

ORBIT

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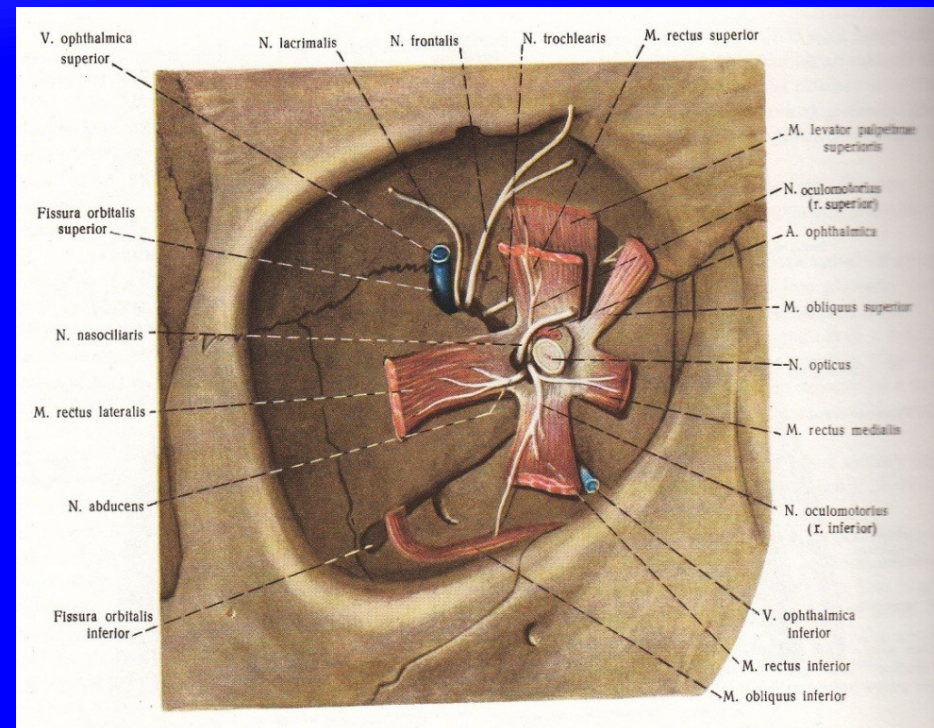
Fractura orbitae

Anatomy

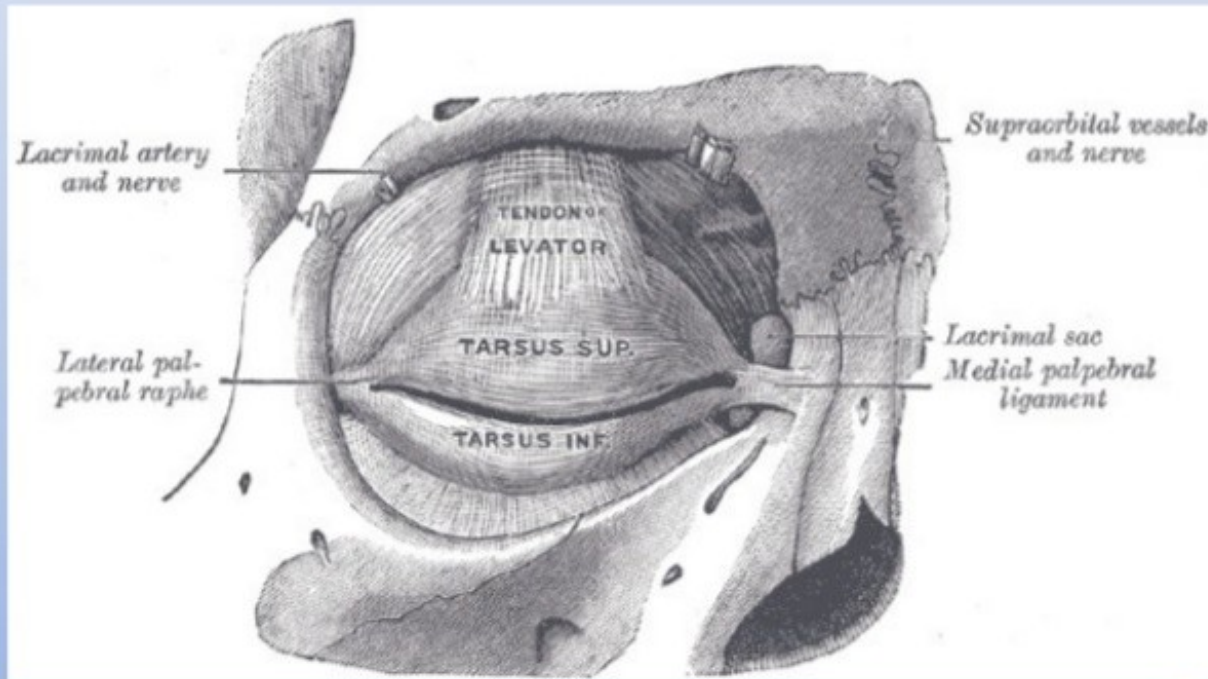
Canalis opticus

Fissura orbitalis superior

Fissura orbitalis inferior



Orbital septum



Fracturae of orbit

- ❖ Roof - frontobasal, orbitofrontal
- ❖ Lateral wall – orbitozygomatic
- ❖ Medial wall – orbitoetmoideal
- ❖ Floor – retromarginal, „blow out fracture“

