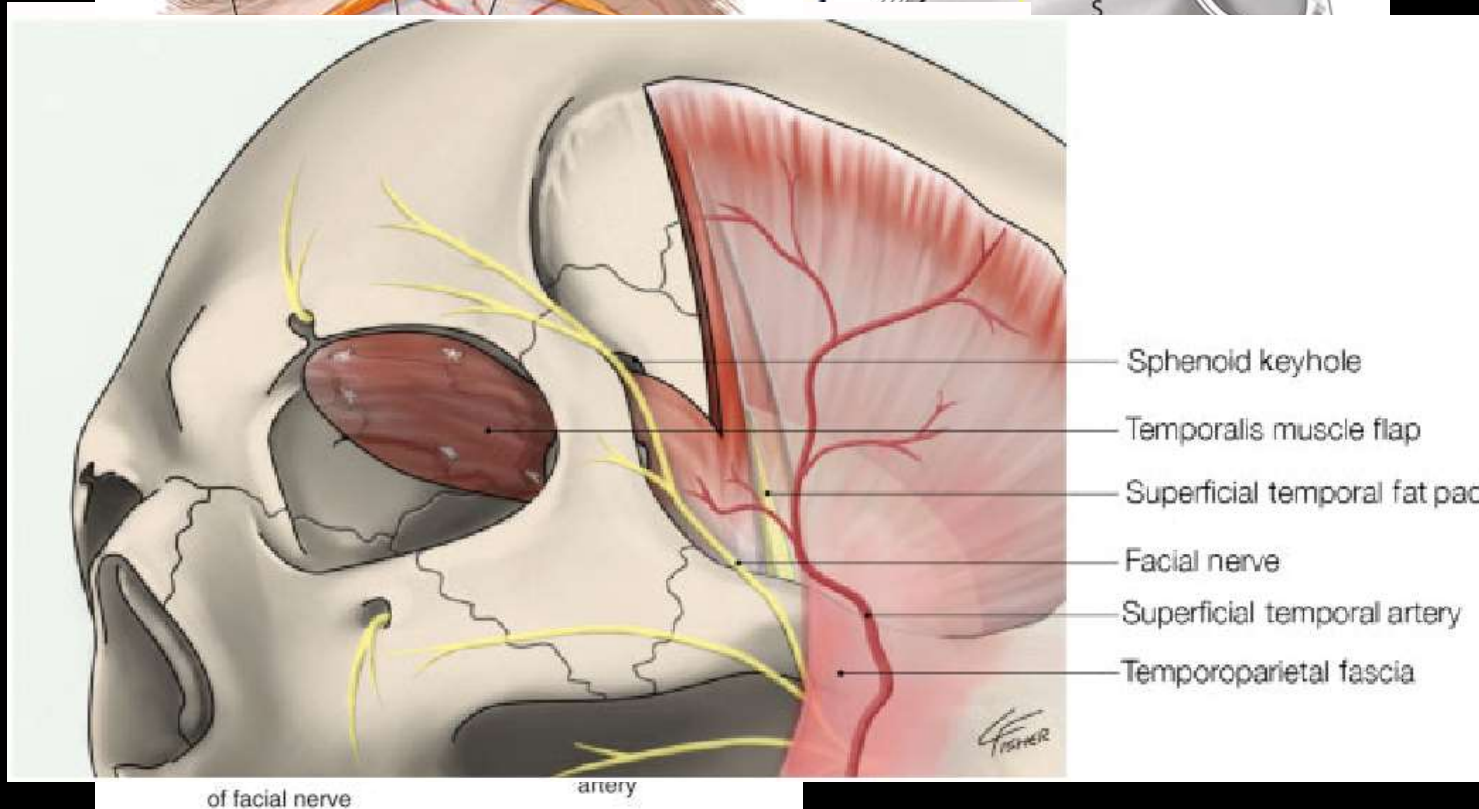
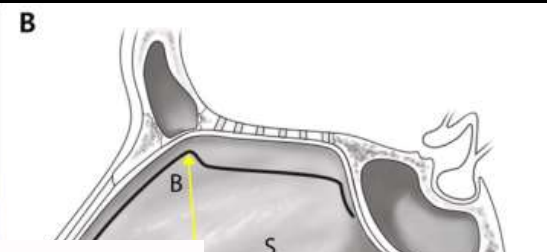
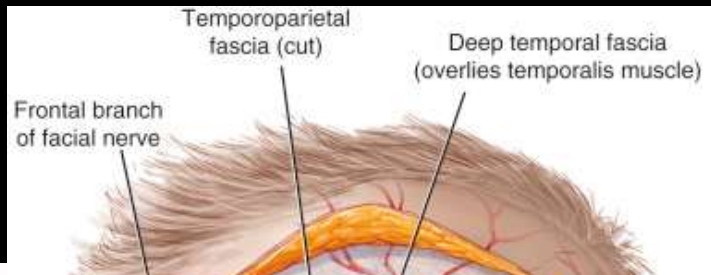
What's Missing?

- Support
- Barrier
- What do you have available
 - From the body
 - Locally
 - Distally
 - Off the shelf
 - Temporary
 - Permanent
- What concerns peri/post









Ophthalmologist

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Ophthalmologist

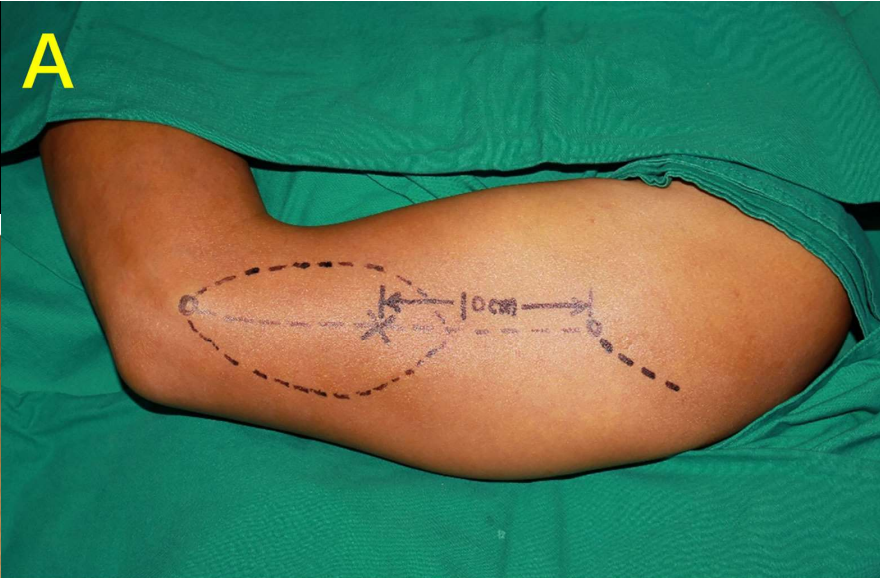
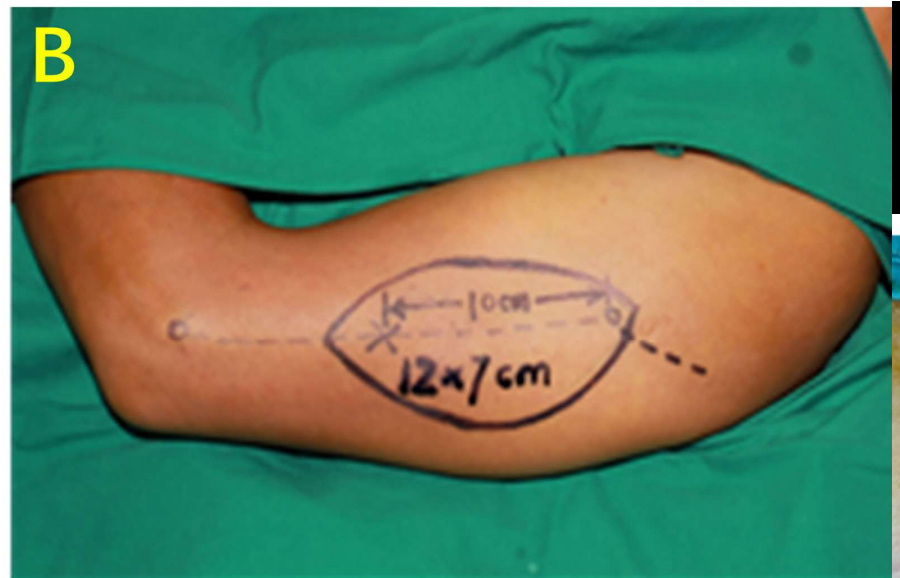
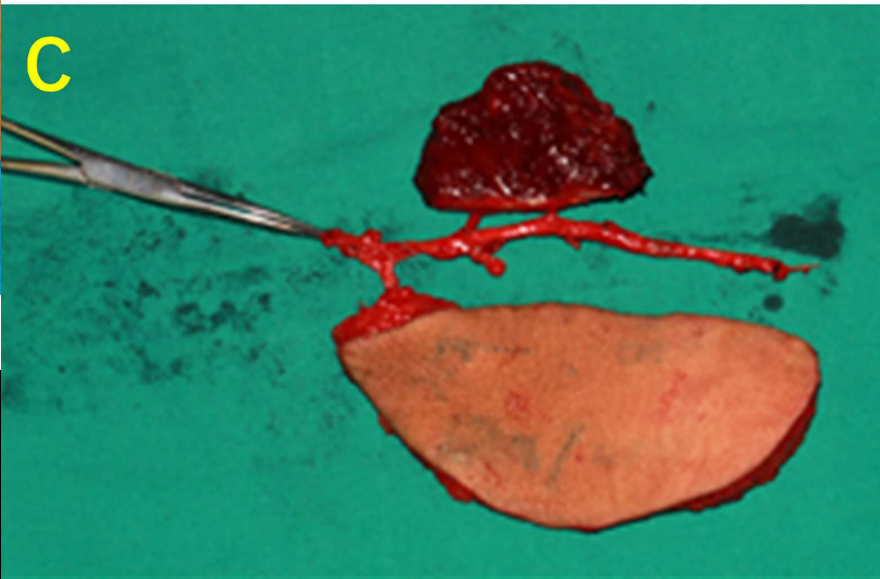
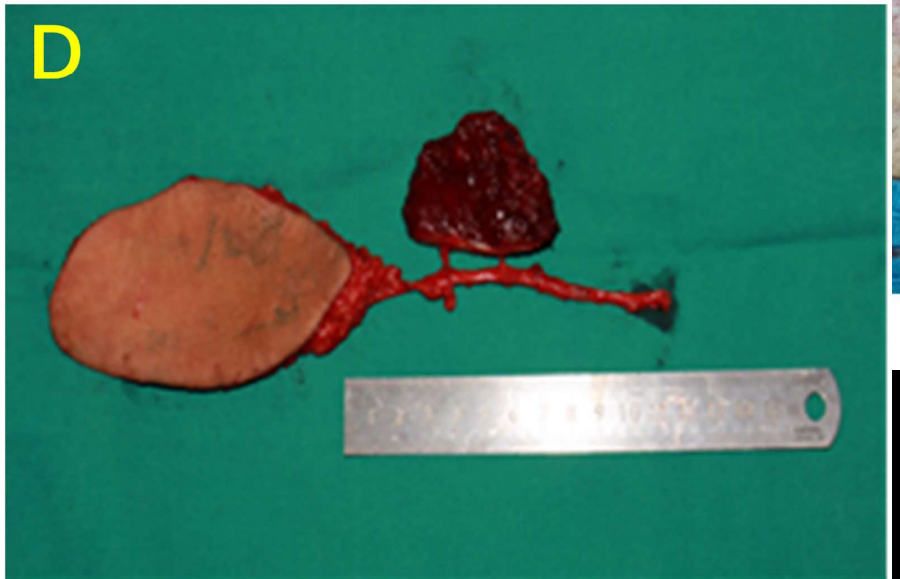


