Differential diagnosis of the painful eye

Eye pain diagnosis

Medical history

We **ask** about:

- the onset of pain - sudden (e.g. in acute glaucoma, injury), gradual (e.g. with increasing pressure in the brain),
- localization of pain - unilateral/bilateral, dull pain in the orbit (acute glaucoma, tendinitis), pain in the temples of the head,
- nature of pain - burning (inflammation or burns), very severe destructive pain (glaucoma, neuralgia of the n.V.), eye movements (neuritis n. optici),
- general symptoms - fever (inflammation), nausea, vomiting (migraine, acute glaucoma),
- vision disorders - reduced vision, attacks of double vision (in ophthalmoplegic migraine).

We examine the eye by **inspection**:

- calm eye - in neuritis n. optici (n.II), ophthalmic migraine;
- congestive conjunctival hyperemia, mydriasis for increased IOP (intraocular pressure) in a glaucoma attack;
- signs of blepharitis (inflammation of the edges of the eyelids) or conjunctivitis in an uncorrected eye defect;
- we look for signs of inflammation;
- foreign body search;
- unilateral blisters with overlap on the forehead and nose (in herpes zoster ophthalmicus).

Palpation of the bulb - the bulbus of the eye is hard (like a stone) during a glaucoma attack.

Differential diagnosis

Ophthalmic causes:

- eye inflammation - infectious and non-infectious;
- glaucoma acute attack - severe dull pain behind the eye - pain in the orbit,
- asthenopia (= poor near vision) - for the anomaly of refractivity, poor lighting, vegetative dystonia, pain when tired, prolonged reading, driving a car; ... Th.: do not overload the eyes, correction with glasses,
- pain due to eye injury - Th.: immediately after first aid treatment hand over to the care of a specialist + TETANUS prophylaxis.
  - **first aid for eye injuries**:
    - chemical burn: **immediately rinse the eye** and transport to the **ophthalmology department**, the most dangerous are ***bases*** (lime, cement, contact lens cleaning solutions), ***tear gas*** - when there is a risk of colliquative necrosis, **in case of severe pain before rinsing we perform surface anesthesia** e.g. 1-2 gtt 2% *solution procaine*;
    - burns: eye wash, disinfecting eye ointments e.g. **carbethopendecinii bromide** (Opthalmo-Septonex ung.), **bandage**, from the 2nd degree of burns **send to the hospital ward**;
    - contusion: injury during squash, tennis, ..., shot-stopper, **eye bandage and send immediately to the hospital**;
    - foreign body: the surface free-lying body is **removed**, it is necessary to perform an inspection with a slit lamp, if it is a deeply placed body then we perform a **sterile bandage and send it to a specialist**;
    - perforation: we perform a **looser sterile bandage** and také the patient immediately to the **ophthalmology department**, we do not manipulate the foreign body in the eye;
  - ***PP complications*** - sympathetic ophthalmia, a rare disease of the uninjured eye several weeks apart, creeping chronic iridocyclitis, begins with reduced accommodation with a feeling of glare and pressure pain in the ciliary body.

Other causes - outside the eye:

- eye pain with headaches - ophthalmic and ophthalmoplegic migraine, neuralgia of the trigeminal nerve, increased pressure in the brain;
- optic neuritis – pain during eye movements;
- **ophthalmic migraine**: especially in younger 10-20 year old patients, more in women;
  - etiology - the cause is a temporary disorder of the posterior cerebral artery in the visual cortex;
  - clinically begins unilaterally with paracentral scintillating scotoma followed by flashes of light (when closing the eyelids blue-yellow intense fireworks) + unilateral headache with reddening of the facial skin on the affected side, general symptoms are nausea, vomiting, photophobia, and hypersensitivity to noise; Th. see Migraine/PGS (VPL)
- **ophthalmoplegic migraine**: periodic homolateral paralysis of the oculomotor nerve accompanied by pain limited to half of the head;
  - etiology - vascular spasms and vascular aneurysms at the base of the skull, tumors of the cerebral or frontal cavities, meningitis or encephalitis, onset of multiple sclerosis, psychological causes
  - clinically manifested in childhood or adolescence by severe half-head pain with nausea and vomiting,

accompanied by sweating of the affected half of the face, double vision or occasionally persistent paralysis, the seizure lasts for hours to weeks and the intervals between seizures tend to shorten;
    - Th.: we treat the underlying disease + at rest intervals and during seizures, see Migraine/PGS (VPL)
- **herpes zoster oftalmicus** - secondary infection or reactivation of VZV (herpes zoster virus) with involvement of the first branch of the n.V.
    - clinical manifestations of strictly unilateral sowing of blisters on the scalp, upper eyelid, and root of the nose - according to innervation of the first branch of the n.V. (if the lower eyelid is also affected - the second branch of the n.V. is also affected) - the patient suffers from segmental severe pain, corneal sensitivity disappeared;
    - rarely it can be complicated by herpetic corneal inflammation, iritis, and scleritis, bleeding into the anterior chamber of the bulb of the eye, secondary glaucoma;
    - Th.: aciclovir (e.g. Zovirax 800) 5x 1 tbl 800 mg p.o. for at least 5 days, severe cases hospitalized in the ophthalmology department for i.v. therapy + pain therapy, local therapy of skin efflorescences;
    - cave: always recommend to a specialist for examination, in case of skin damage the cooperation with a dermatologist is suitable.

References

Sources

- GESENHUES, S – ZIESCHÉ, R. *Vademecum lékaře.* 1. české edition. Galén, 2006. ISBN 80-7262-444-X.