ORBITAL DISEASES

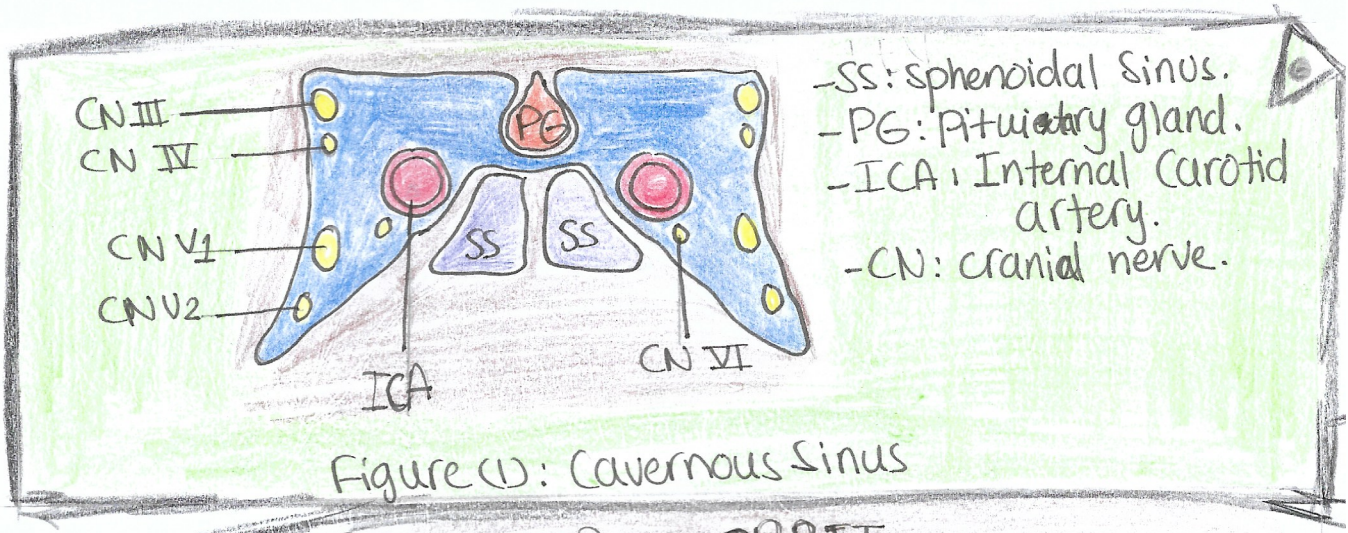
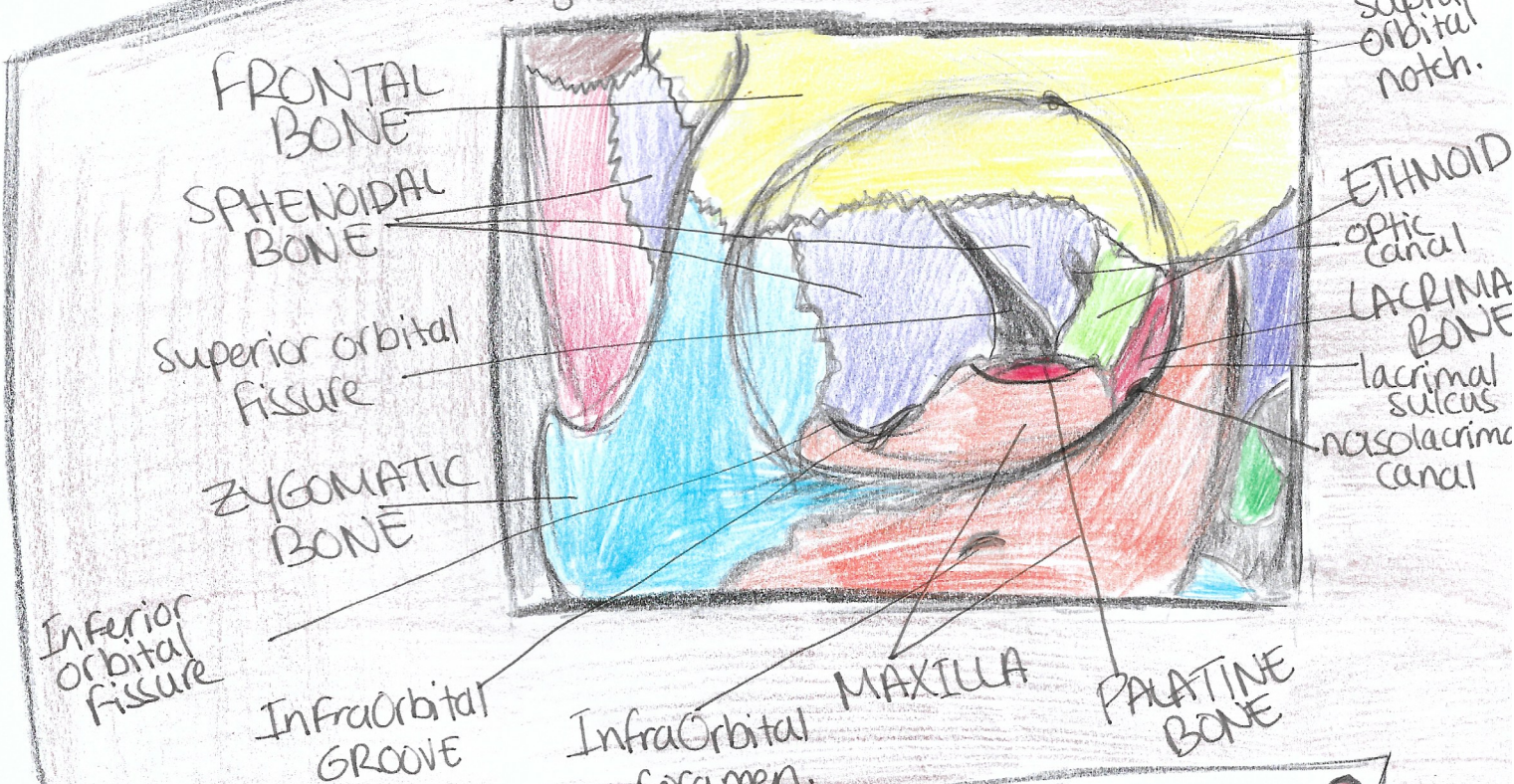