(a)



(b)

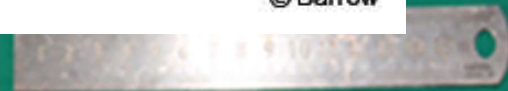
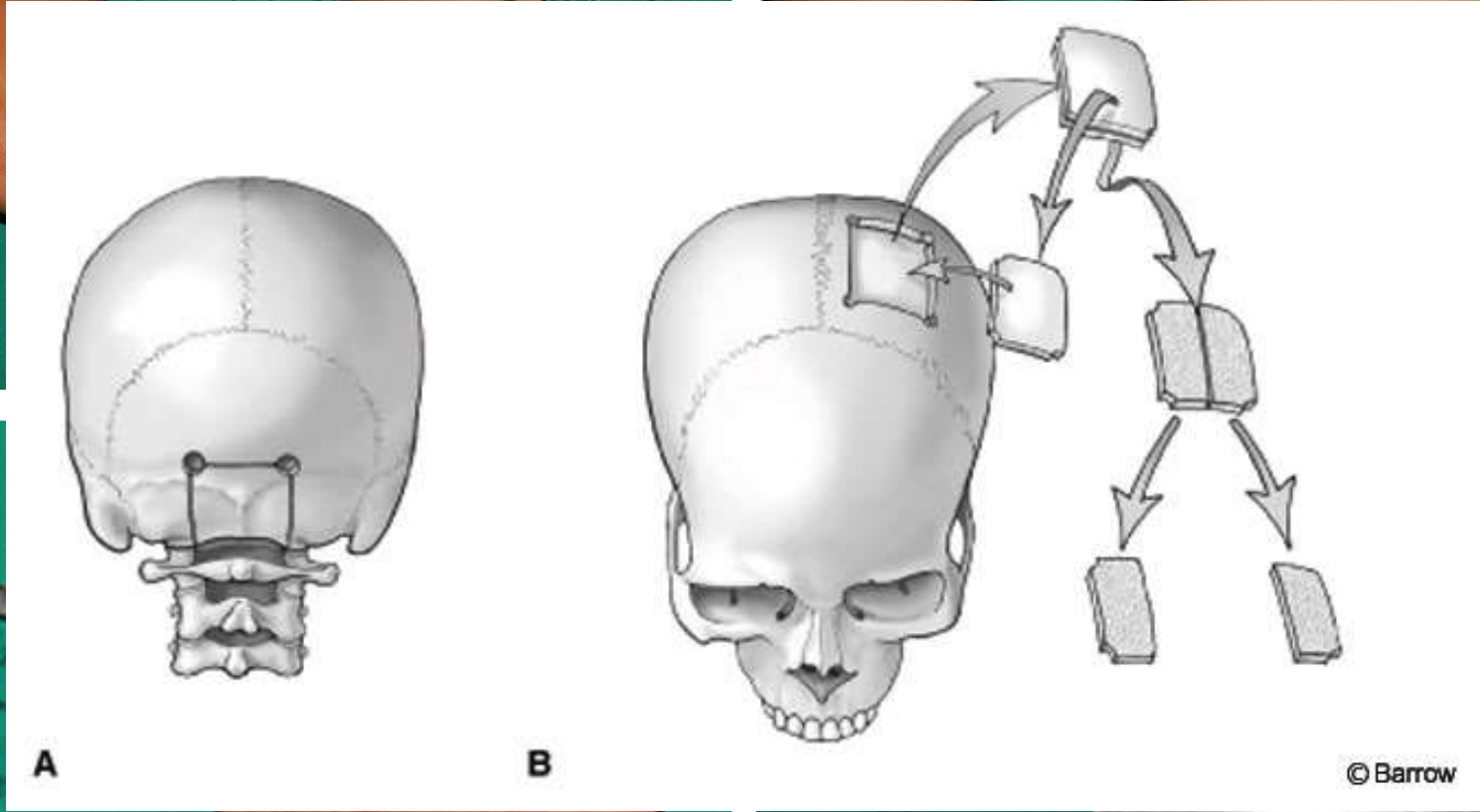
- Permanent
- What concerns peri/post

