433 Teams

OPHTHALMOLOGY

9

Lids, Lacrimal and Orbit Disorders

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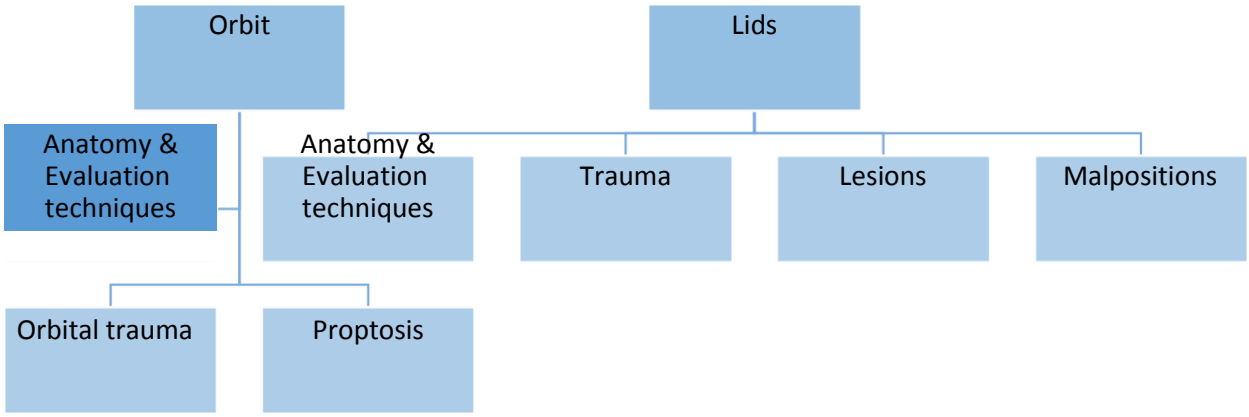
Objectives:

1. **Orbit**: Anatomy and evaluation techniques – Orbital trauma–Proptosis

2. **Lids**: Anatomy and evaluation techniques –Trauma –Lesions–Malpositions



Anatomy of the bony orbit:

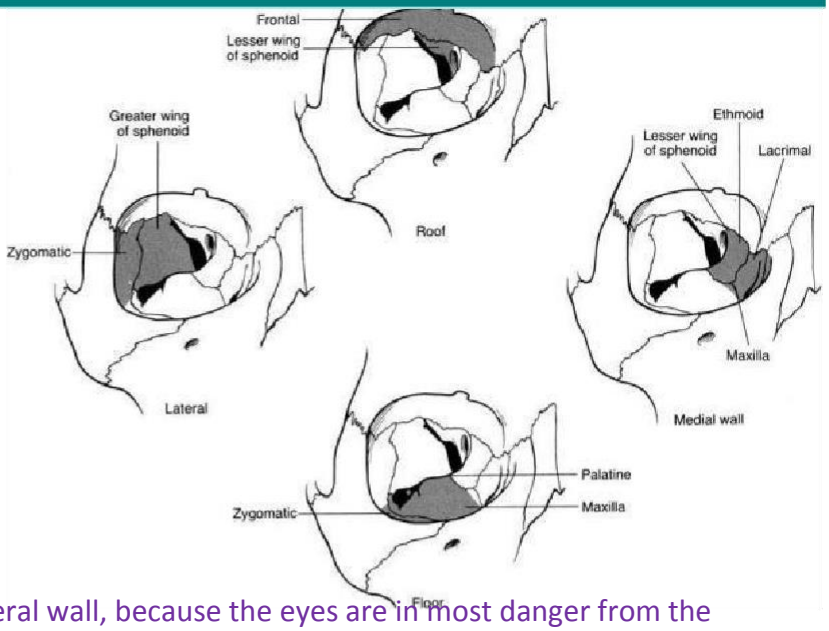
The bony orbit is formed of:

Lateral wall: zygomatic and sphenoidal bone

The roof: frontal and sphenoidal bones

Medial wall: (the thinnest wall) maxillary bone, lacrimal bone, ethmoidal and sphenoidal bones.

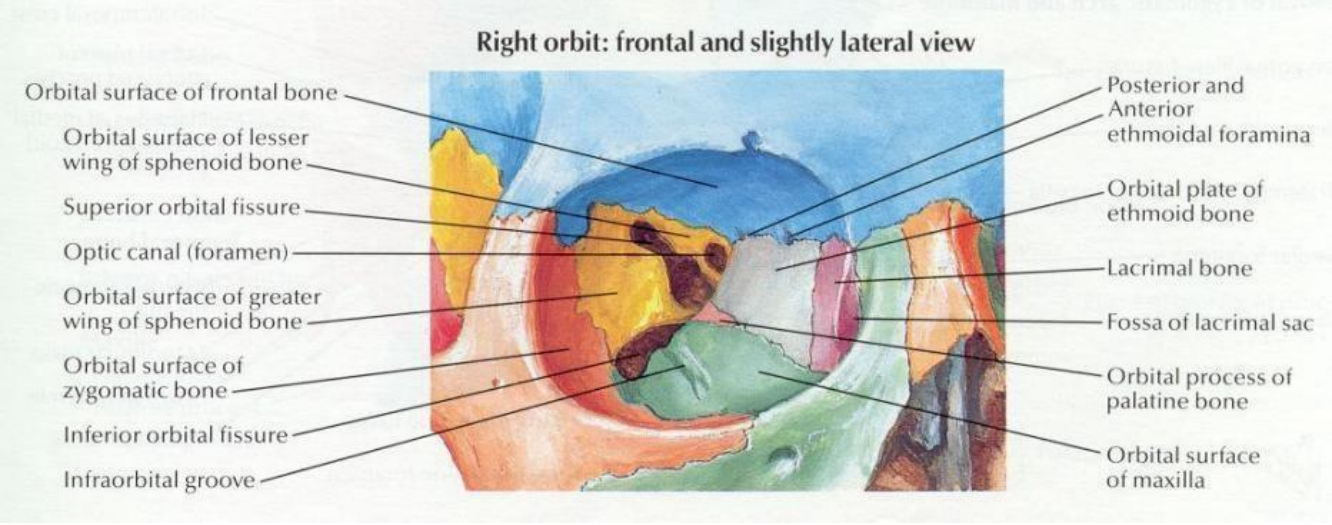
The floor: maxillary and zygomatic bones and the far back is made from the palatine bone.