Figure (1): Cavernous Sinus

Figure (2): Bony ORBIT



BY:
SAJA SULEIMAN TARAWNEH
January 15th, 2020.

* ORBITAL DISEASES *

* Orbital infections and inflammations:
  - Orbital cellulitis
  - Idiopathic Orbital Inflammatory Disease(IOI
  - Dacryoadenitis
  - Orbital myositis

→ Orbital Cellulitis:
  - an Infection behind Orbital Septum
  - usually secondary to ethmoiditis
  - Presentation: Severe malaise, fever, and Orbital Signs

    * ORBITAL SIGNS:
      - Severe eyelids edema and redness.
      - proptosis; most frequently lateral & Down.
      - Painful opthalmoplegia
      - Optic nerve dysfunction if advanced

* COMPLICATIONS:
  - Raised IOP
  - Retinal vascular occlusion
  - Optic neuropathy

* Management:
  - Hospital Admission
  - Systemic Antibiotic therapy
  - Monitoring of optic nerve function
  * Indications for SURGERY:
    - Resistance to Antibiotics
    - Orbital or ~~subpe~~ Subperiosteal abscess
    - Optic neuropathy

→ Idiopathic Orbital Inflammatory Disease (IOID).
- non-neoplastic, non-infectious orbital lesion (pseudotumor)
- Involves any or all soft tissue components.
* Presentation: 20-50 years old with abrupt onset.
  - Usually Unilateral
  - Periorbital swelling and chemosis
  - Proptosis
  - Opthalmoplegia

→ Dacryoadenitis
- Occurs in 25% of patients with IOID.
- usually affects otherwise healthy Individuals
- No treatment required
* Presentation: Acute discomfort over lacrimal gland.