Fracture of roof

❖ Cause – falling on a sharp object, blow to the Forehead (head in bend)

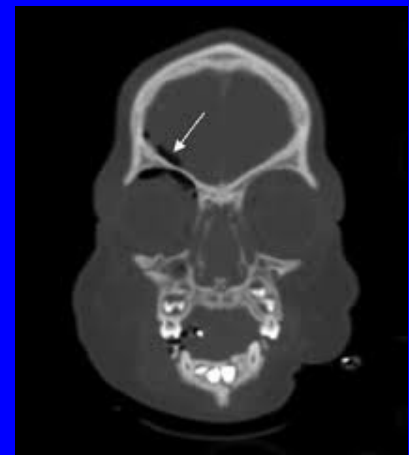
Signs: hematoma of the upper eyelid, disturbance of craniofacial bones

Small fractures require no treatment

Fractures extending into the anterior cranial fossa - competence NCH

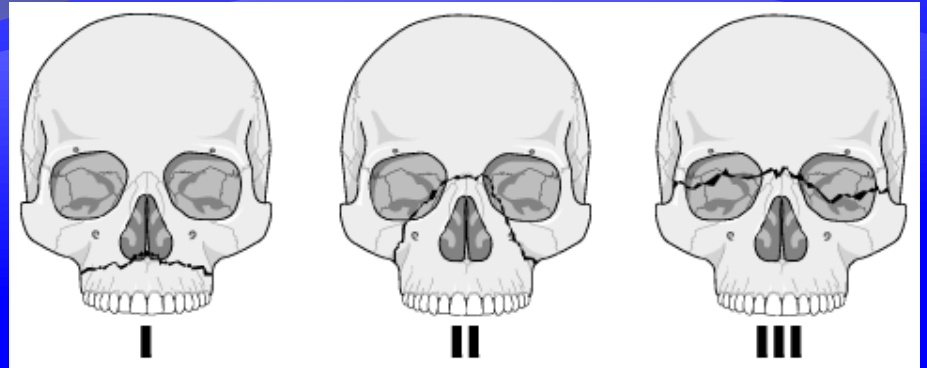
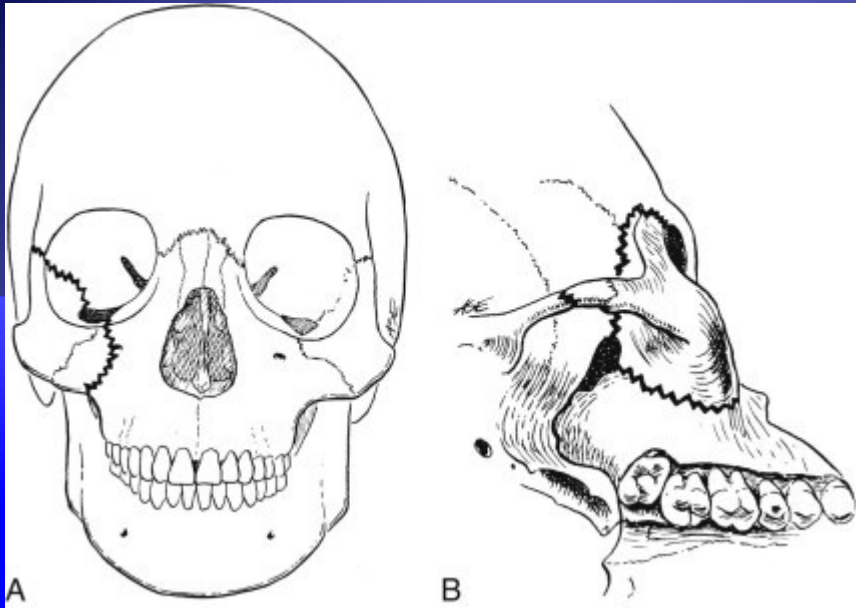
Damage visual functions - ischemic neuropathy n. II

Therapy ischemic neuropathy: decompression optical channel or megadoses of methylprednisolone