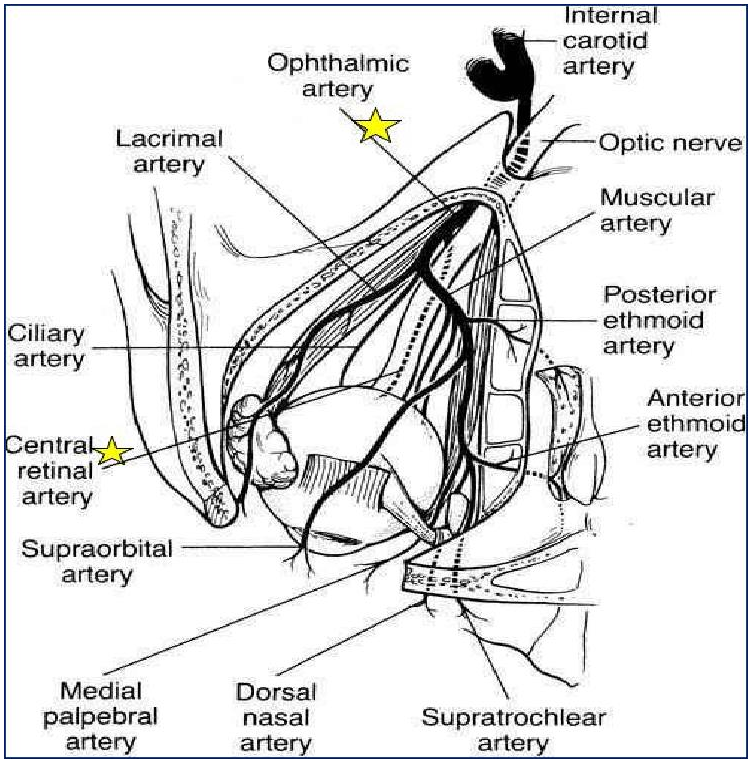
Which one of these is the strongest? The lateral wall, because the eyes are in most danger from the lateral side.

Which one is the weakest? The floor

Ethmoidal bone is also known as: Lamina Papyracea (paper like) very thin.



Blood supply:



The blood supply of the orbit is coming from the ophthalmic artery: first branch of the internal carotid artery.

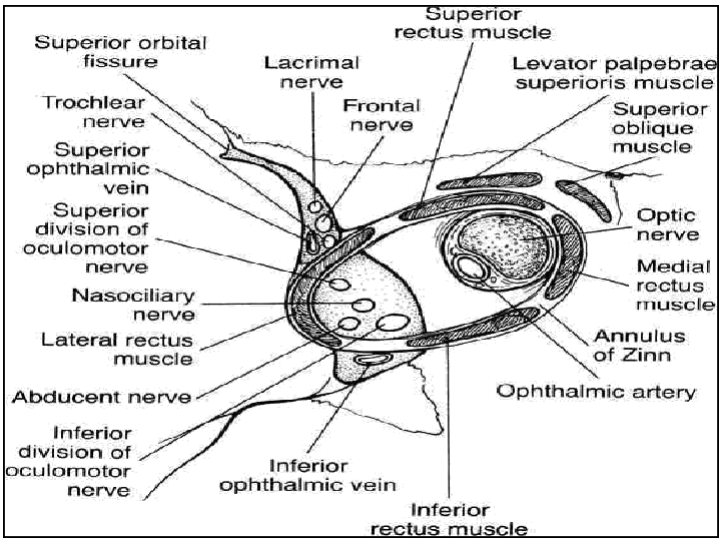
It gets inside the orbit through **the optic canal.**

Central retinal artery is a branch of the ophthalmic artery. It is extremely important because if we cut it, it will lead to total blindness. (Because it has no collaterals). It passes through the optic nerve.

Annulus of Zinn:

Is a form of condensed fibrous tissue? It is the origin of all the recti muscles.

All the extraoccular muscles origin from the orbital Apex except the Inferior Oblique Muscle which originates behind the inferior orbital rim, near the nasolacrimal duct.



Superior orbital fissure:

A number of important anatomical structures pass through the fissure, and these can be damaged in orbital trauma, particularly blowout fractures. These structures are: can be remembered in this mnemonic: " **L**ive **F**rankly **T**o **S**ee **A**bsolutely **N**o **I**nsult"

Lacrimal Nerve: going to the Lacrimal Gland

Frontal Nerve: it is a sensory nerve. Its name will change to supra orbital nerve that supplies the entire skull to the bSo a patient with supra orbital nerve injury (or frontal nerve injury) will complain of numbness in this area.

Trochlear Nerve: supplies the superior oblique muscles. It is outside the annulus of zinn.

Superior Division of occulomotor: supplies the superior rectus and levator palpebrae

Abducent Nerve: supplies the lateral rectus.

Nasociliary Nerve: supplies the tip of the nose, ciliary muscles and the cornea

Inferior Division: supplies the medial and inferior rectus.

(**Hutchinson's Sign**: when the tip of the nose and the eyes are involved in herpetic infections). Relates to involvement of the tip of the nose from facial herpes zoster. It implies involvement of the nasal branch of the nasociliary nerve (branch of the ophthalmic division of the trigeminal nerve) and thus raises the specter of involvement of the eye.

Evaluation 7P's:

1- **P**ain

2- Proptosis

3- **P**rogression

4- **P**alpation

5- **P**ulsation

6- **P**eriorbital changes

7- **P**ast medical history

1.Pain

Infection

Inflammation
Hemorrhage

Malignant Lacrimal Gland Tumor

2.Progression:

If progression is Minutes to Hours:

- Hemorrhage (after trauma, spontaneous, after surgery of sinuses→→ injury to blood vessels)

- Orbital Emphysema (air around the eye due to fractures).

Why is it dangerous? The air inside the eye compresses the central retinal artery and optic nerve which will lead to retinal ischemia. Ask the patient not to blow the nose to prevent the orbital emphysema (so that the pressure won't increase in the sinuses and the air goes into the eyes and around them).

- Lymphagioma (abnormal lymphatic vessels that tend to have bleeding inside them)
- Varices (upon valsava)

Eyelids Anatomy:

Skin => orbicularis muscle => Orbital Septum: a dense fibrous tissue from the orbital rim going all the way to the tarsals => orbital fat => pre oppneurotic fat => Aponeurosis => muller muscle => conjunctiva.

