Clinical Guideline

COMMON EYE PRESENTATIONS IN CHILDREN

SETTING
Children’s Emergency Department (CED), Bristol Royal Hospital for Children (BRHC)

FOR STAFF
CED clinicians

PATIENTS
Paediatric patients presenting to CED with eye problems

GUIDANCE

When a child presents to the CED with an eye injury/problem the clinician is required to consider a number of differential diagnoses. Most will be a minor event but some may cause long term damage or loss of vision.

1. **History** - when assessing the painful eye the following questions should be asked:
   - How the injury occurred, chemicals - what, when and how;
   - Projectiles - what, when, how and speed;
   - Pain, sensation, watering, photophobia, discharge;
   - Visual disturbances, including floaters and flashes;
   - Contact lens or spectacle wearing history;
   - Previous eye operations, injuries or problems;
   - First aid given.

2. **Examination**
   - Visual Acuity – an age appropriate chart must be used, if the child normally wears a corrective lens they should be worn or a pinhole used;
   - Visual fields assessed;
   - Eye movements;
   - Lids, lashes, conjunctiva and sclera look for:
     - Lids - bruising, swelling, redness, discharge, function, lacerations;
     - Lashes – discharge, inversion;
     - Conjunctiva – redness, subconjunctival haemorrhage;
     - Sclera - colour, injected, foreign body (FB), lacerations.
   - Cornea, anterior chamber, iris and pupil:
     - Cornea – FB, fluorescein uptake, cloudy cornea;
     - Iris – symmetrical, shape, functioning, bletharospasm;
     - Pupil – pearl, shape and size, light reflex present;
     - Anterior chamber - look for blood or pus in the anterior chamber.
   - Perform fundoscopy.
Corneal abrasion

History of: A foreign body entering the eye - commonly a branch, fingernail, toy or dust.

Presentation:
- Painful eye;
- Watery;
- +/- redness;
- +/- difficulty opening eye;
- +/- reduction in visual acuity;
- Photophobia.

Examination:
- Consider the use of topical pain relief e.g. Oxybuprocaine hydrochloride 1-2 drops in affected eye.
- Stain with Fluorescein sodium (1-2 drops).
- Check for a sub tarsal foreign body by everting the lid and performing a tarsal plate sweep with wet cotton bud. Remove any foreign body seen with a wet cotton bud.
- Ideally take the child and use slit lamp in adult ED*. If the clinician is not confident with using a slit lamp then use an ophthalmoscope with a blue light to examine fluorescein stained eye to identify any abrasion.

* The child will need to be taken to adult ED for slit lamp examination. The appropriateness of taking a child to adult ED should be discussed with the CED consultant and/or nurse in charge.

Management:
- Chloramphenicol 1% eye ointment is preferred to eye drops. Consider prescribing chloramphenicol 0.5% eye drops for daytime use, together with chloramphenicol 1% eye ointment for use at night. Eye drops may be more practical for daytime use (ointments can smear and cause blurred vision). Contact lenses should not be worn during treatment. Prescribe 1 application every 2 hours for 24 hours and then 4 times a day for 3 days.
- Oral analgesia.

Refer to the eye casualty for next day assessment if reduction visual acuity or abrasion crosses pupil. Viscous leakage requires referral to the on call ophthalmologist.
Corneal/Tarsal Plate Foreign Bodies

History of: Foreign body entering the eye - commonly metals or fibreglass

Presentation:

- A visible foreign body is likely to be seen by the naked eye;
- Painful;
- Watery;
- +/- redness;
- +/- difficulty opening eye;
- +/- reduction in visual acuity;
- Photophobia.

Examination:

- Consider the use of topical pain relief e.g. Oxybuprocaine hydrochloride 1-2 drops in affected eye.
- Stain with Fluorescein sodium (1-2 drops).
- Ideally use slit lamp in adult ED*. If the clinician is not confident with using a slit lamp then use an ophthalmoscope with a blue light to examine fluorescein stained eye to identify any abrasion.

* The child will need to be taken to adult ED for slit lamp examination. The appropriateness of taking a child to adult ED should be discussed with the CED consultant and/or nurse in charge.