A**B****C****D**

A

B

C



Ophthalmologist

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Ophthalmologist

- Vision/globe salvage

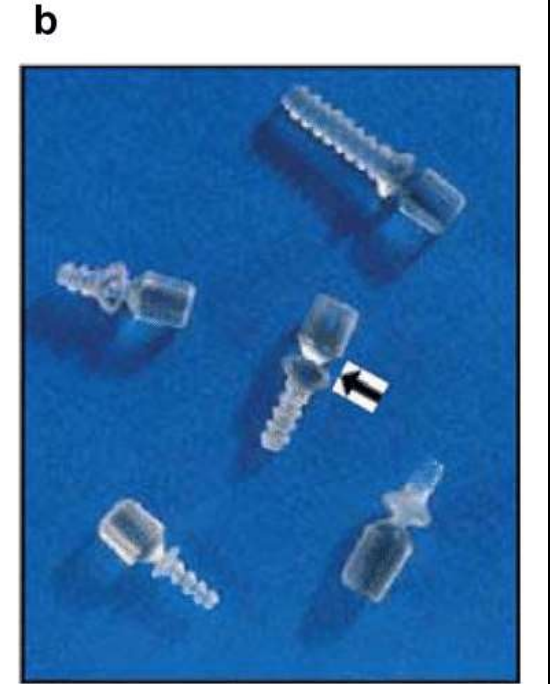
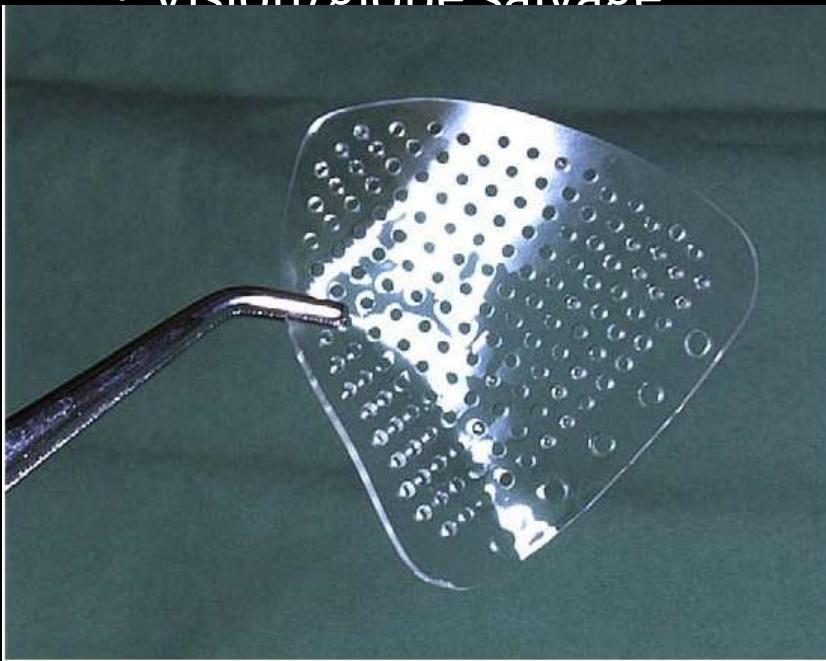
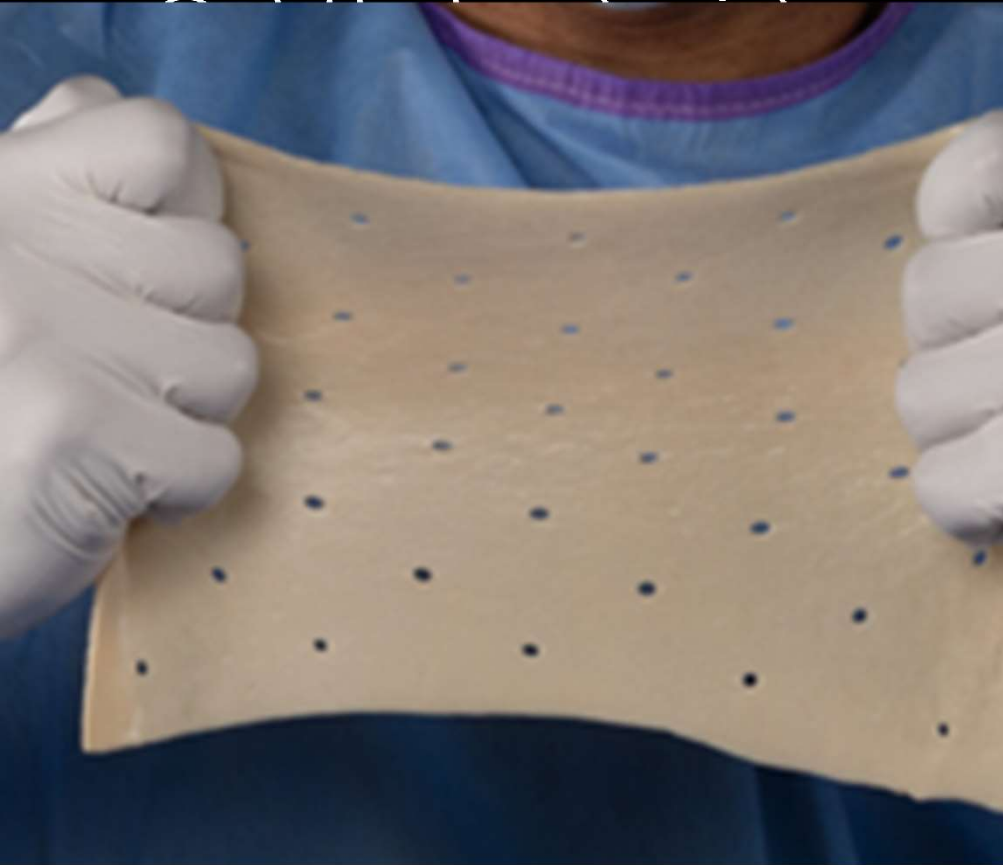


Fig. 6. Resorbable intracocular (Synthetic PCL) post for



- What concerns peri/post

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- Vision/globe salvage
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Ophthalmology

- Vision/globe safety

- Support

- Barrier

- What do you

- From the back

- Locally

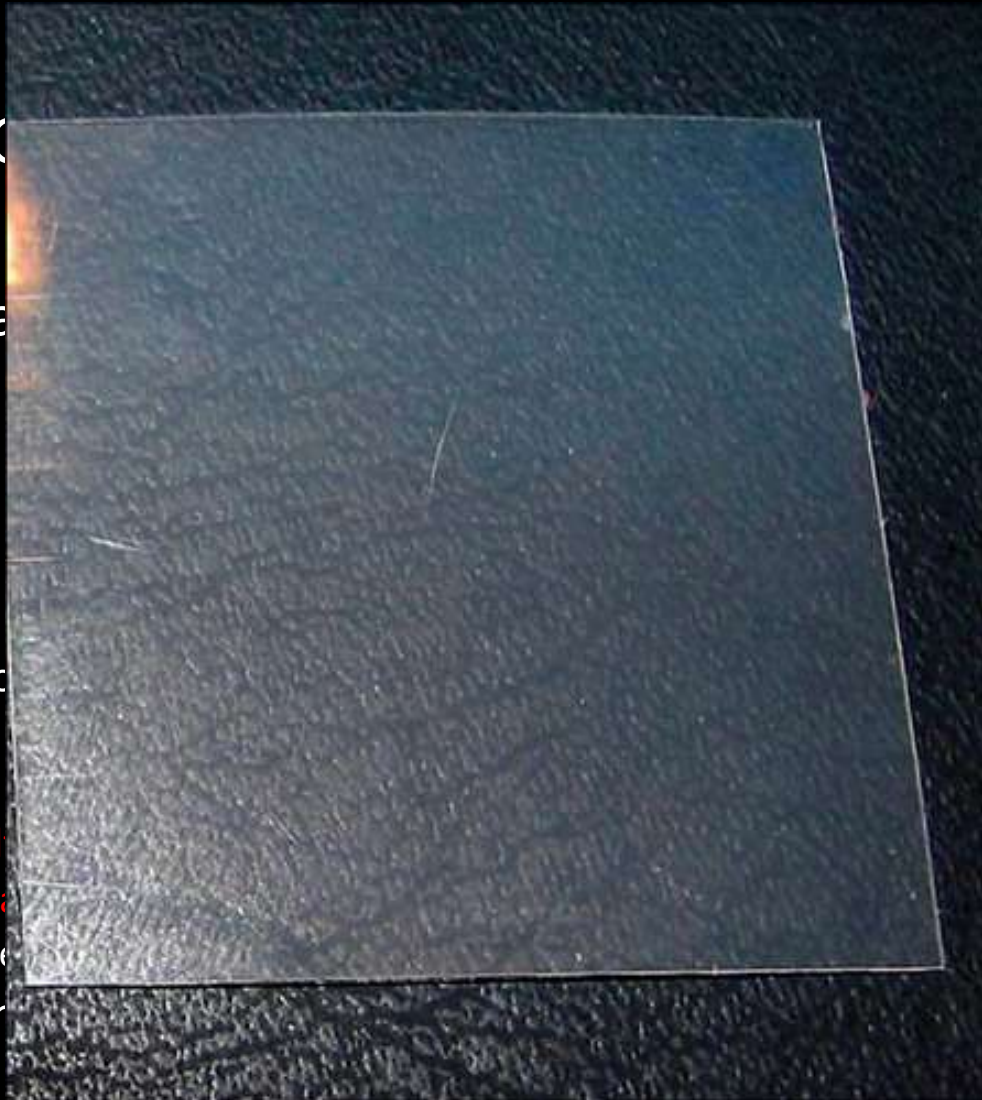
- Distally

- Off the shelf

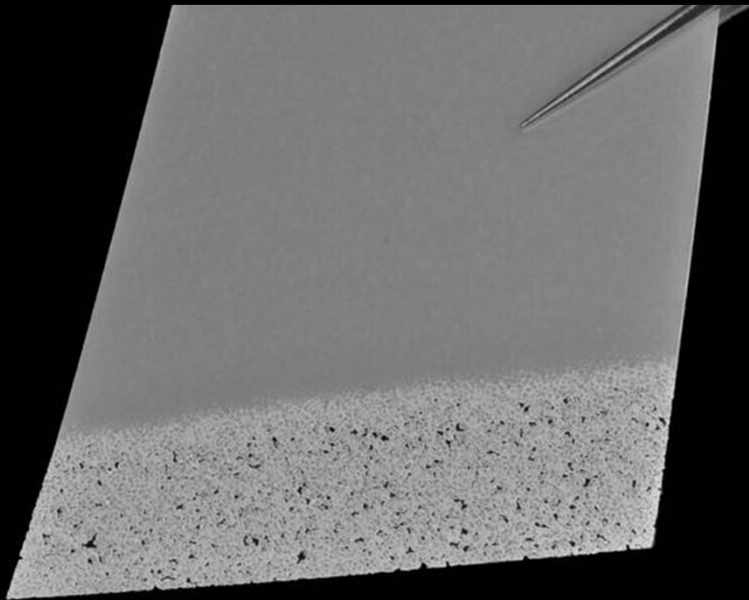
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- Permanent