Meibomian glands: around 30 in the upper lid and 20 to 25 in the lower lid they secrete an oily substance that prevents evaporation of the eye's tears. Dysfunctional meibomian glands often cause dry eyes, one of the more common eye conditions. They may also contribute to blepharitis.

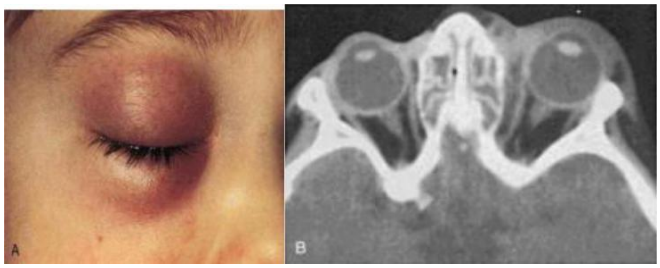
Anything behind the orbital septum is orbital.
Anything anterior to the septum is extraorbital = preseptal

Infections:

Preseptal Cellulitis (extraorbital): A preseptal cellulitis involves lid structures alone. *(from lecture notes)*

Vision, motility, pupils, VF, disc are within normal limit.
Globe itself is not proptotic. They are usually healthy people with normal vital signs.
Causes: insect bites, sinuses or infection in the sweat glands or meibomian glands, or abrasions.
Treatment: oral antibiotics and send them home. (expect children under 1 year we admitted them because they can't monitor them self properly)
Treat properly else can develop orbital abscess, brain abscess, cavernous sinus thrombosis and can die.

Orbital Cellulitis:



90% secondary to sinus disease (most of the time ethmoidal sinus)

They look sick, and may have a fever.

Vision, motility, and pupils are usually not normal, and proptosis. If they have lid swelling and redness suspect orbital cellulitis.

High risk of morbidity and mortality.

- Orbital abscess
- Brain abscess
- Cavernous Sinus Thrombosis

Treatment: They need to be admitted for **IV antibiotics** and close observation. If they have an abscess collection => they need surgery (incision and drainage)

Cellulitis triad: redness, hotness, and tenderness

Allergic Eyelid Swelling:

Make sure to take proper history to differentiate between allergy and infections.

Allergic swellings are very common, mainly due to insect bites.

History: The patient usually wakes up with it.

Hemangiomas:

1. Capillary hemangioma: usually in children.

Main indication of treatment is to preserve vision and prevent amblyopia

(For vision maturation, the eye input should be intact). The younger the child the more critical the case is and the more important the treatment is.

How to treat?

- Propranolol (beta blocker) it will shrink it.
- If no response: Steroids either Injected into the lesion or systemic
- surgery.

2. Cavernous hemangioma: In adults usually



Progression from Months to Years:

- Dermoidcysts
- Benign mixed tumors
- Neurogenictumors
- Cavernous hemangioma
- Lymphoma
- Fibrous histiocytoma
- Osteoma
- Lipoma
- Glioma
- Meningioma

3.Proptosis:

Unilateral proptosis: indicates a space occupying lesion e.g. Tumors
Bilateral proptosis: indicates an inflammatory condition or systemic disease.
Grave's is the most common cause of unilateral and bilateral proptosis.

It could be:

Inflammatory:

--- Thyroid disease –most common cause
--- Orbital pseudotumor
--- Wegener granulomatosis

Infection: (orbital abscess, cellulitis)

Vascular:

- Orbital hemorrhage
- Lymphangioma(sudden)
- C-C fistula
- Orbital varices-proptosis with Valsalva

Tumor

- Benign: cavernous hemangioma, lymphangioma
- Malignant: adenoid cystic carcinoma, lymphoma, glioma
- Contiguous: sinus, intracranial nasopharynx, skin
- Metastatic -lymphoma, leukemia, neuroblastoma
- Rhabdomyosarcoma

Inflammation:

1- Graves' Disease

– Most common cause of unilateral or bilateral proptosis.

– May occur with any thyroid status (hyperthyroid or hyopthryroid but mostly with hyperthyroidism)

– The eye disease is not controlled by thyroid ablation. (Why?)

(There are thyroid antigens that attract the antibodies. Also, there are similar antigens around the eye. If we remove the thyroid gland, we are removing the antigens of the thyroid gland, but there is still antibodies circulating around the eye. So they will still attack the eye.)

Grave's disease is in 3 places: Eyes, thyroid and pretibial (pretebial myxoedema).

What are the signs of thyroid eye disease?

1- Exopthalmus (exopthalmus is proptosis but it's a specific term used only in Grave's)
2- Lid lag
3- Lid retraction
4- Diplopia and strabismus because the optic nerve is compressed due to extraocular muscle enlargement
5- Decrease in vision due to optic nerve compression and dryness of the eye because it's bulging and not closing well which can also lead to **Exposure keratopathy**
6- Echymosis and lid swelling

The main complain of these patients is cosmetic.

Treatment options

--- Steroids.
--- Radiation.
--- optic nerve decompression.

2- Idiopathic Orbital Inflammation

--- orbital pseudotumor
--- myositis
--- prompt response to steroids
--- OU or systemic –> think vasculitis (*except in kids)

3- Sarcoidosis

--- lacrimal gland

4- Vasculitis

--- GCA, PAN, SLE
--- Wegener's granulomatosis

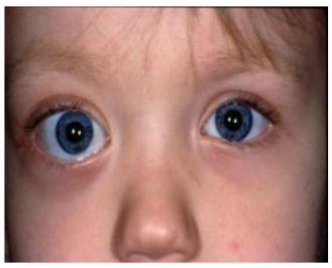
Lymphoproliferative Disorders

* **Lymphoid hyperplasia and lymphoma (the most common orbital tumors).**
–20% of all orbital mass lesions
–salmon patch appearance
–molds to orbital structures
–50% arise in lacrimal fossa
–17% bilateral
Diagnosis: clinical suspicion+ histopathology

***Plasma cell tumors**

***Histiocytic disorders**
–macrophage based d/o

Proptosis: Axial, non axial, Pulsital



Exophthalmometer is an instrument used for measuring the degree of forward displacement of the eye in exophthalmos. A difference greater than 2 mm between the eyes is significant.

Pseudoproptosis: false impression of proptosis could be due to enophthalmus of the other eye.

Most common cause of enophthalmus (sunken eyes) is orbital fractures.