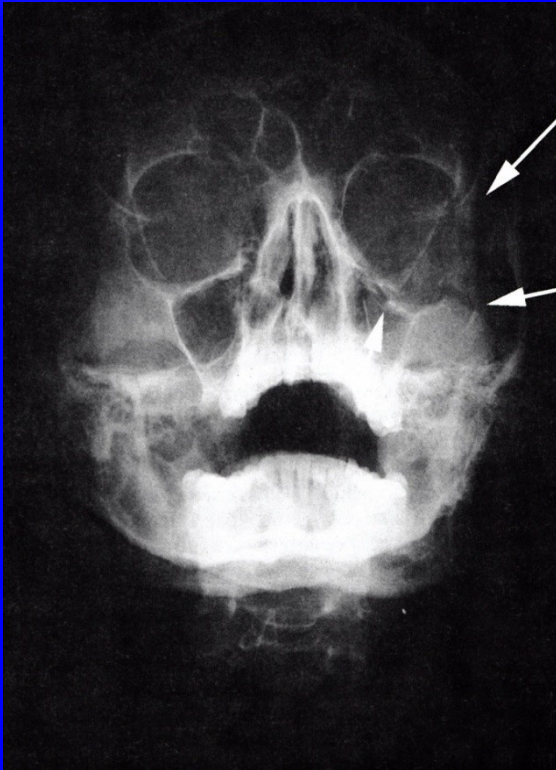
Fracture of lateral wall

- ◆ Cause - blunt trauma on cheekbones
- ◆ Usually part of zygomaticomaxilárniho complex (ZMK)
- ◆ Symptoms: pain, hematoma of eyelids, conjunctiva chemosis, visual disturbances and eyeball displacement (diplopia, enophthalmos)
- ◆ Dg. - CT, NMR
- ◆ Treatment - Indications for surgery is persistent diplopia, limited mouth opening and flattening of the facial region