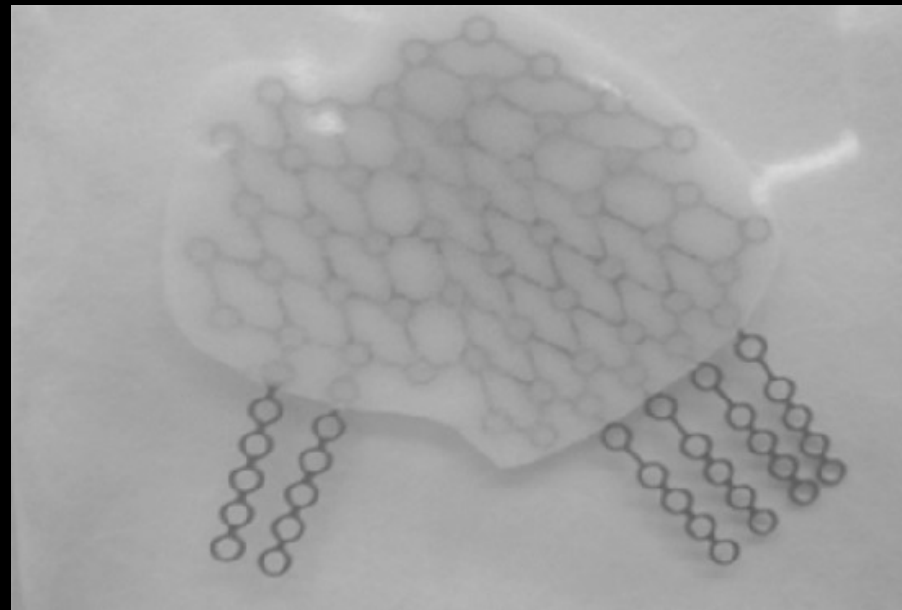
- What concerns



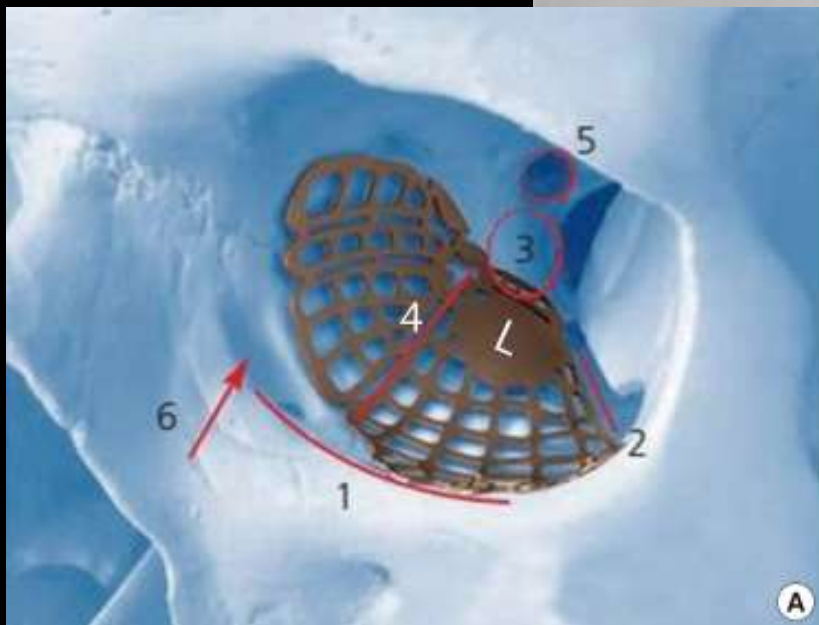
Ophthalmologist



- temporary
- Permanent
- What concerns peri/post



Ophthalmologist



- Temporary
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- What concerns peri/post

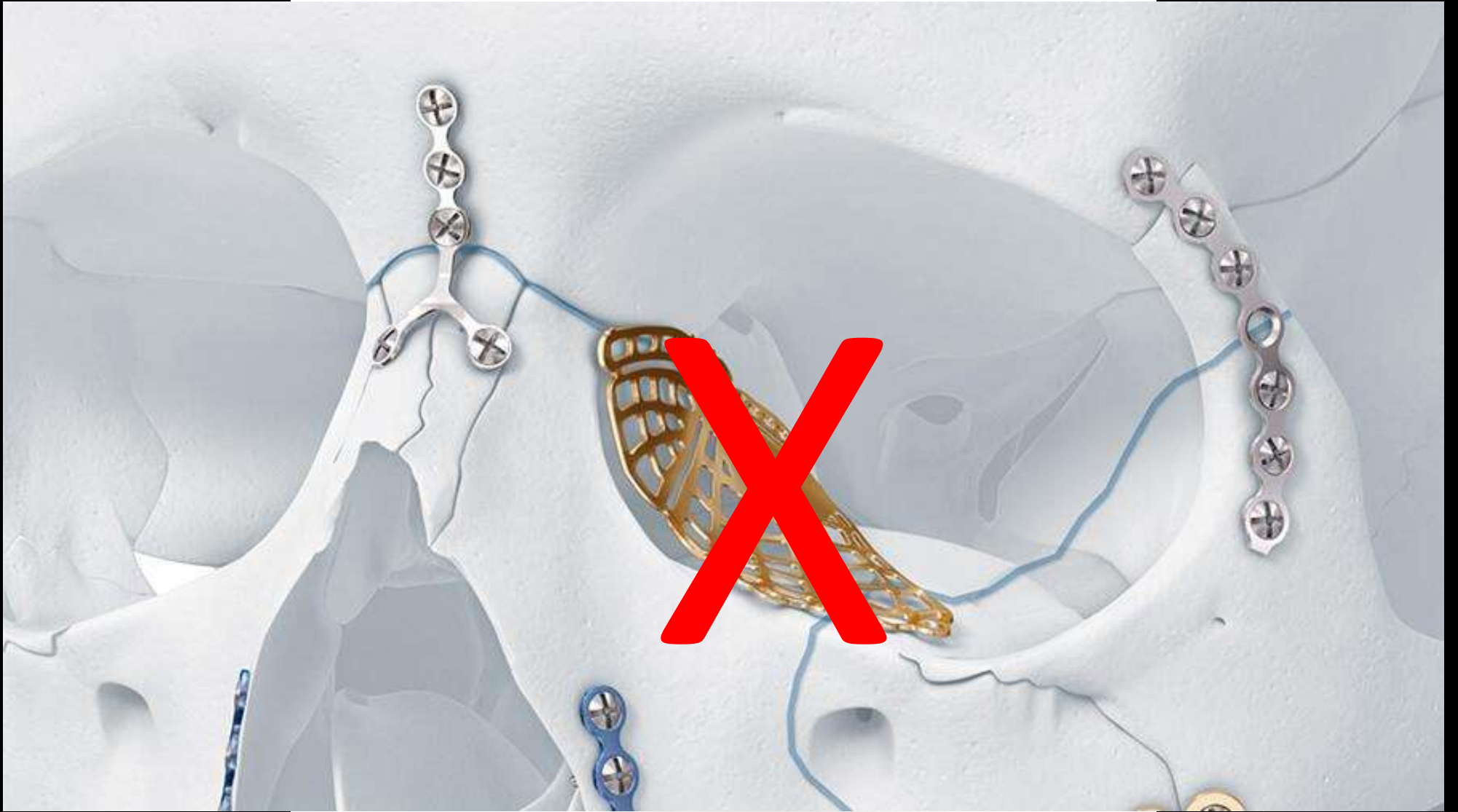
Ophthalm



- Te
- Pe
- What con







What's Missing?