It was also said to occur in Horner's syndrome, but this is really a pseudo – enophthalmos due to narrowing of the palpebral fissure. – From Lecture note

4.Palpation:

Dermoid cyst

These congenital lesions are caused by the continued growth of ectodermal tissue beneath the surface, which may present in the medial or lateral aspect of the superior orbit.

Excision is usually performed for cosmetic reasons and to avoid traumatic rupture, which may cause scarring. Some may be attached deeply by a stalk, and a CT scan may be necessary before surgery to identify this deeper connection. Dermoids may also occur at the limbus.

(From Lecture Notes)

5.Pulsation:

–With bruits

Cavernous carotid fistula Orbital arteriovenous fistula Dural arteriovenous fistula

–**Without bruits**

Meningoencephaloceles

Neurofibromatosis

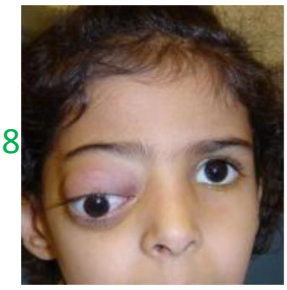
Orbital roof defect (condition after surgical removal of orbital roof, sphenoid wing dysplasia

6.Periorbital changes:

(this patient had a skin tumor that was removed from his cheeks. But it recurred with orbital extension)

Encephalocele

Rhabdomyosarcoma:



Most common primary orbital malignancy of childhood Average age: 7-8 (but can happen in more than 8 years and even adult)

Sudden onset and rapid evolution of unilateral proptosis

90% survival

It's not very common, but it is life threatening.

Diagnosis: biopsy

Treatment: Chemotherapy and radiation.

So whenever you have a child with sudden onset of unilateral proptosis, take it seriously! It could be **rhabdomyosarcoma.**

If you referred the child early (before metastasis happen), the survival is 90%.

7.Past medical history

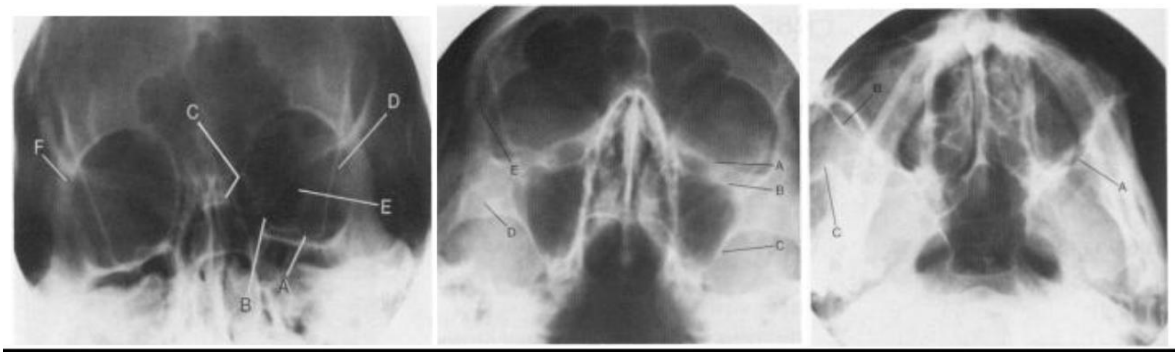
Imaging Options:

1- Plain films

(Normally we don't do it, unless there is a suspicion of foreign body.)

Quick, Rule out foreign bodies and Infrequently used

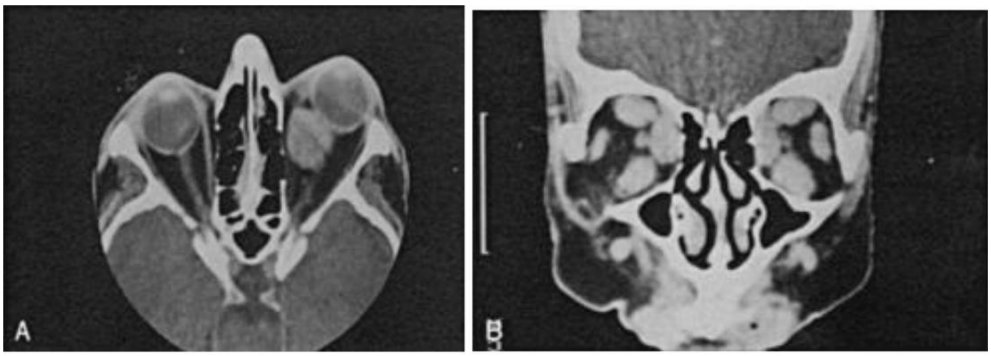
Caldwell's view **Waters' view** **Base view**



2- CT scan

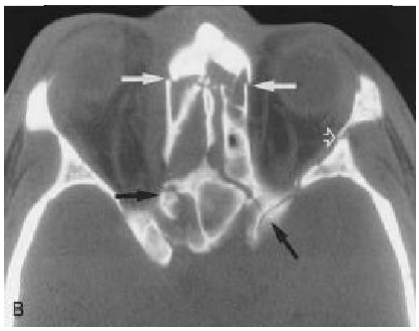
(Good initial if you don't know where's the problem, if you know we're dealing with a soft tissue problem do MRI)

(Most of the time we do it because it is good as it shows us the bone and soft tissue. "Now we think ten times before ordering a CT scan for a child, unless he really needs it due to radiation")



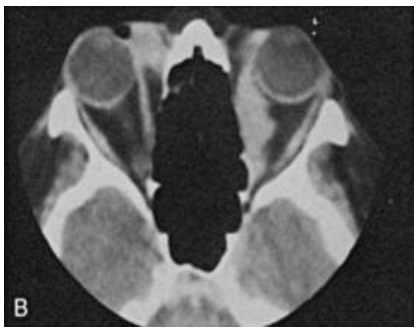
Axial cut. There is a mass behind the eye.

Strengths	Weakness	Protocols
spatial resolution bone - fractures - bone destruction - calcification quick-emergencies - trauma cheaper	radiation: 1-2 cGy soft tissue definition contrast iodinated - allergy may need MRI anyway - (not cheaper)	axial and coronal +/-contrast



Multiple fractures

enlarged multpile recti muscles.

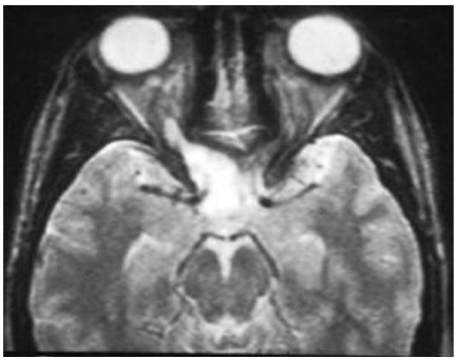


Unilateral enlargement of rectus muscle

3-MRI:

We use it when we are sure that we're dealing with soft tissue lesion.