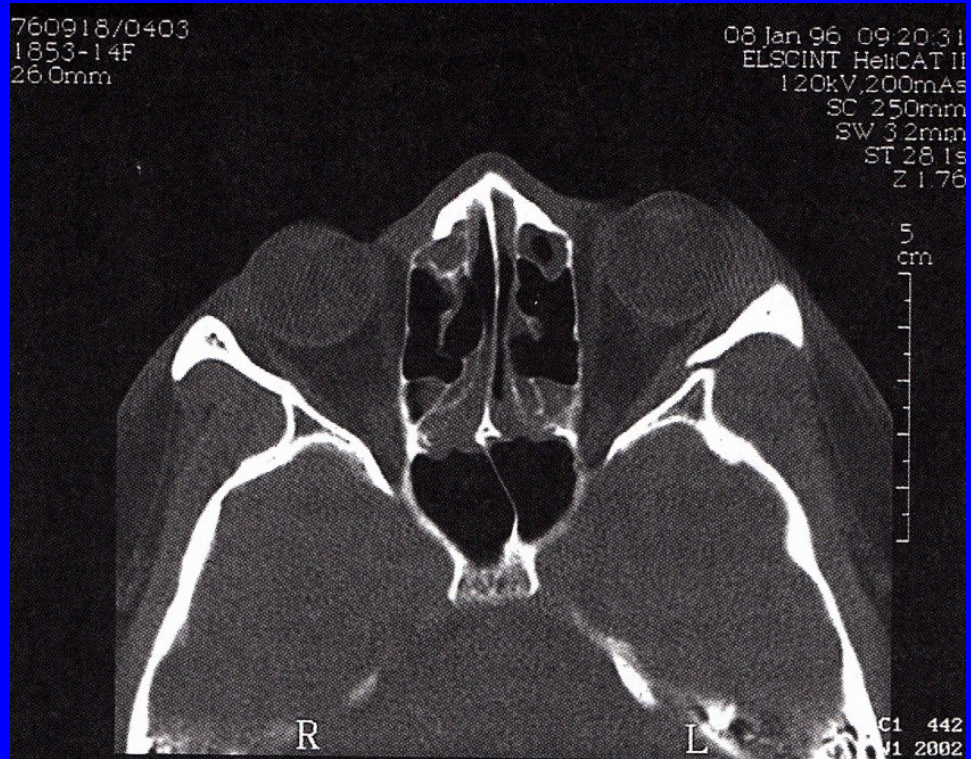


Orbit fracture

Fractura of ZMK



Isolated fracture of lateral wall



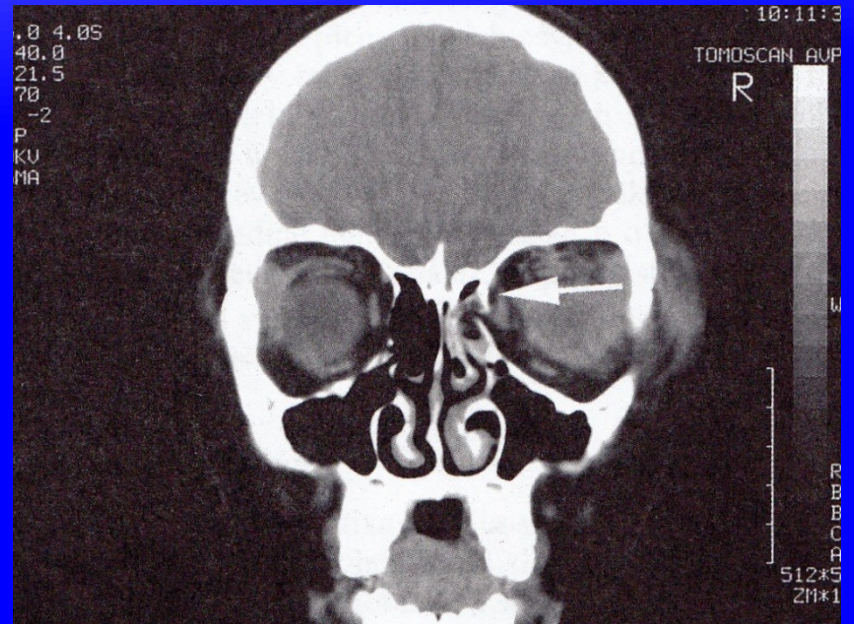
Medial wall fracture

Cause - blunt trauma

Symptoms - hematoma eyelid ,
subcutaneous emphysema
develops on blowing nose

Dg. - CT

Treatment – conservative

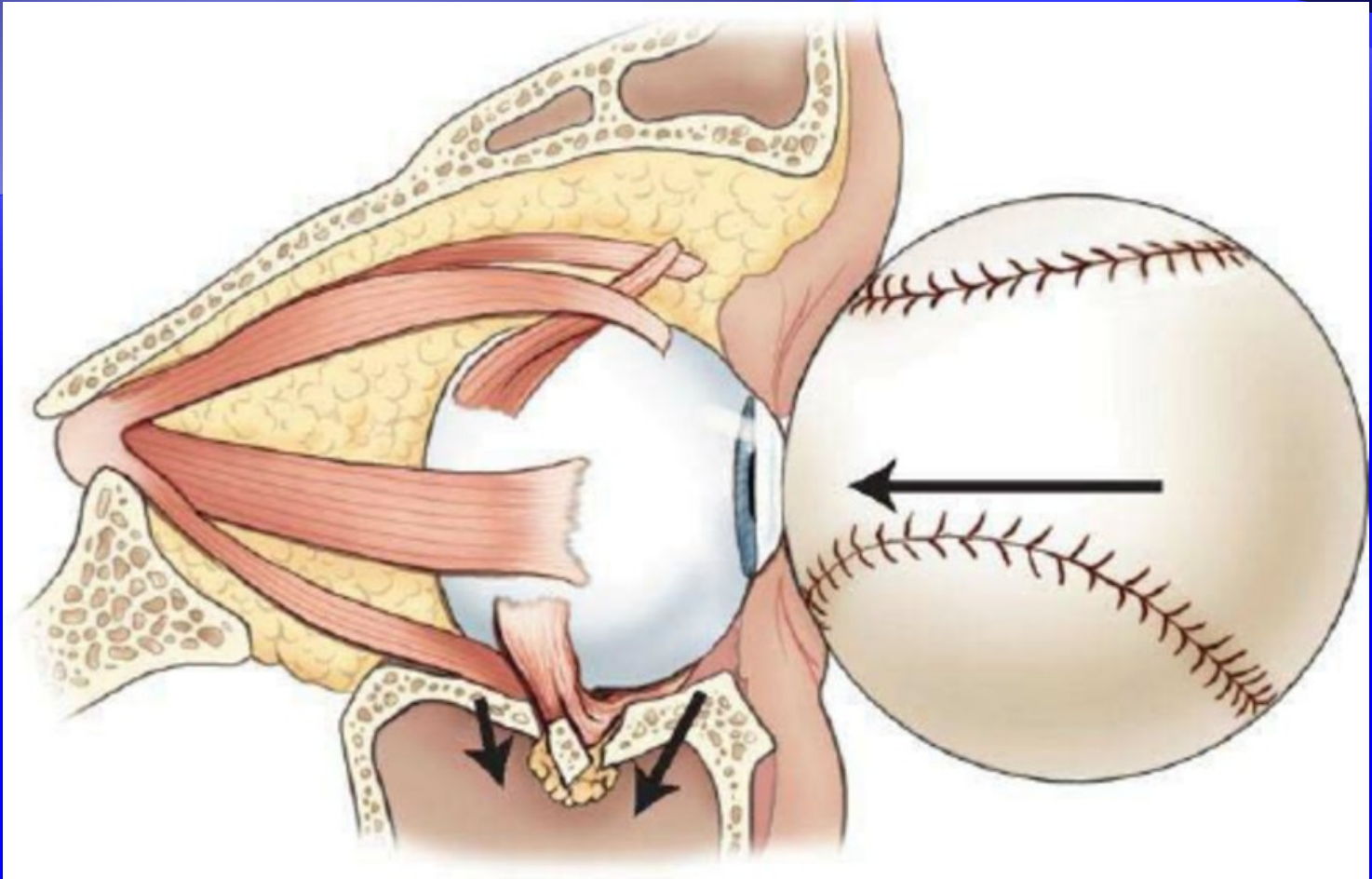


Blow out orbital floor fracture

Cause – sudden increase in the orbital pressure by a striking object (larger than 5 cm)

The symptoms - swelling, hematoma of eyelids
pseudoptóza, diplopia, inability to move the eyeball
upwards (seriously elevation).