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Space

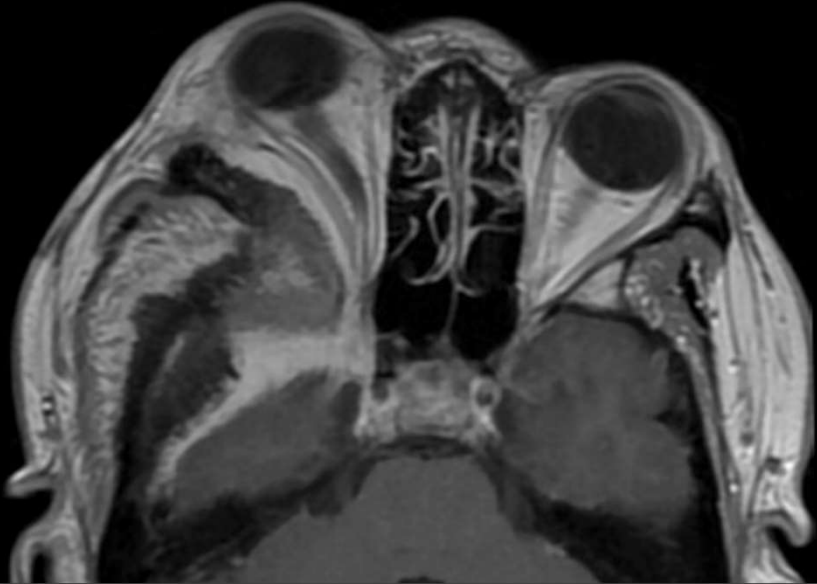
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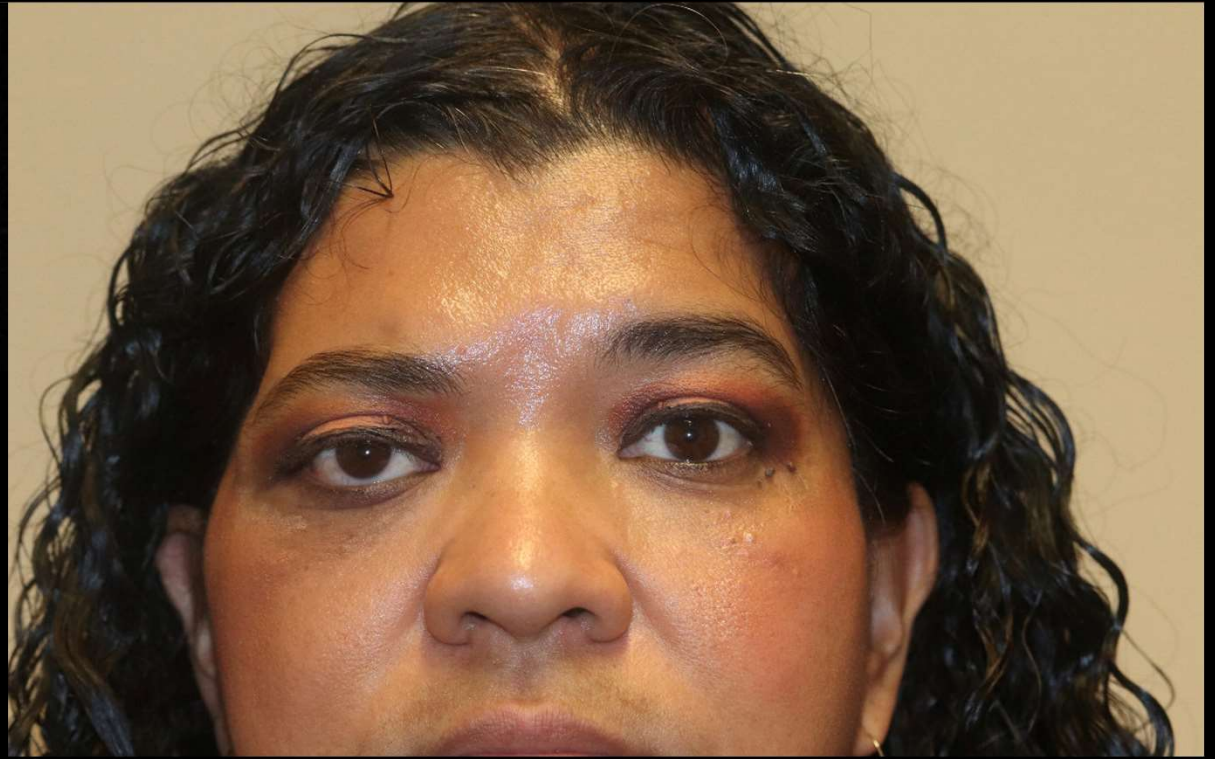
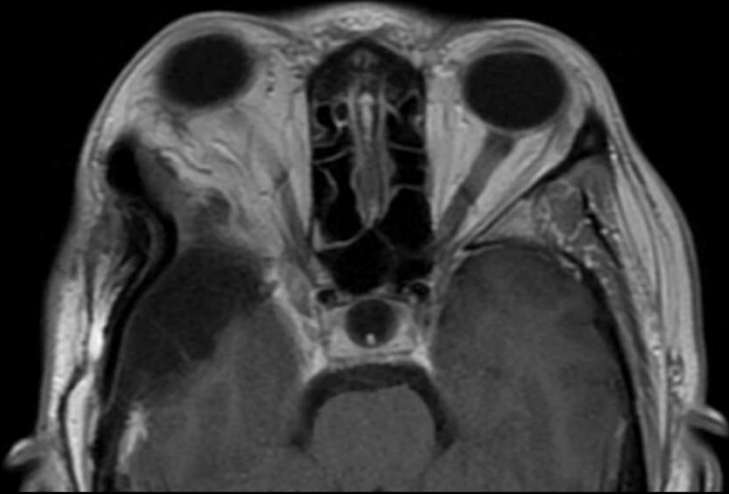
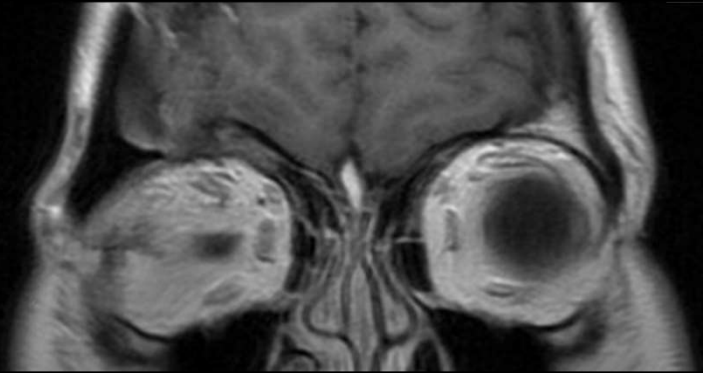


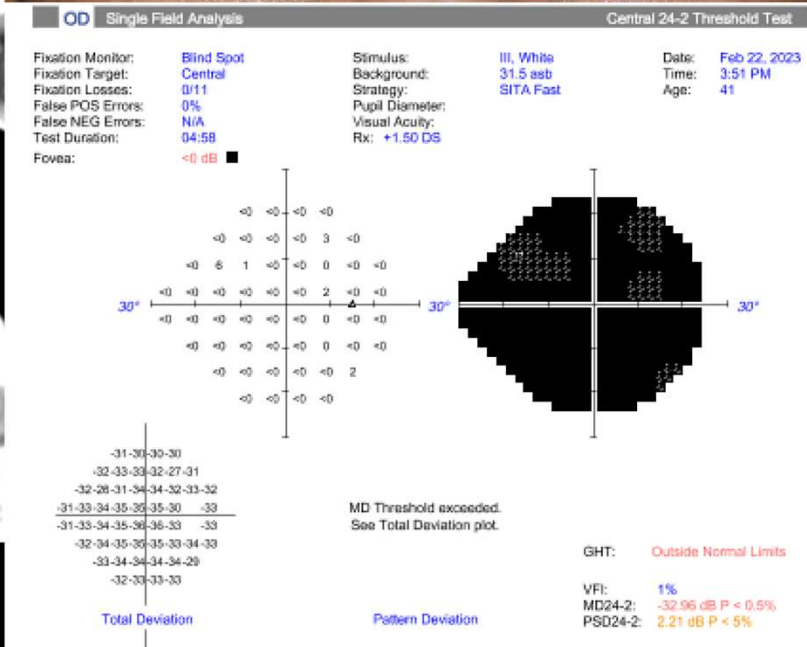
Space



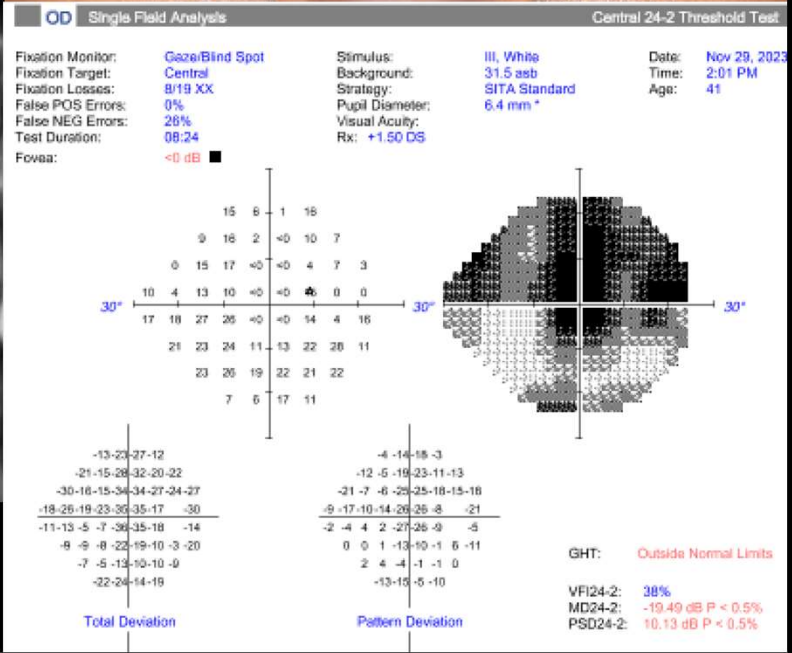
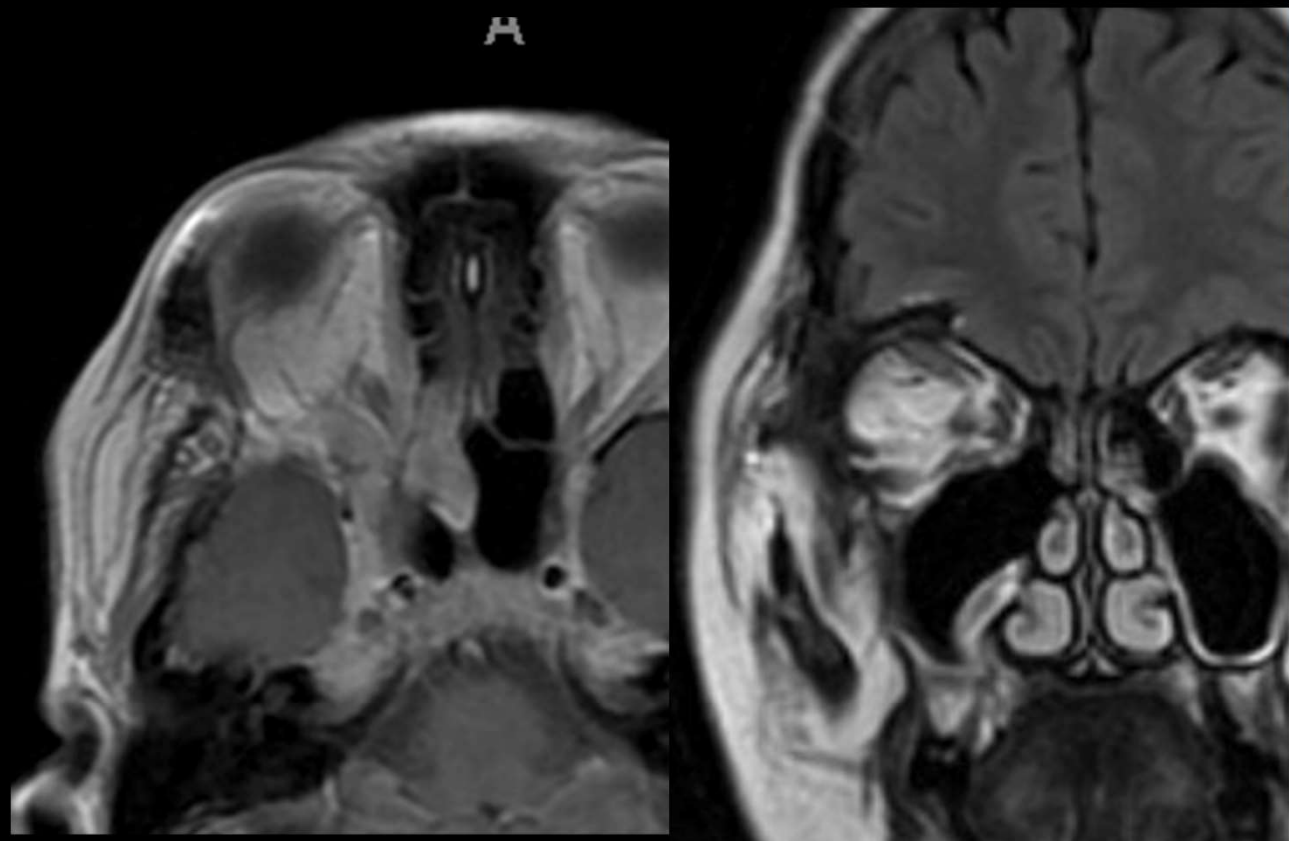
Sphenoid wing meningioma