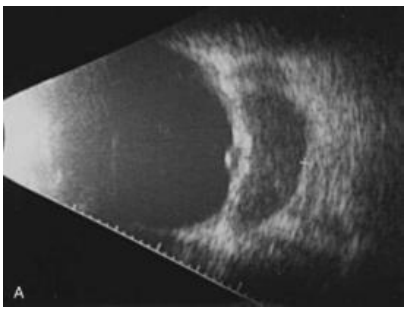
Strengths	**Weakness**	**Protocols**
–Tissue --- T1:anatomy --- T2:pathology No radiation	magnetic pacemakers, surgical clips claustrophobia	Axial/coronal/sagittal Gadolinium contrast - non-iodinated --- allergies RARE orbital lesions --- fat suppression



Fluids appear dark in T1, and white in T2.

The eye is filled with fluid like, so if the eyes are white => T2 If the eyes are black => T1
The picture on the left is T2 and on the right is T1.

Q: Name of study? T1 or T2?
Axial/coronal/sagittal ? Contrast ?Lesion ?



4- Ultrasound

It is not very good for deep orbital tissue. Dynamic
Less expensive +/-
Availability variable.

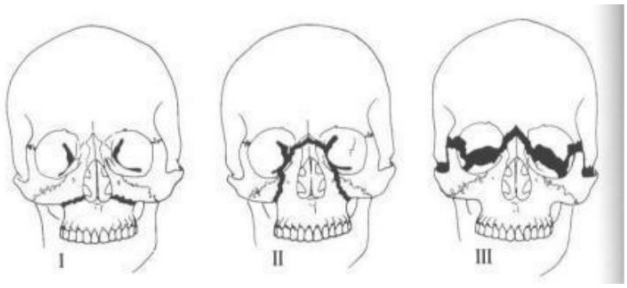
- to measure the length of the eyeball prior cataract surgry to estimate the power of the artificial lens that is to be implanted into the eye.

Facial trauma and fractures:

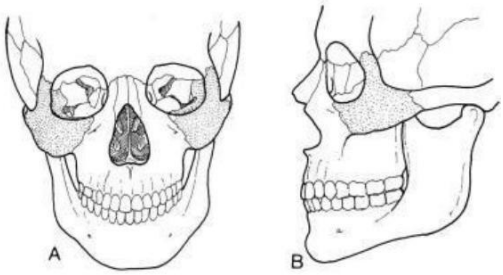
- ZMC fracture
- Wall and floor fractures
- medial wall-lamina papyracea
- orbital floor-blow out vs rim involvement

- Midfacial fractures
- lateral wall and orbital roof-less common
- Optic canal fractures
- traumatic optic neuropathy

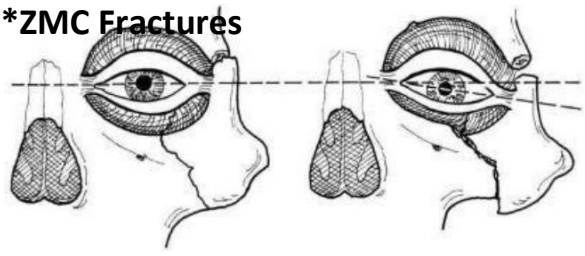
*LeForte Fractures

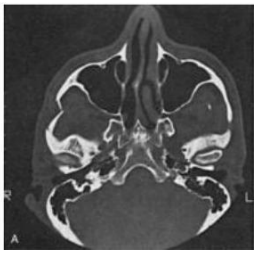


*Zygoma



*ZMC Fractures

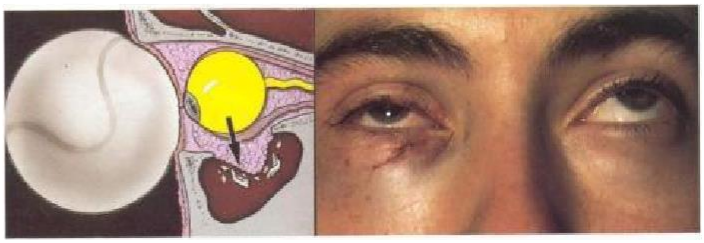




Floor Fractures:

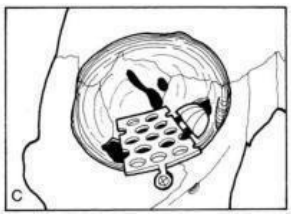
he can't look up and will have double vision.

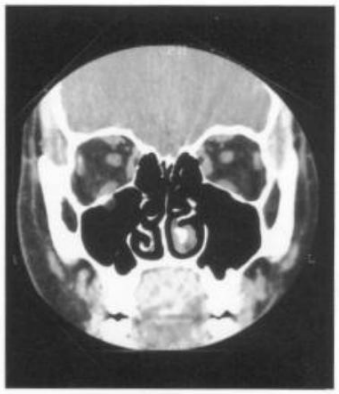
(**Blow out fracture**: a fracture of the walls or floor of the orbit. Some of the tissue will get inside and get entrapped. It is common among **children**).



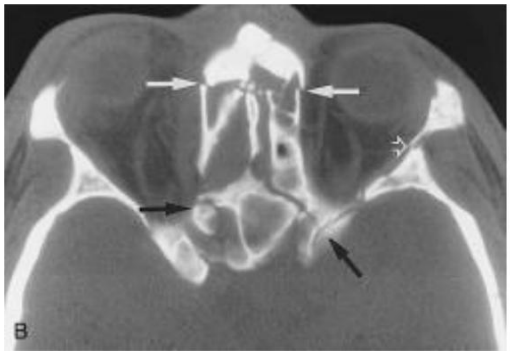
(So whenever you have a patient with orbital trauma, you need to look at the eyes motility and make sure the eye is not ruptured, to rule out this condition.)

We need to operate on him as soon as possible, because if the muscle is kept entrapped for a long time, it will lead to ischemia and fibrosis, which will be affected on the long term.