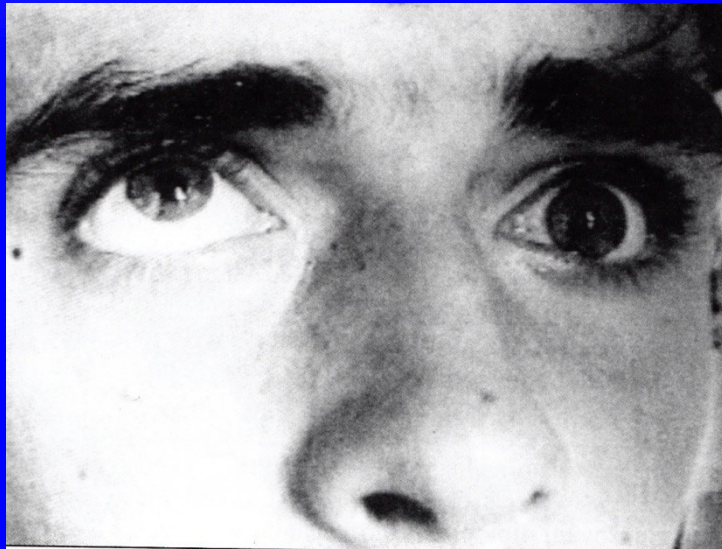
Paresthesia, hypoesthesia in n.infraorbitalis.



Blow out orbital floor fracture

- ◆ Dg. - X-ray orbit, CT
- ◆ Symptom - hammock - wide breaking orbital floor. Significant enophthalmos, without incarceration of m.r. inf.
Symptom - hanging drop - fissure fracture with soft tissue entrapment
- ◆ Double diplopia
Test passive duction
Treatment - Surgery – in case of entrapment (in 3-5 days -resolved orbital hematoma).

Blow out orbital floor fracture



Disease of lacrimal gland

Acute dacryadenitis – rare, in isolation

S: swelling of the lateral aspect of the eyelid –
characteristic „S“ shaped ptosis

T: usually is not required

Tumors: Lacrimal gland carcinoma - high
mortality and morbidity

T: surgery and radiotherapy

Disease of lacrimal gland

❖ Dacryadenitis



❖ Pleomorphic adenoma



Helter exophthalmometr

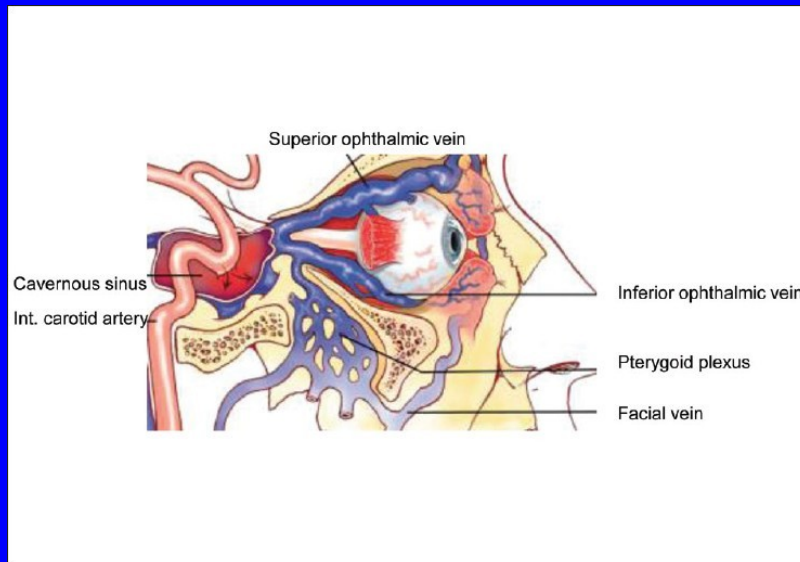
- ◆ Measurement of the position of the eye
Hertel exoftalmometr measures the distance corneal apex - the external edge of the bony orbit (diameter 17 mm, above 20 - pathology)
- ◆ Side difference to 2 mm - physiological
- ◆ Always should be recorded the distance of the outer edges of the orbits





Disease of orbit

- ◆ Pulsatile proptosis - the carotid cavernous fistula – abnormal communication btw vein and artery (carotid artery and orbital cavernous sinus vein)