A



Healing

Healing

Infection

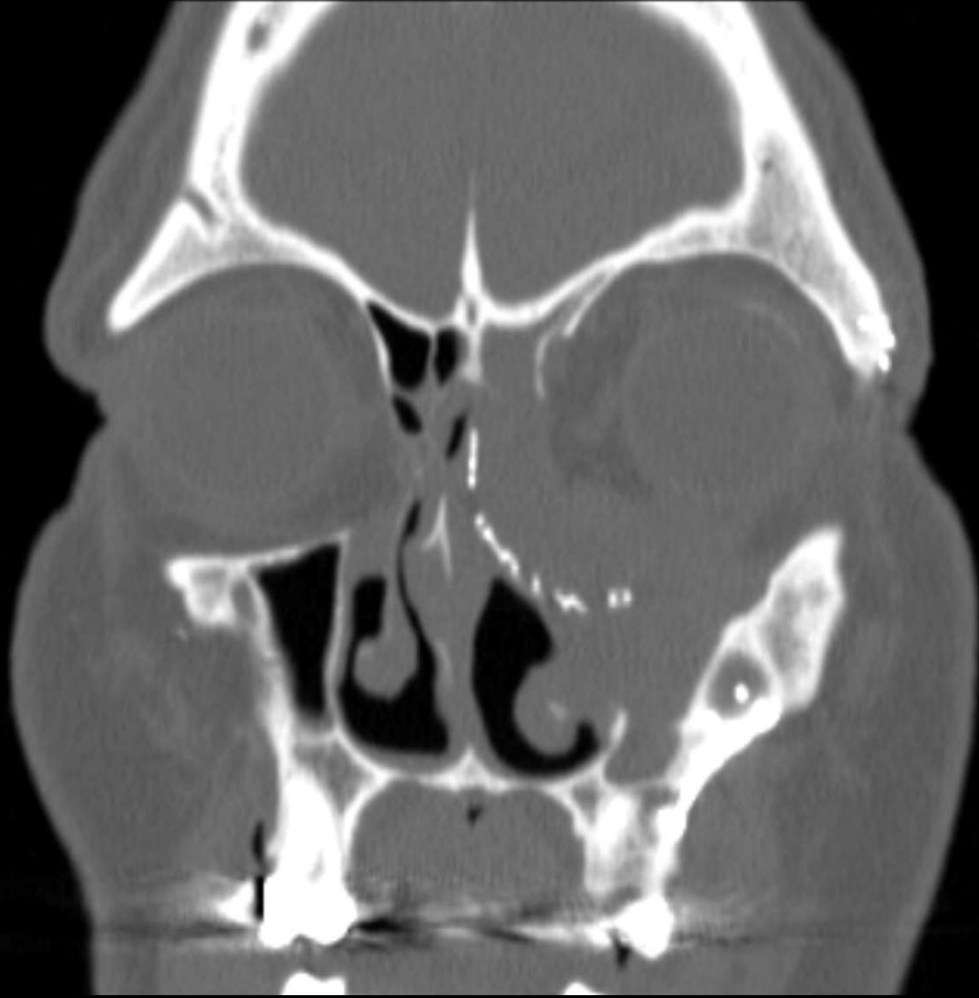


Healing

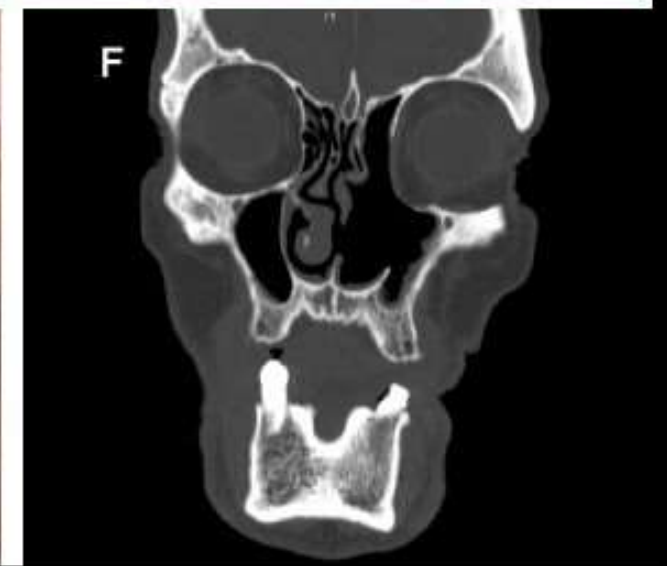
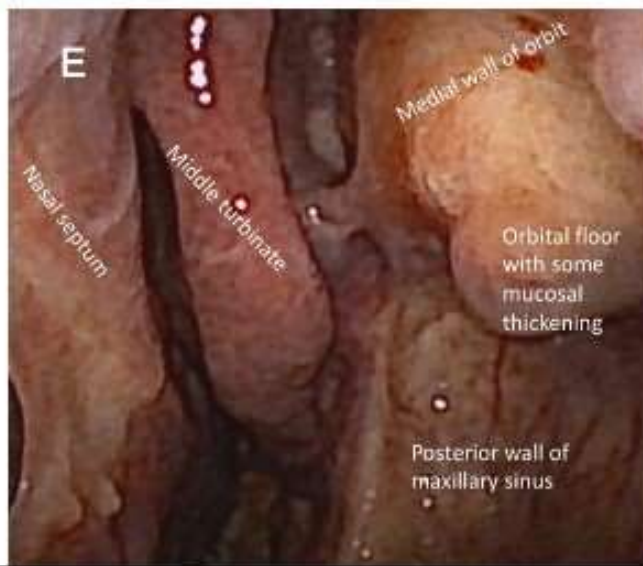
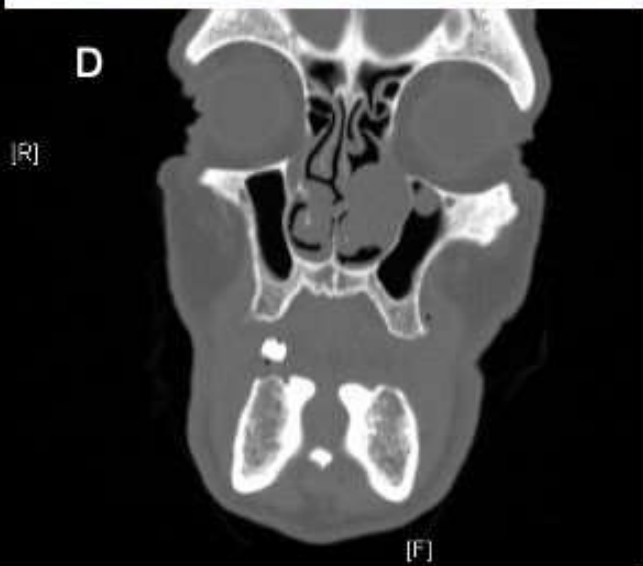
Radiation