Optic Canal

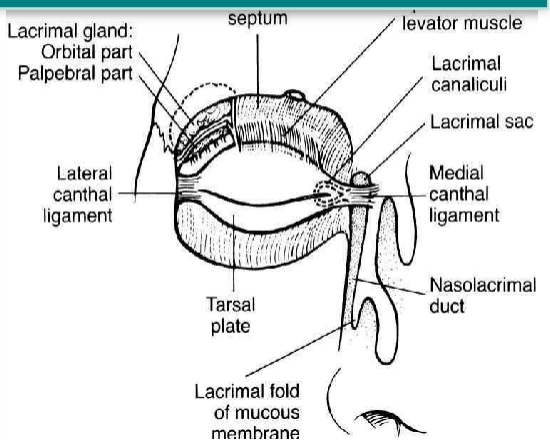


May be with or without displaced bony fragments

Lacrimal Glands:

Anterior superior lateral part of the orbit
It has two parts: orbital and palpebral part.

The nasolacrimal duct is the continuation of the lacrimal sac. It descends to open into the inferior nasal meatus, below the inferior turbinate.



They start in the upper and lower **punctums**, to the upper and lower **canaliculi**, **lacrimal sac** then **nasolacrimal duct.**

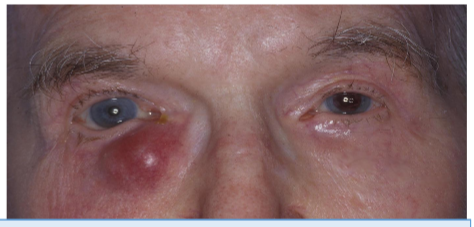
Normally the canalization of the nasolacrimal duct should be completed at birth. However, some children will have a delay of the canalization of the duct: **Congenital nasolacrimal duct obstruction (**They present with **tearing and discharge)**

Why do they have tearing?

The tears cannot pass through the lacrimal drainage system because of the obstruction, there is a membrane obstructing the system not allowing it to drain.

Why do they have discharge?

1. The tears will come and stagnate in the area of obstruction => which will give a good medium for infections. So they will present with discharge and infection.
2. The lacrimal sac is lined by mucus secreting cells, similar to the mucus secreting cells in the nasal mucosa. So in these children, it will drain back to the eye.



Fluid stagnation in nasolacrimal duct due to improper canalization, this stagnation causes it to be a good medium for infection

If a child comes with tearing and discharge we think of congenital nasolacrimal duct obstruction.
If a child comes only with tearing we think of: congenital abcess – congenital glaucoma – eye lashes are irritated.(anything that irritates the eye)

Patients who have nasolacrimal duct obstruction that is not treated may develop dacrocystitis.

Dacryocystitis is an infection of the lacrimal sac, secondary to obstruction of the nasolacrimal duct at the junction of lacrimal sac.

It causes pain, redness, and swelling over the inner aspect of the lower eyelid and epiphora (excessive watering of the eye).

How to examine the nasolacrimal ducts?

In adults: We pass a cannula all the way to the lacrimal sac, and then we inject the fluid.

In children: We put a flourescein dye (orange dye) then wait for 5 minutes. The dye should disappear from the eye.
However, if there was an obstruction, the dye will stagnate inside the eye.
(it won't help to differentiate between nasolacrimal duct obstruction or canalicular obstruction.)

How to treat it?

Usually we ask the family to wait until the age of 1 year + **massage** for the lacrimal sac. (Ask the mother to put the finger under the medial canthal ligament and push (this will compress the lacrimal sac because the lacrimal sac is behind the medial canthal sac).

When the pressure increases in the lacrimal sac, hopefully it will rupture the membrane. If it didn't improve in 1 year => we recommend **probing**.

A small probe is introduced through the upper or lower punctum based on the place of obstruction and is advanced to the lacrimal drainage system, until it resolves the obstruction. (Sometimes we put a stent, to prevent the membrane from reforming we keep it for a few months.)

Eyelids:

1-Eyelid Trauma:

Types:
– Blunt
– Sharp/penetrating

Classification:
– lid margin (the most important things to pay attention to in any eyelid trauma)
not involved
involved: **if involved it will have an abnormal alignment** causing corneal irritation therefore will need suturing.

--- Canthal tendon involved (if the canthal is cut the eyelid becomes not attached to the bone anymore, call ophthalmology: they attach the eyes to the bones

– canalicula involved*

Lid Laceration with Canalicular Involvement:

Before repair after repair

Lid margin spared:
Skin and orbicularis only –> skin sutures.

FAT protrusion= septum violated.
There is a very high chance the orbit has been jured.
–DO NOT suture the orbital septum.

Blepharitis

Inflammation of the eyelashes, it usually happens secondary to staph. Treatment: topical antibiotics and eyelid hygiene.
It is very difficult to eradicate.

Herpes Zoster Ophthalmicus

It is less common in our area.
Treat it with oral antiviral agents.

2.Lid Lesions:

Sty: (inflammation around the eye lashes, either from sweat glands or sebaceous glands.)

Treatment: Warm compressions with topical antibiotics.

(We give antibiotics but it can improve by itself.)

Chalazion: (granulomatous inflammatory lesion caused by obstruction

of meibomian glands, which leading to accumulation of the sebaceous secretion from the meibomian glands.)

Treatment: it will resolve by itself. But if it does not improve after 1 month, we drain it.

Xantholasma

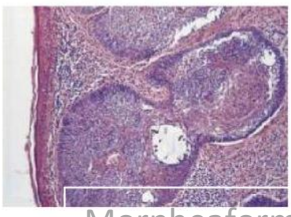
(You need to screen for **hyperlipidemia**)

Basal Cell: wasn't explained

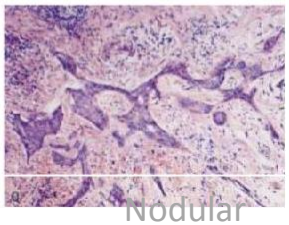
- 90-95% of malignant eyelid tumors
- Lower lid and medial canthal areas
- Nodular and morpheaform types
- Medial canthal lesions can be problematic
- 3% mortality

Squamous Cell:

- 40x less common than BCC
- More aggressive
- Most arise from pre
- Variable presentation



Morpheaform



Nodular

Sebaceous Adenocarcinoma:

- 2x more common in upper lid
- Multicentric
- Separate upper and lower lid lesions in 6-8%
- Pagetoid spread

3.Eyelid Malpositions

1. Ectropion
2. Entropion
3. Blepharoptosis
4. Retraction

1. Ectropion

Outward turning of lid margin

Types:

–Congenital

–Involutional aging is the most common cause of it

–Paralytic (in case of patients with facial palsy)

–Cicatricial (scarring)

–Mechanical

2. Entropion

Inversion of the lid margin

(Most common cause is trachoma)

What's the causative organism?