→ Orbital myositis:
- Subtype of (IOID).
- Involvement of one or more extraocular muscles
- Clinical course is usually short - treat with NSAIDs
* Presentation: Sudden Onset of pain on Ocular movement.

ORBITAL TUMORS*

1. Vascular tumors.
   - Capillary hemangioma.
   - Cavernous hemangioma.
2. Lacrimal gland tumors.
   - Pleomorphic Adenoma
   - Carcinoma
3. Neural tumors.
   - Optic nerve glioma
   - Optic nerve sheath meningioma
   - Sphenoidal ridge meningioma
4. Miscellaneous tumors:
   - lymphoma
   - Rhabdomyosarcoma
   - Metastases
   - Invasion from Sinuses.

→ Capillary Hemangioma:
- Most Common Orbital tumor in children.
- Presents - 30% at birth and 100% at 6months
- Most Commonly in Superior orbit.
- May enlarge on cough or straining
- Associated "Strawberry nevus" is common.

*TREATMENT:
- STEROID injections
- Systemic steroids
- local resection.

→ Cavernous Hemangioma:
- Most Common benign ~~a~~ Orbital tumor in Adults
- usually located just behind globe
- Female predonderance - 70%.
- Presents - 4th or 5th decade.

TREATMENT: surgical Excision.

⇒ Pleomorphic lacrimal gland tumor (Adeno.
- Presents - 4th or 5th Decade of Age.
- Painless and very slowely growing, smooth mass in lacrimal fossa.
- Inferonasal globe Displacement.
* TREATMENT: SURGICAL EXCISION.

⇒ Lacrimal Gland Carcinoma:
- Presents at 4th or 5th Decade.
- Very poor prognosis
- Painful, fast-growing mass in lacrimal fossa.
* Management: Biopsy + Radical surgery and radiotherapy.

⇒ Optic Nerve Glioma.
- Typically affects young girls.
- Associated with neurofibromatosis I.
- Presents at end of first Decade.
* TREATMENT:
- Observation
- Excision
- Radiotherapy

⇒ Optic Nerve Sheath Meningioma.
- Typically affects middle-aged women.
* Rx: Observation - slow growing tumors.
- Excision.
- Radiotherapy.

⇒ lymphoma.
- Presents at 6th - 8th Decade.
- Affects any part of Orbit and may be Bilateral
- Anterior lesions are rubbery and May be confined to lacrimal gland.
* Rx: Radio- and Chemotherapy.

- Rhabdomyosarcoma.
  - most common primary childhood orbital malignancy
  - Rapid onset in first Decade.
  - May involve any part of Orbit.
  - Palpable mass & proptosis.

* Rx: * Radiotherapy & chemotherapy
  - Exenteration for Radio-resistant or recurrant tumors.

→ ADULT metastatic tumors.
- Common primary sites:
  Breast, lung, Prostate, Bronchus, melanoma, Kidney.

→ Orbital invasion by Sinuse tumor.
- Maxillary CA: upward Globe Displacement with epiphora.
- Ethmoidal CA: lateral globe Displacement.

→ Childhood metastatic tumors:
- Neuroblastoma: presents in early childhood. Maybe bilateral, & Involves superior orbit.
- chloroma.
  - present aboutage of 7.
  - Rapid onset proptosis.
  - Full-blown-luekemia.

