CLINICAL PRACTICE GUIDELINE: Emergency Department

Corneal Abrasion

Disclaimer: This Clinical Practice Guideline ('CPG') was written for use in The Royal Victorian Eye and Ear Hospital Emergency Department. It should be used under the guidance of an Ophthalmology or ENT registrar. If clinical advice is required, please contact the Eye and Ear Admitting Officer for assistance: EYE: +61 3 9929 8033; ENT: +61 3 9929 8032. Links to internal Eye and Ear documents cannot be accessed from the website CPG.

See also: corneal foreign body, recurrent erosion syndrome, penetrating eye injury (PEI), microbial keratitis

Description:

A corneal abrasion is an epithelial defect in the cornea.

Red Flags:

- Exclude corneal laceration
- Exclude mechanism suggestive of penetrating eye injury, e.g. hammering, glass
- Corneal infection: corneal infiltrate/anterior chamber (AC) reaction (cells)

How to Assess:

History:

- Symptoms: pain, foreign body (FB) sensation, redness, tearing, decreased vision (if central)
- Mechanism of injury:
    - High speed – increased risk of PEI (hammering, drilling)
    - Sharp object (fingernail, paper) – increased risk of recurrent erosion syndrome (RES)
    - Contaminated object (plant) – risk of infection
- Document details of protective eye wear and whether it is a work-related injury

Examination:

Slit lamp examination may be facilitated by topical anaesthetic.

- Conjunctival injection
- Evert upper lid to rule out subtarsal FB in all patients. Particularly important if vertical linear abrasions on cornea
- Position and size of abrasion: stain with fluorescein, measure/document size at slit lamp
- Assess depth of injury. If deeper injury, consult the AO or consultant as may be corneal laceration or penetrating injury. Perform Seidel test with fluorescein to rule out leak.
- Corneal infiltrate: if present indicates possible microbial keratitis
- AC reaction: may indicate presence of infection

Acute Management:

- Antibiotic drops or ointment: chloramphenicol ointment QID (blurs vision for approximately 30 minutes) or eye drops QID for 3-5 days.
- Consider stat dose of cycloplegic (e.g. cyclopentolate 1%) if patient has significant pain or photophobia.
- An eye pad is generally not used, as it can delay corneal healing. In the setting of large epithelial defect, a double eye pad may be used for 24 hours to reduce discomfort. Do not use an pad eye if abrasion caused by organic matter.
- Pain management: cool compresses, dim lights, rest, regular oral analgesia, e.g. paracetamol. Local anaesthetic drops should not be given to the patient to take home.

Follow up:

- Consider follow up by optometrist
- Indications for follow up with Acute Ophthalmology Service (AOS):
    - Abrasion caused by plant/organic matter
    - AC cells
- If at increased risk of RES (plant/ fingernail/ sharp object injury), recommend paraffin based lubricant ointment (e.g. Polyvisc®) nocte for 3 months

Discharge instructions:

- Advise patient to return if increasing pain, photophobia or decreased vision
- Advise patient they will have FB sensation once local anaesthetic wears off
- Topical anaesthetic drops should never be prescribed on discharge
- Education regarding use of protective eye wear
- Advise patient regarding RES
- Contact lens wearer: discard previous lens and resume contact lens wear with a fresh contact lens once eye has been asymptomatic for 1 week.

Additional notes:

- Give patient copy of Corneal Abrasion Patient Information

Evidence Table

Author(s)	Title	Source	Level of Evidence (I – VII)
Adam T. Gerstenblith Michael P. Rabinowitz	Wills Eye Manual, 6th Edition 2012		**VII**
Alastair Denniston Philip Murray	Oxford Handbook of Ophthalmology, Oxford University Press 2006		**VII**
Dr Weng Sehu	Eye Emergency Manual, 2nd Edition 2009		**VII**

The Hierarchy of Evidence

The Hierarchy of evidence is based on summaries from the National Health and Medical Research Council (2009), the Oxford Centre for Evidence-based Medicine Levels of Evidence (2011) and Melynk and Fineout-Overholt (2011).

I) Evidence obtained from a systematic review of all relevant randomised control trials.

II) Evidence obtained from at least one well designed randomised control trial.

III) Evidence obtained from well-designed controlled trials without randomisation.

IV) Evidence obtained from well-designed cohort studies, case control studies, interrupted time series with a control group, historically controlled studies, interrupted time series without a control group or with case series.

V) Evidence obtained from systematic reviews of descriptive and qualitative studies.

VI) Evidence obtained from single descriptive and qualitative studies.

VII) Expert opinion from clinician, authorities and/or reports of expert committees or based on physiology.

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