Chlamydia (bacteria) => its main difference than other types of bacteria is that it has no cell wall.

How does trachoma cause entropion?

Usually this is an active infection acquired during childhood. If it is not treating properly it will cause conjunctiva scarring. Whenever the conjunctiva is short, it will pull the lid margin toward the eye. It used to be an endemic infection, but now we rarely see it.

Types:

–Cicatricial

–Involutional

–Congenital

–Acute-spastic

Trichiasis

One single eyelash or two are misdirected toward the eye. The rest are ok. (If the whole lid margin is turning toward the eye, we call it: **entropion**)

3. Blepharoptosis

Drooping or inferior displacement of the upper lid

*** <u>Classification</u>:**

--- **Congenital** vs **acquired**

--- **Myogenic** (like abnormal levator muscle), **aponeurotic** (the tendon is stretched), **neurogenic** (from the 3rd nerve), **mechanical** (a mass in the eyelid), or **traumatic** (trauma to the muscle)

Evaluation

a) Myogenic ptosis

Congenital

–Dysgenesis of levator

Acquired

–Localized or diffuse disease

–Muscular dystrophy

–CPEO

–MG

–Oculopharyngeal dystrophy

This child has right congenital ptosis. He is lifting his chin up so he can see from both eyes. We can't leave him like this; we need to do surgery because he may develop neck problems.

Generally, in children, whenever the eyelid is blocking the eye --> we need to do surgery to prevent amblyopia.

In adults, we just fix it because patients want to see from both eyes, but it will not cause amblyopia.

b) Aponeurotic

--- Most common form of ptosis

(The muscle is normal but the tendon is stretched, usually happens with aging.) --- High lid crease with normal levator function

c) Neurogenic

Acquired and congenital forms

Acquired:

–3rd nerve palsy **

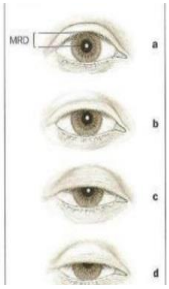
–Horner syndrome (ptosis, myosis, anhydrosis due to sympathetic chain lesion)

–Myasthenia gravis

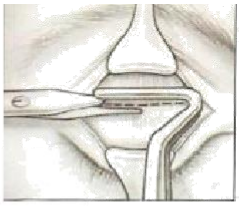
Levator Function (this is the way we evaluate the muscle) We ask the patient to look all the way down, and then we measure how much they go up. Normally it should be 15 cm and above, like in this picture.

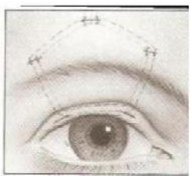
Treatment:

- Mild ptosis, good levator function: Mullerectomy
- Any ptosis, reasonable levator function: Levator resection
- Severe ptosis, poor levator function: Frontalis suspension



Mullerectomy





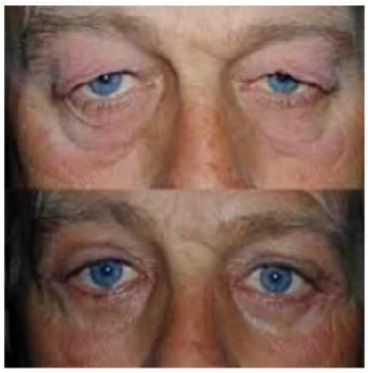
Dermatochalasis:

Dermatochalasis:

(psuedoptosis: excessive skin in the eyelid. But the eyelid position is normal)

This is a very common condition; we usually do surgery for it.

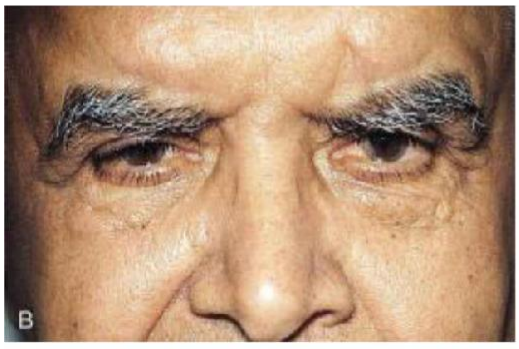
(Before and after surgery)



The procedure's name is **blepharoplasty**.

It is a very common cosmetic procedure

PreOp PostOp



Brow ptosis

This patient has a normal eyelid position. But the brow is ptotic due to bell's palsy. If bilateral brow ptosis: aging

Brow ptosis

Right brow ptosis, lid opening is ok, with normal lid margins.

Abnormal Eyelid Movements:

--- Blepharospasm
--- Hemifacial spasm
--- 7th nerve palsy

1. Blepharospasm:

(Suddenly and without control, the eye is closed like this)
Involuntary tonic, spasmodic contraction of orbicularis We don't know the cause.

o dermatochalasis-rubbing
o brow ptosis-frontalisspasm
o blepharoptosis_levatordehiscence
o ectropion/entropion
o dry eyes

Before diagnosing this condition, we have to rule out any eye irritation problems, like foreign body or lashes inside the eye or dryness. We need to treat all of this first.
If the patient still has the same problem => we label it as blepharospasm

2. Hemifacial Spasm

o Intermittent contractions of the entire side of face
o Present during sleep
o Compression of 7thnerve at the level of the brain stem
o MRI evaluation

We need to order MRI in these patients to rule out 7th nerve compression

There is a common normal condition called **myokymia**: When only one eyelid is twitching. It is normal and it does not indicate any pathological process.