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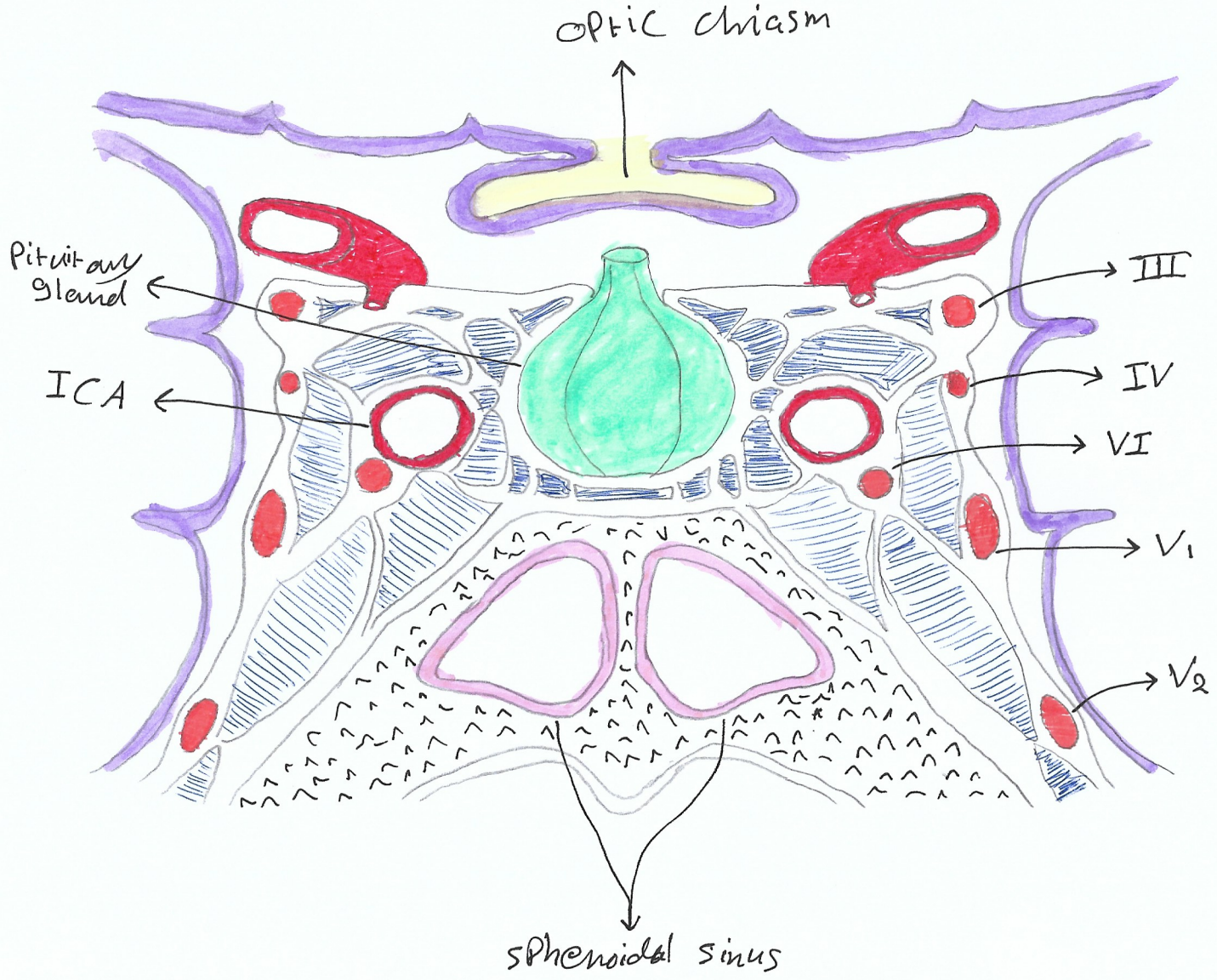
January, 15th 2020


optic chiasm
Pituitary gland
ICA
III
IV
VI
V1
V2
sphenoidal sinus

عبدالرحمن هند الوردات

Part 1 :- orbital anatomy and diseases slide 2

* Eye - Bones of the Right orbit :-

- Greater & lesser wings of sphenoide
- orbital fissures
  - superior to middle cranial fossa.
  - inferior to pterygopalatine fossa.
- infra orbital groove & foramina.
- supra - orbital notch.
- anterior and posterior ethmoidal foramen.
- nasal bone
- lacrimal fossa between these two
  - Posterior lacrimal crest on lacrim
  - anterior lacrimal crest on front Process of Maxilla.