Disease of orbit

- ◆ Intermittent proptosis - a symptom of vascular malformations in orbit (varix) - Valsalva maneuver
- ◆ Pseudoproptosis - high axial myopia enophthalmos



Disease of orbit

- ❖ Axial proptosis - only in the sagittal plane (Graves' disease, orbitocellulitis)
- ❖ Paraaxial proptosis - lesions of peripheral lateral space (lacrimal gland tumors, frontoetmoidal mucocele, tumors of PN sinus)
- ❖ Bilateral proptosis - thyreotoxicosis and EO



Examination of orbit

- ❖ X ray
- ❖ Ultrasound
- ❖ CT
- ❖ NMR

Inflammation of orbit

Etiopatogenesis:

Microbial infection
Immune responses
hyperergická-allergic-
type
Endocrine
ophthalmopathy (Graves
disease)

Microbial infections:

orbitocellulitis
phlegmone orbit
abscess of orbit
Tenonitis
myositis orbitalis
Inflammatory
pseudotumor of the orbit

Inflammation of orbit

❖ Orbitocelulitis



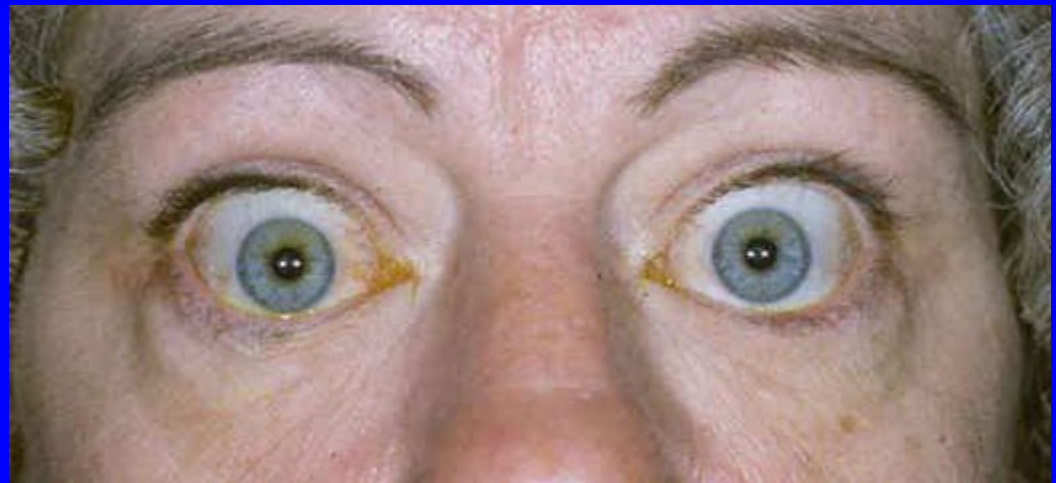
❖ Abscess of orbit



Endocrine orbitopathy (EO)

- ❖ Autoimmune disease with the formation of a binding antibodies on cells of thyroid gland
 - Orbital fat
 - Subcutaneous tissue front of the lower leg
- ❖ **Clinical picture:**
 - Eyelid symptoms
 - Eye movement disorder
 - Pseudoglaukom
 - Exophthalmus
 - Neuropathy n.II

Endocrine orbitopathy (EO)



Endocrine orbitopathy (EO)

Diagnosis:

laboratory findings

Imaging (ultrasound B scan, NMR, CT)

Test passive duction (muscle fibrosis)

Complications of EO - the cornea exposure, elevated intraocular pressure, changes in the orbit (neuropathy)

❖ Treatment:

Endokrinologist

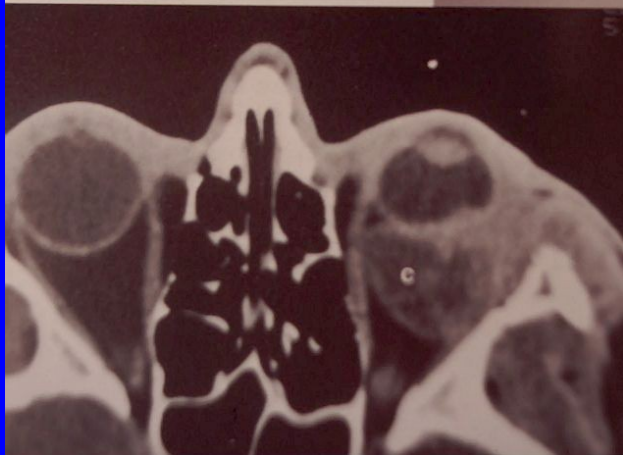
❖ Ophthalmologist - serious ocular complications - megadoses of steroids, orbital decompression, the treatment of ocular disorders