Management:

- Remove the foreign body with wet cotton bud if possible.
- Metals and rust rings need to be removed with a green needle after instilling topical anaesthetic drops and using a slit lamp (if competent and confident). If you have never done this, ask for senior help. Once removed re-check with fluorescein to ensure foreign body has been removed and there is no rust ring remaining.
- If a rust ring cannot be removed easily with a green needle then refer to the eye hospital for removal at 2-3 days.
- Chloramphenicol 1% eye ointment is preferred to eye drops. Consider prescribing chloramphenicol 0.5% eye drops for daytime use, together with chloramphenicol 1% eye ointment for use at night. Contact lenses should not be worn during treatment. Prescribe 1 application every 2 hours for 24 hours and then 4 times daily for 3-5 days.
- Oral analgesia.

Beware of intra-ocular foreign bodies which can enter the orbit at high speed. If a superficial foreign body is not identified, consider X-ray of the orbit or CT scan of the orbit to exclude an ocular foreign body. If confirmed refer urgently to the on call Ophthalmologist.
Penetrating Eye Trauma

History of: Sharp object or projectile entering the eye

Presentation:
- Potentially visible FB;
- Pain;
- Leakage of vitreous fluid (which can dilute fluorescein at the wound site);
- Distorted pupil;
- +/- blepharospasm;
- Visual disturbance.

Management:
- Analgesia as pain and injury dictates.

All penetrating eye trauma should be referred to the on call ophthalmologist. Orbital x-rays should be requested.
Hyphema

History of: Blunt trauma (Commonly from a ball).

Presentation:

- Grossly visible blood in the anterior chamber of the eye;
- Photophobia;
- Pain;
- Blurred vision;
- +/- Reduced visual acuity.

Management:

- Keep head at an elevated level.
- Analgesia (NO NSAIDS as they increase the risk of re-bleeding).
- Consider associated injury such as an orbital blowout fracture.

Patients with hyphaema require referral to the on call ophthalmologist.
Chemical injury

History of: Exposure of the eye to acid or alkali chemicals.

Presentation:
- Pain;
- Conjunctival injection;
- Photophobia;
- +/- Reduced visual acuity;
- Clouding of sclera.

Management:
- Check pH (should be 7.0).
- Copious irrigation for 30min with 0.9% sodium chloride from 1 litre infusion bag (up to a maximum of 3 litres), until pH normal. It is important to properly wash out the eye to a neutral pH. **Failure to do this adequately can lead to visual loss.**
- Prescribe a prophylactic topical antibiotic - Chloramphenicol ointment 4 times daily for 5 days.
- Oral analgesia as required.

Refer to the on call ophthalmologist for consideration of topical steroids.
Infective conjunctivitis

History of: Bacterial or viral infections and may affect one or both eyes.

Presentation:

- Bloodshot/injection;
- Burn or feel gritty;
- Produce pus that sticks to lashes (more common with bacterial conjunctivitis);
- Itchy;
- Watery discharge (more common in viral conjunctivitis).

Management:

- Bacterial conjunctivitis - Chloramphenicol 1% eye ointment is preferred to eye drops. Consider prescribing chloramphenicol 0.5% eye drops for daytime use, together with chloramphenicol 1% eye ointment for use at night. Contact lenses should not be worn during treatment. Prescribe 1 application every 2 hours for 24 hours and then 4 times daily for 3-5 days.
- Viral conjunctivitis – lubricant drops or ointment.
- Good hygiene – not sharing towels, etc.
- Consider the need for an eye swab.

RELATED DOCUMENTS

https://bnfc.nice.org.uk/
https://www.nice.org.uk/guidance/conditions-and-diseases/eye-conditions
https://www.rcophth.ac.uk/standards-publications-research/clinical-guidelines/

AUTHORISING BODY

Children’s Clinical Effectiveness Committee

SAFETY QUERIES

Contact the Eye Emergency Department for general queries on 24732 or Children’s Emergency Department 28666 or ophthalmologist on call via switchboard on 100 for referrals.