- Terminology :- slide 6

- Proptosis
- Dystopia

- Pathology :- Graves disease. slide 7

- TSH antibody mimic action of TSH ⟹ increased T_3, T_4

- Thyroid eye disease :- slide 8

1. soft tissue involvement ⟹
   - * periorbital & lid swelling
   - * Conjunctival hyperaemia
   - * chemosis
   - * superior limb Kerato conjunctivit
2. Eyelid retraction.
3. Proptosis
4. optic neuropathy
5. Restrictive Myopathy.

- Signs of Grave's disease :-

1- Signs of eyelid retraction ((occure in about 50%))
* Bilateral lid retraction - no associated proptosis.
* Bilateral lid retraction - bilateral proptosis.
* Unilateral lid retraction - unilateral proptosis.
* Lidlage in downgaze.

2. Proptosis ((occure in about 30%)) :-
* uninFluenced by treatment of hyperthyroidism.
* Axial and permenant in about 70%
* May be associated with. coroidal folds.
——> treatement options :- - systemic steroid
- Radio therapy.
- surgical decompression.

3- Optic nuropathy ((occures in about 5%)) :-
* early defective color vision.
* usually normal disk apperance
* often occurs in absense of significant Proptosis.

4- Restrictive myopathy. ((occures in about 40%)).
* Due to fibrotic contracture
1- Elevated defect - Most common.
2- Depression defect - un common.
3- Abduction defect - less common.
4- Adduction defect - rare.

Vascular orbital disorder :-

1- Orbital venous anomalie (varices) ... isolated & combined.
2- Carotid - cavernous fistula
   * direct
   * indirect.

- orbital venous anomaly (varices)

- congenital enlargement of pre-existing venous channels.
- usually unilateral
- may be bleed or become thrombosed.

- isolated orbital varices :-

- intermittent Proptosis.
- Non-pulsatile, without brait.
- Precipitated or accentuated by valsalva Manoever.

- combined orbital & external varices :-

- conjunctival varices
- eyelid varices.
- precipitated or accentuated by valsalva Manoever.

* Direct carotid - cavernous fistula :-

- defect in intracavernous part of ICA
- rapid flow shunt.
- causes :-
  - head trauma - Most common.
  - spontaneous rupture in HTN female.

- Sign and symptoms :-

Ptosis - conjunctival ingiction - ophthalamoplegia - raise IOP. retinal venous congestion and Hge - Pulsatile ptosis. abolished by ipsilateral carotid compression.

* Types

Type A	Type B
between intra cavernous internal carotid artery & cavernous sinus.	between meningial branch of internal carotid & cavernous.

- Indirect carotid-cavernous fistula.

-indirect communication between meningial branches of internal & external carotid & cavernous sinus. Slow flow shunt.

→ causes :-

* congenital malformation.
* spontaneous rupture.

- Signl and symptoms :-

Dilated episcleral vessles. - raised IOP - with wild Pulsation - occa ophthalamoplesta - mild ptosis.

Dana hikmat

Date No.

orbit

Graves disease:

TSH Antibody mimics action of TSH ⟶ increase T3 + T4

Thyroid eye disease:

1. Soft tissue involvement ⟶ Periorbital and lid swelling
   conJunctival hyperaemia
   Chemosis
   Superior limbic keratoconJunctivitis
2. Eyelid retraction
3. proptosis
4. optic neuropathy
5. Restrictive Myopathy

Proptosis:

occurs in about 30%
uninfluenced by treatement of hyperthyroidism
Treatement option: Systemic Steroid
Radiotherapy
Surgical decompression

optic neuropathy:

occurs in about 5%
early defective color vision
usually normal disc appearance.