Cases

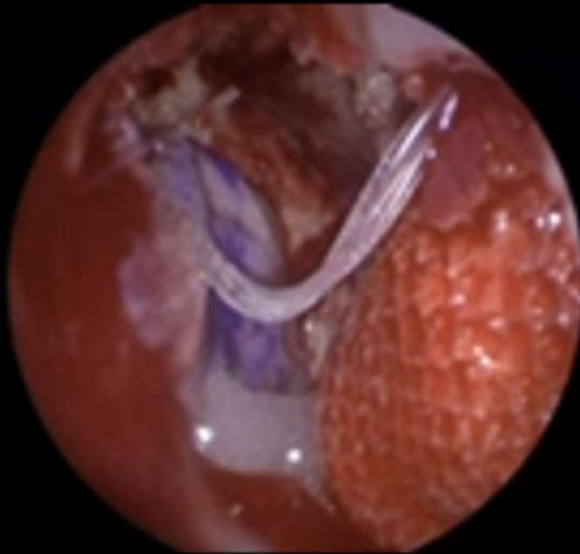




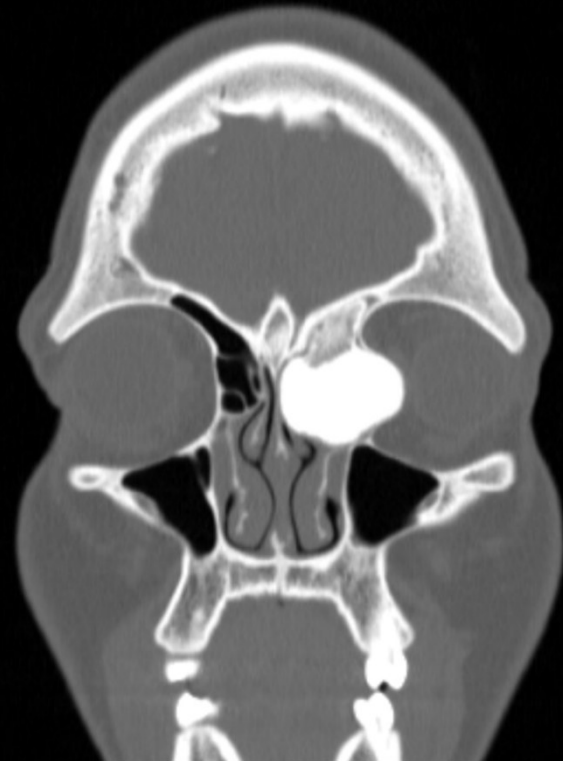
Pre



Post 6 months



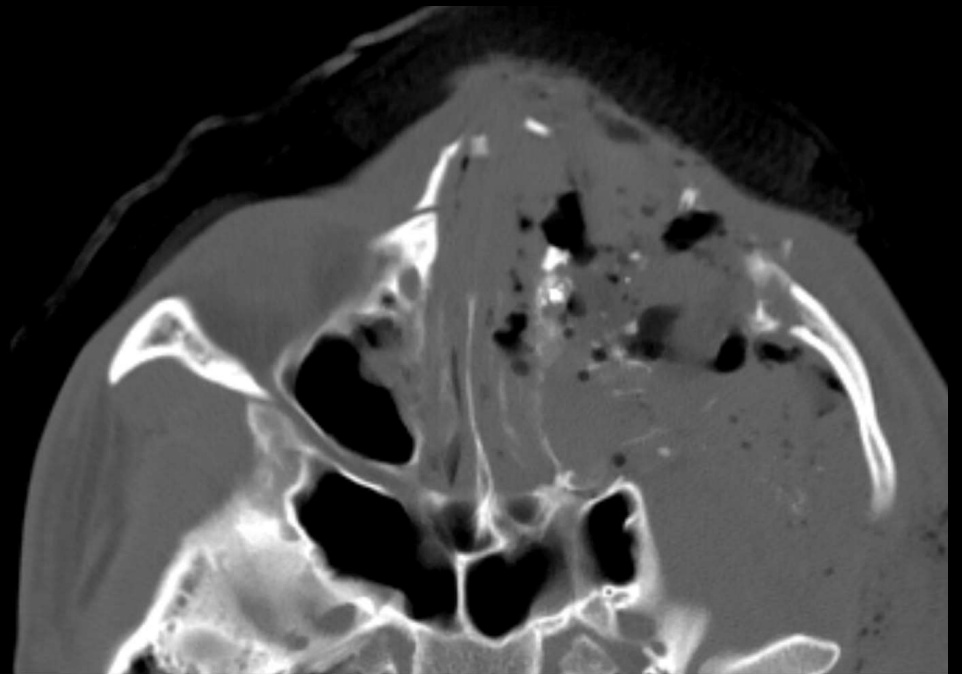
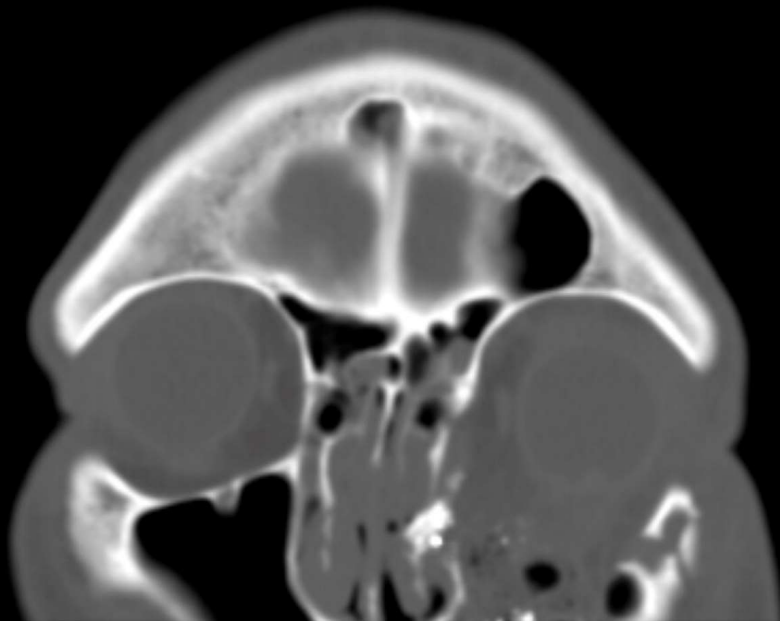
Endoview

