Orbital Disorders Last updated: May 9, 2019

(PERI)ORBITAL CELLULITIS

ORBITAL CELLULITIS - infection of orbital tissues (posterior to orbital septum)
PERIORBITAL (S. PRESEPTAL) CELLULITIS - infection of periorbital skin and eyelid (anterior to orbital septum).

Sources of infection:
a) extension from paranasal sinuses (ethmoid sinusitis – 90% cases!!!), teeth
b) introduced via orbital trauma / surgery (most commonly – S. aureus and S. pyogenes).
c) hematogenous spread from bacteremia (most commonly – Haemophilus influenzae type b, Streptococcus pneumoniae).

SYMPTOMS & SIGNS
• primarily children (periorbital cellulitis < 5 yr of age, orbital cellulitis > 5 yr).
• > 90% unilateral.
• extreme orbital pain, exophtalmos (with painful resistance to globe retropulsion)*, painful ophthalmoplegia*, eyelid-conjunctival redness & swelling, decreased visual acuity*, nasal discharge.

*absent in PERIORBITAL CELLULITIS

Peri-orbital cellulitis caused by Pseudomonas aeruginosa (in acute myelogenous leukemia):

Acute infection of orbital tissue (preseptal):

Mucormycosis of orbit (uncontrolled diabetes mellitus, especially with ketoacidosis); potentially fatal fungal infection that involves nose, sinuses and orbit – proptosis, ophthalmoplegia, visual loss.

• fever & malaise, progressing rapidly to prostration!
**ORBITAL DISORDERS**

Eye84 (2)

- complications:
  1) vision loss (from optic neuritis, increased intraocular pressure, ischemia)
  2) thrombophlebitis of orbital veins → cavernous sinus thrombosis (dilation of episceral vessels is first sign!)
  3) panophthalmitis
  4) infection spread to meninges / brain.

  N.B. orbital veins (drain from middle third of face, including paranasal sinuses) have no valves - allow infection passage both anterograde and retrograde!

**DIAGNOSIS**

X-ray of sinuses, CT of orbit

Blood cultures (positive only in 33%)

- Needle aspiration of orbit is contraindicated!

Indications for CSF culture:
  1) infant < 1 yr with no external focus of infection
  2) suspected spread to CNS

**TREATMENT**

- antibiotics i/v ASAP (e.g. CEFUROXIME, CEPHALEXIN, CEFAZOLIN, NAFCILLIN).

  - in preantibiotic era mortality rate was 17% (20% of survivors were blind in affected eye!)

  - if secondary to sinusitis – add nasal decongestants.

  - if infection does not respond to antibiotics in 48-72 h or if suppuration is suspected → incision & drainage.

**EXOPHTHALMOS (PROPTOSIS)**

- eyeball protrusion

**ETIOLOGY**

1. Orbital inflammation, edema, infiltration (e.g. hyperthyroidism), tumors, injuries, hemorrhage, orbital pseudotumor (non-neoplastic cellular infiltration and proliferation, e.g. Wegener's granulomatosis), shallow orbits.

2. Cavernous sinus thrombosis, carotic-cavernous fistula (pulsating exophthalmos with orbital bruit).

3. Eyeball enlargement (e.g. congenital glaucoma, unilateral high myopia).

  - causes of PSEUDDPROPTOSIS - lid retraction, unilateral high myopia, facial asymmetry, contralateral exophthalmos.

If orbital pressure is eccentric → eyeball deviation, diplopia. Globe exposure can lead to corneal drying, infection (exposure keratitis), ulceration!!!

**DIAGNOSIS**

HERTEL exophthalmometer - formal measurement of position of anterior corneal surface in relation to lateral orbit wall.

- if proptosis is > 2 millimeters - space-occupying orbit lesion must be suspected.

Etiological diagnosis: CT / MRI of orbit, thyroid studies.

**TREATMENT**

- cornea should be protected from exposure.

- surgical orbital decompression.

**BIBLIOGRAPHY** for ch. “Ophthalmology” → follow this [LINK] >>

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