Restrictive myopathy

occurs in abart 40%
due to fibrotic contracture

Vascular orbital disease :

1. orbital venous anomalies → 1. Isolated orbital varices
   2. Combined orbital and external varices
2. Carotid - cavernous fistula → 1. Direct
   2. Indirect

Isolated orbital varices : Intermittent proptosis

Direct Carotid - cavernous fistula:

defect in intra cavernous part of Internal carotid

Rabid flow Shunt

Causes : 1. head Trauma - Most common
2. Spontaneous rupture - In hypertensive female

Types : Type A ⇒ between the Intracavernous Internal carotid artry and Cavernous Sinus

Type B ⇒ between meningeal branch of the Internal carotid artry and Cavernous Sinus

Indirect carotid - cavernous fistula (dural Shunt)

Indirect communication between meningeal branch of Internal or external Carotid and Cavernous Sinus . Slow flow shunt.

Causes : 1. Congenital Malformation
2. Spontaneous rupture

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orbital infection

1. orbital Cellulitis
2. IOID Idiopathic orbital inflammatory disease
3. Dacryoadenitis
4. orbital Mysitis

Orbital Cellulitis

Infection behind orbital Septum

Usually 2ry to ethmoiditis

Presentation – Sever Malaise
Fever
orbital sign : Sever eyelid edema and redness
Proptosis : most Frequantly lateral down
Painful opthalmoplegia
optic nerve dysfunction

Complication of orbital Cellulitis :

1. Raised Intraocular pressure
2. Retinal vascular occlusion
3. optic neuropathy

Management of orbital Cellulitis :-

1. hospital Admission
2. Systemic Antibiotic Therapy
3. Monitor of optic nerve function
4. Indication for Surgery :-
   - Resistant to Antibiotic
   - orbital or Subperiosteal Abcess
   - optic neuropathy

Idiopathic orbital inflammatory Disease (IOID)

- Non neoplastic, non infectious orbital lesion (pseudotumor)
- Involve any or all Soft tissue component
- Presentation – 20 to 50 years with Abrupt painful onset
- usually unilateral
- periorbital swelling and chemosis.
- Proptosis
- Ophthalmoplegia

Clinical Course and Treatement of IOID :

1. early Spontaneous remission without sequelea.
   Treatement - nil
2. Prolong Intermittent activity with eventual remission
   Treatement option - Steroid, radiotherapy or Cytotoxic.
3. Sever Prolong activity causing a "Frozen orbit"

Dacryoadenitis :

occur In 25% of patient with IOID
usually affect otherwise healthy Individual - no treatement required
presentation - acute discomfort over lacrimal Gland

orbital myositis :

Subtype of IOID
Involvement of one or More extraocular muscle
Clinical Course is usually Short - treat with NSAID
presentation - Sudden onset of Pain on occlar Navement

إسلام نواف الزيادنة

* orbital infection and inflammation

1- orbital cellulitis
2- Idiopathic orbital inflammatory disease
3- Dacro adenitis
4- orbital myocitis

① orbital cellulitis :-

- infection behind orbital septum.
- usually secondary to ethmoiditis
- presentation → severe malise, fever and
  orbital sign → ① eyelid oedema, redness
  ② proptosis
  ③ opthalmoplagia "painful"
  ④ optic Nerve dysfunction

→ complication

① ↑ intracranial pressure
② Retinal vascular occlusion
③ optic Neuropathy
④ orbital or sub periorbital Abcess.
⑤ meningitis
⑥ cavarnous sinus

→ management

① hospital Admission.
② systemic antibiotic.
③ monitoring of optic N.
④ indication for surgery → [1] resistant to antibiotic.
[2] orbital / subperiorbital abcess.
[3] optic Neuropathy.