Tumours of orbit

- ❖ Benign and malignant
 - primary
 - secondary
 - metastatic

Primary
vascular tumors
dermoid cyst
nerve tumors
lacrimal gland tumors
meningiomas orbit
malignant lymphomas
rhabdomyosarcoma

Tumours of orbit



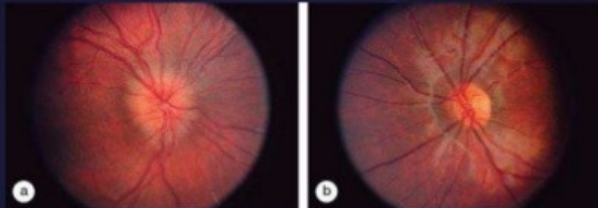
Tumours of orbit

Secondary
tumors of PN sinuses
carcinomas of the eyelids
Extrabulbar expansion of
intraocular tumors
metastatic -
Adenocarcinomas (breast,
lung, prostate, colon,
pancreas, testis)

Treatment
According to type, location
and size of the tumor.
Interdisciplinary
cooperation
Anterior, lateral, and
transcranial transetmoidální
orbitotomy.
Orbital decompression,
exenteration of the orbit.

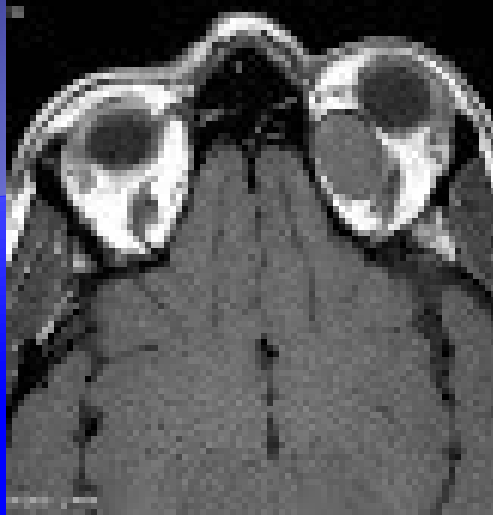


Face photo of a 5-year-old girl who developed noticeable proptosis OD and found to harbor an optic nerve glioma.



(a) The right fundus of a 5-year-old girl with a right optic nerve glioma reveals an optic nerve with mild edema. Her visual acuity was moderately to severely reduced. (b) The left nerve was normal.





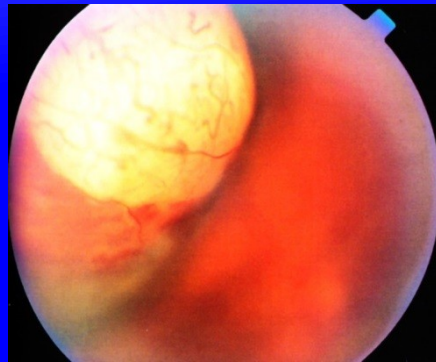
Enucleation and exenteration

Enucleation of the eyeball –

Removing the whole globe after
(transection of eye ocular
muscles and optic nerve)

Indications:

malignant intraocular tumors
without extrabulbární promotion
painful blind bulbus
cosmetically unsightly blind
bulbus
devastating eye injury (primary
enucleation)
sympathetic ophthalmia



Enucleation and exenteration

Enucleation of the eyeball
surgical procedure
without orbital implant
orbital implant



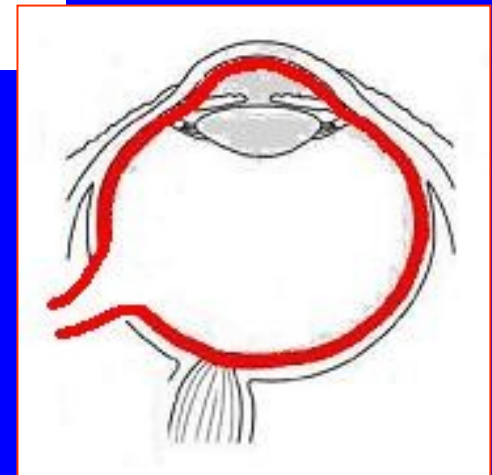
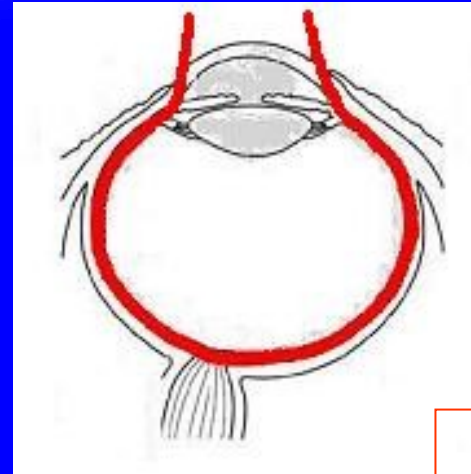
Exenteration of bulbi

Evacuating of the contents of the eyeball, leaving its packaging.