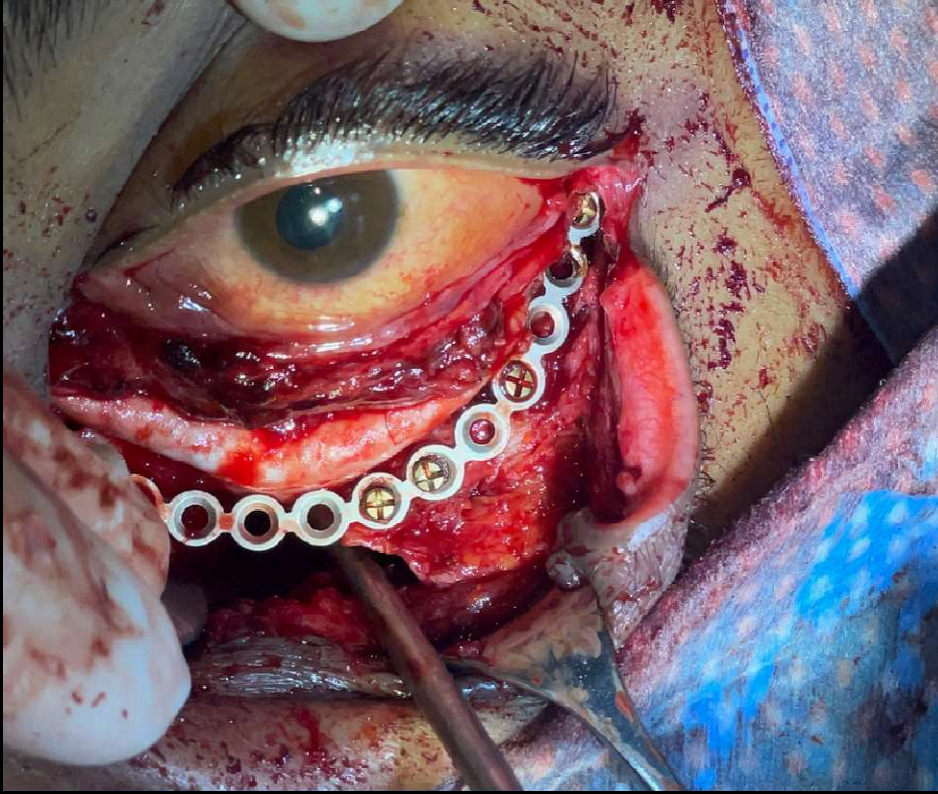


CT Scan



Pre

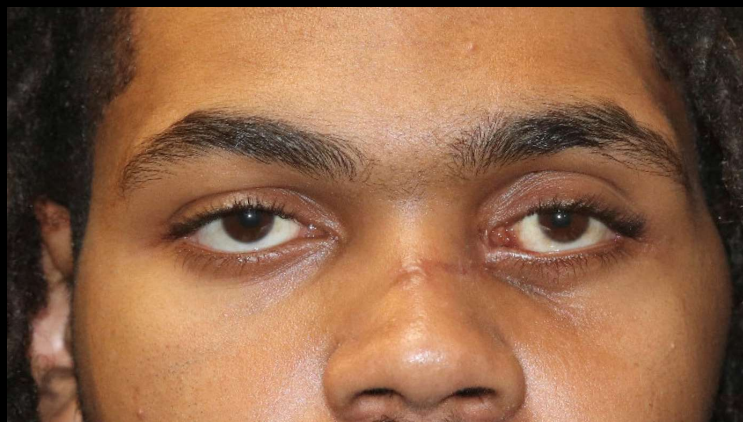




Post 3 months

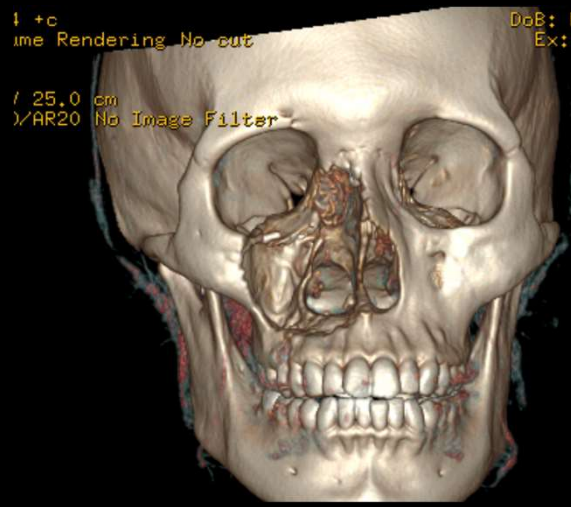


Post 6 months

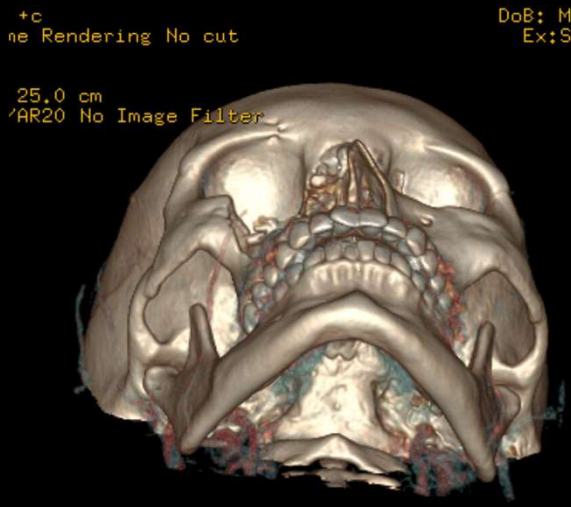




Pre



DoB: May 12 1997
Ex: Sep 02 2023



DoB: May 12 1
Ex: Sep 02 :



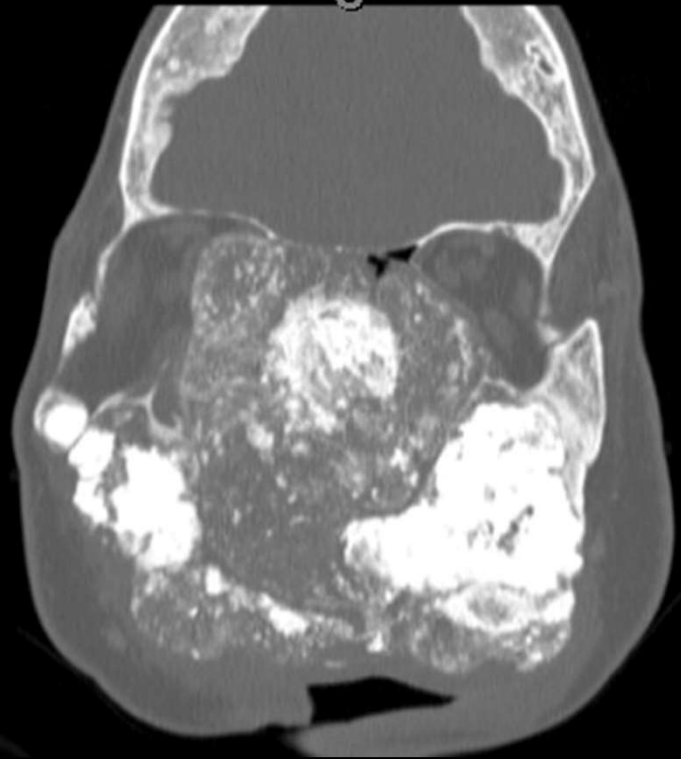
DHF



Post 8 weeks



Post 4 months (1 month post radiation)



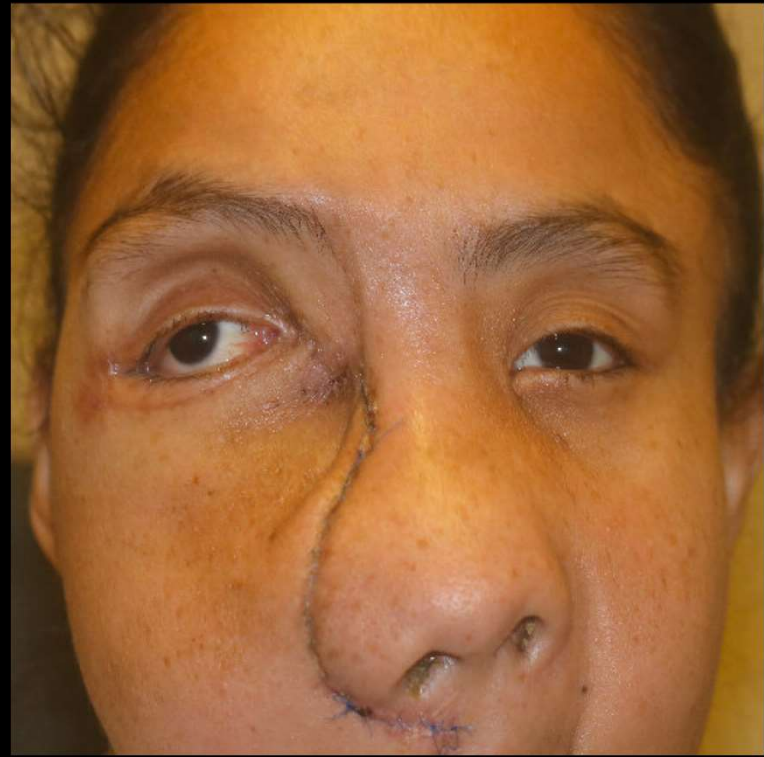
Pre



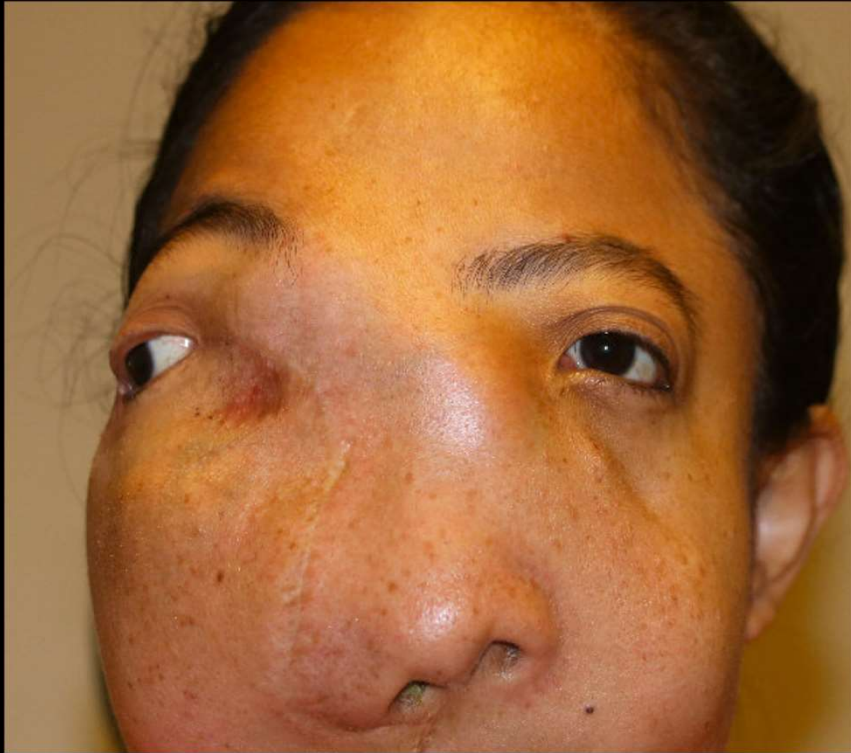
Resection: OR



Intraoperative post reconstruction



Post-1 month



pre



Post-4 months

Consider

- Barriers necessary
 - Rigid versus soft support
 - What environment will reconstruction be in
- Space necessary
 - Optic nerve function
- Decrease morbidity from implant itself
 - Infection
 - Extrusion
 - migration

References

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- [Kurt Laedrach](#), M.D., D.M.D.,¹ [Anton Lukes](#), M.D.,² and [Joram Raveh](#), M.D., D.M.D.¹ Reconstruction of Skull Base and Fronto-orbital Defects following Tumor Resection. [Skull Base](#). 2007 Jan; 17(1): 59–72.
- [Rohan Verma](#)¹, [Allison J Chen](#)², [Jennifer Murdock](#)¹, [Mathew Geltzeiler](#)³, [Mark K Wax](#)³, [Roger A Dailey](#)¹, [John D Ng](#)^{1,3} **Acellular cadaveric dermal matrix grafts for orbital wall reconstruction in patients with sinonasal malignancies.** Orbit. 2023 Feb;42(1):25-29.
- Steinberger, Elise E.; Vogt, Ashtyn Z.; Tan, Jeremy F. [Skin and Bone: Intact Fish Skin to Reconstruct Traumatic Orbital Floor and Wall Defects.](#) *Ophthalmic Plastic and Reconstructive Surgery* ():10.1097/IOP.0000000000002594, January 17, 2024. | DOI: 10.1097/IOP.0000000000002594

Thank You



Jeremy-tan@dmei.org

405-271-1096

Dean McGee Eye Institute
Oklahoma City, OK
USA