If it involved both (Upper and lower eyelids) => you need to think of hemifacial spasm

3. 7th nerve palsy

Location of lesion:

Supranuclear, brain stem, peripheral

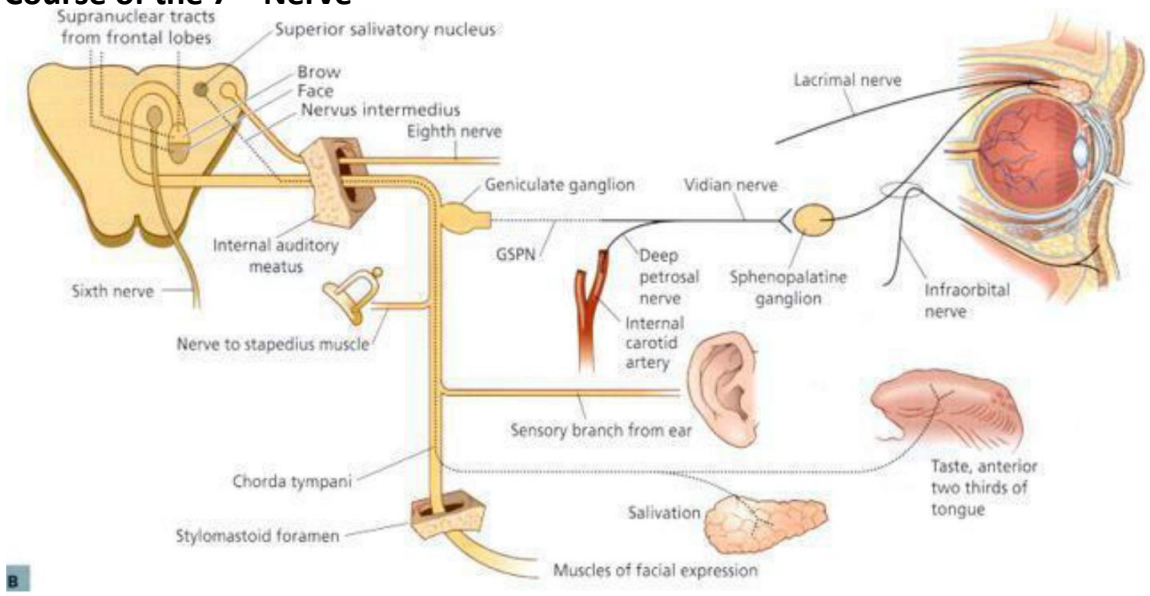
Cause of paralysis:

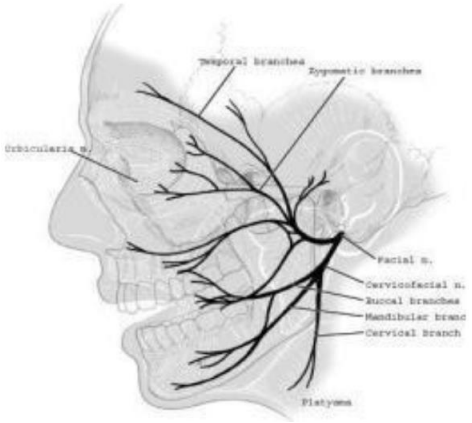
–Bell's – Infection – Infarct – Demyelination – Neoplasm – Trauma – Miscellaneous.

How do these patients present?

- **Inability to close the eye (Lagophthalmos)** (because orbicularis muscle gets paralyzed because its supplied by the faical nerve)
- **Ectropion**
- **Brow ptosis** (because the facial nerve supplies the frontalis muscle)
- **Tearing** (because the eye can not close well, so they cannot pump the tear from the eye to the nose.)
- **Exposure keratitis** (because the eye can not close well) so we need to lubricate the eyes

Course of the 7th Nerve





Botox in Ophthalmology

We use it to treat blepharospasm and hemifacial spasm. Also we use it to treat strabismus.

Botulinum Toxin

Clostridium botulinum

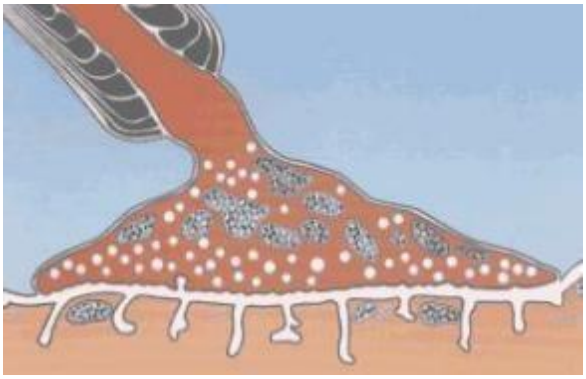
Neurotoxin types

A,B,C1,D,E,F,G

Botox = Botulinum Toxin A **(it's the most common type we use)**

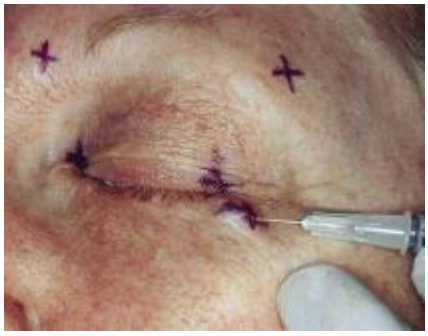
Blocks the release of acetylcholine Onset 3 days

Peak effect 1–2 weeks Duration 6–12 weeks



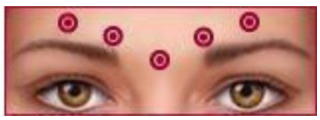
USES:

1) Blepharospasm



2) Strabismus (We inject the lateral rectus muscle to be weak. So the eye will be straight**.)**

3) Glabellar Botox



4) Botox for Crow's-Feet

Summary

--- **Central retinal artery** is a branch of the ophthalmic artery. It is extremely important because if we cut it, it will lead to total blindness.
--- **Superior orbital fissure:** A number of important anatomical structures pass through the fissure, and these can be damaged in orbital trauma, particularly blowout fractures.
--- Orbital Emphysema can lead to compression the central retinal artery and optic nerve which will lead to retinal ischemia.
--- **Cellulitis triad: redness, hotness, and tenderness.**
--- **Make sure to take proper history to differentiate between allergy and infections.**
--- Most common cause of unilateral or bilateral proptosis is Graves Disease.
--- Most common cause of enophthalmus (sunken eyes) is orbital fractures.
--- Whenever you have a child with sudden onset of unilateral proptosis, take it seriously! It could be **rhabdomyosarcoma.**

CASES:

1. A child presented with proptosis in the left eye. Brought by his family who noticed the eye is abnormal a week ago. They waited for few days but it didn't improve so they brought him to us.
What do you think happened?

Any child with proptosis => we need to think of **rhabdomyosarcoma**.

2. An 11-year-old boy came with pain and redness in the right eye for 3 days.
A. What do you think is going on with him?
B. What to do for this patient?

Answers:

A. (**Description** of the eye: red, swollen, proptosis)
Diagnosis: Orbital cellulitis due to ethmoidal sinutsitis.
B. Admit and give IV antibiotics and close observation.

Done By:

Othman Abid