Indications:

Endophthalmitis (panoftalmitida)

The devastating trauma of the globe with the evacuation of its contents

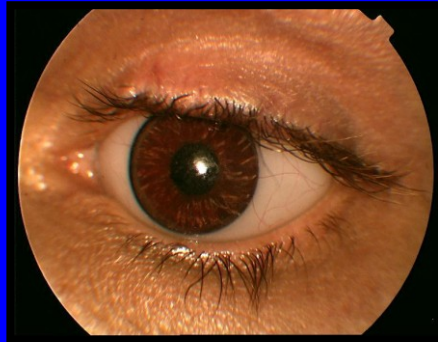
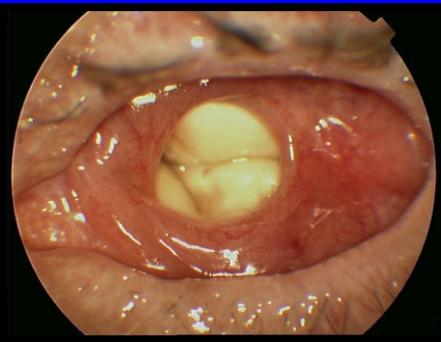
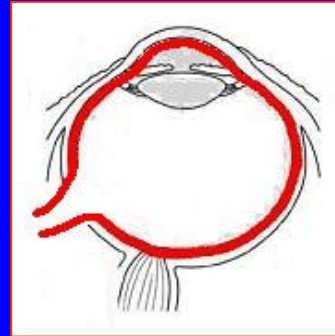


Enucleation and exenteration

Without implant

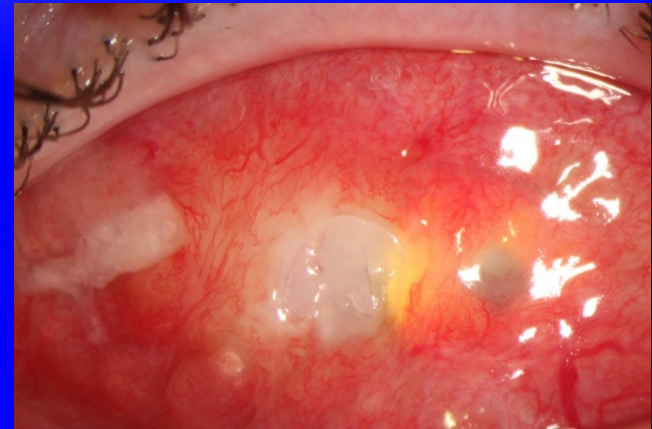


With implant



Enucleation and exenteration

Benefits of implant:
good motility of the globe
satisfactory cosmetic
effect

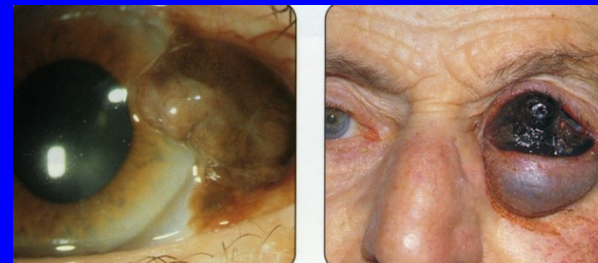


Disadvantages of
implant:
elimination of implant
the possibility of infection



Exenteration of the orbit

- ◆ Removing the entire contents of the orbit and the periosteum without retaining caps, preserving eyelid indications:
 - tumors of the orbit
 - tumors of the eyelids and eyeball with propagation into orbit
 - intractable infectious processes
 - trauma (devastating injuries with extensive tissue necrosis)



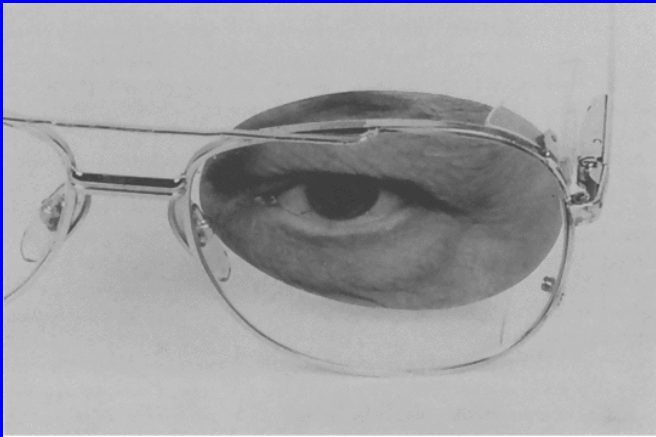
Exenteration of the orbit

Ways of dealing with the defect:
healing granulation tissue
free skin graft
tissue flap with pedicle (muscle,
fat, skin)



Exenteration of the orbit

Permanent Cosmetic Solutions:
Spectacle ectoprothesis
(prostheses)



Fixed implants