② idiopathic orbital inflammatory D.

- Non neoplastic , Non infectious orbital lesion (psudotumour)
- involve any / All of tissue component
- presentation 20-50y with abrupt onset
  1. usually unilateral .
  2. periorbital swelling and chemosis .
  3. proptosis .
  4. opthalmoplagia .

→ clinical course and treatment

① early spontanous remession without sequle
treatment - Nill

② prolonged intermittent activity with eventual remission
steroid , radiotherapy

③ severe prolonged activity

③ Dacryoadenitis

- occure in 25%
- usually affected healthy individual
- presentation →
  1. reduction in tear secretion
  2. injection and tenderness of palpeble of lacremal gland

④ orbital myositis

- subtype of IOID
- clinical course short tt with NASID
- involve one or more extraocular muscle
  sudden onset of pain on occuler movement

Orbital tumours

① vascular tumour
- capillary hemangioma
- cavernous hemangioma

② Lacrimal gland tumour
- pleomorphic adenoma
- carcinoma

③ Neural tumour
- optic N glioma
- optic N sheeth meningioma
- sphenoidal ridge meningioma

④ miscellaneous tumour
- Lymphoma
- metastisis
- invasion from sinus
- Rhabdomyosarcoma

Capillary hemangioma

* most common in children
* 30% at birth and 100% at 6 month
* most commonly in superior Anterior orbit
* may enlargement.
* associated "strawberry"
* systemic association
  ① high output cardiac faluir
  ② muffic syndrome
  ③ tasbach morrite syndrome

→ treatment ① steroid ② systemic steroid
③ local resection

Cavernous hemangioma :-

- most common benign tumour in adult
- Located just behind globe
- more common in female 70%.
  - slowly progressive axial proptosis.
  - choroidal fold.

→ treatment :- surgical excision

Lacrimal gland tumour

most common → lymphoid tumor, → pseudotumour

① pleomorphic Lacrimal gland adenoma

- painless and slowly growing mass
- lacremal fossa
- inferonasal globe displacement
- trigeminal hypoesthesia in 25%.

→ management

biopsy, radical surgery, radiology

Orbital Tumor

* optic Nerve glioma
  - affect young girls
  - associated with NF-1
  - presentation ① gradual visual loss
    ② gradually progressive proptosis
    ③ optic Atrophy
  - Treatment
    - observation → good vision, good cosmesis
    - excision → poor vision, poor cosmesis
    - Radio therapy → intracranial extension

* optic Nerve Sheath meningeoma
  - middle aged women
  - gradual visual loss
  - opto ciliary Shunt in 30%
  - proptosis due to intraconal Spread
  - Treatment
    - observation → Slow growing tumor
    - excision → aggressive Tumor poor vision
    - Radiotherapy → slow growing tumor ow good prog

* lymphoma
  - affect any part of orbit
  - Anterior lesion are rubbery
  - Confined to lacrimal gland
  - Treatment Radio therapy
    Chemo therapy

* Rhabdomyosarcome
  - most Common primary malignyy in Childhood
  - palpable mass and ptosis in 30%
  - treatment — radiotherapy and Chemotherapy
    — exénteration for radior resistent

* Adult melanotic Tumor
  - Common primary Site → bast prostat
  - Similar to orbital pseudo tumor
  - Enophthalmos with Schirrous Tumor
  - Anterior obit mass

* Orbital Invasion by sinus Tumor
  maxillary Carcinoma
  → upward globe displacement

  Ethmoidal Carcinoma
  — lateral globe displacent

* Child hood melanotic Tumor
  Neuro blastoma
  - early Child hood
  - bilateral
  - involve superior orbit

  Chloroma
  - at about 7 years
  - rapid onset proptosis
  - systemic dissemintion to full blown leukemia