

# Eye Lid Infections

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## Eye lid infections

### Acute ulcerative/staphylococcal blepharitis

Acute staphylococcal blepharitis presents with brittle crusty, yellow scales along lid margin. The patient may report that the lid margins are tender and red.

A secondary keratoconjunctivitis with superficial punctuate keratitis (SPK) with sterile “island” infiltrates at the 2- 4- 8- & 10 o'clock positions may be present as an inflammatory reaction to alpha exotoxins released by the bacteria.

#### *Treatment of acute ulcerative blepharitis*

Lid hygiene is very important and the first treatment to prescribe. Lid hygiene consists of scrubs and compresses.

Lid scrubs should be carried out twice daily for a week and thereafter once daily using cotton wool buds dipped into a dilute solution of Baby Shampoo or using proprietary cleaning pads such as Lid Care (CIBA) or Supranettes (Alcon)

In conjunction with the lid scrubs, very warm compresses should be applied by the patient four times per day for the first week tapering to once daily after resolution.

Broad spectrum antibiotics (e.g., Brolene, Polyfax (bacitracin + polymyxin B) may be ‘prescribed’.

For SPK/infiltrates consider a steroid/antibiotic ‘combo’ (e.g., framycetin + gramicidin + dexamethasone). The GP will usually co-operate in prescribing medications not currently on our list.

It is advisable to follow up the patient in one to two weeks. If not resolving then consider adding oral antibiotic (e.g., oxytetracycline).

### Internal hordeolum (acute chalazion)

This is an acute abscess infection of meibomian gland and presents as a focal area of pain, redness and swelling. There may be pre-auricular node involvement.

Rule out cellulitis, chronic blepharitis or dacryocystitis which would all need management.

***Treatment of internal hordeolum***

Hot compresses minimum qid should be prescribed together with antibiotics (e.g., Brolene ointment qid). Follow up should be after two days with continuation of treatment for five days; then recheck. Watch for cellulitis (usually pre-septal) which should be treated if it occurs with oral antibiotics.

**Meibonitis**

This is a chronic congestion of meibomian glands due to build of meibum (fatty acids). It may be associated with seborrhoea but there is often a staphylococcal or immunological aetiology. Because the tear lipid layer is affected, there are often ocular surface effects with dry eye and/or burning symptoms.

Slit lamp examination shows an inflammatory appearance to posterior lid margin and palpebral conjunctiva with congested orifices of meibomian glands.

As mentioned previously, there will be ocular surface involvement due to blepharokeratoconjunctivitis. The presence of “frothy tears” is a diagnostic sign.

***Treatment of meibonitis***

Hot compresses bid, lid massage and gland expression bid and the addition of oral oxytetracycline 250 m qid for 10 to 30 days (or longer). Review the patient after two weeks and following resolution, advise patient to continue hot compresses and lid scrubs on an ongoing basis.

**External hordeolum (stye)**

This is an acute abscess infection of lash follicle (gland of Zeiss or Moll) and once again is commonly called staphylococcus.

Unilateral pain, redness and swelling along lid margin. There may be external suppuration.

***Treatment of external hordeolum***

Hot compresses qid should be prescribed. Antibiotics may help (e.g. Brolene ointment qid) as may removal of the lash using epilation tweezers.

Do not squeeze the lesion which may spread the infection. Review after 5 days. Once resolved, instruct patient on future lid hygiene.

## **Chalazion**

Chalazia are common, chronic lid lumps or granuloma.

An external chalazion involves the Zeiss gland whereas internal chalazion is a lesion of the meibomian gland.

There are a number of differential diagnostic considerations to be made.

Importantly, if the lesion is recurrent referral needs to be made to rule out any possibility of neoplasia. Other conditions or associations that need to be ruled out include association with systemic causes, acute lid infection and acne rosacea.

### ***Treatment of chalazia***

One rule of thumb or guideline is that if the lesion is less than 8 mm in diameter, prescribe hot compresses for minimum qid. If over 8 mm in size then consider referral for surgical removal. The ophthalmologist may wish to treat any acute infection prior to surgery.

For heat therapy, follow-up in two weeks and if resolving, continue treatment. If there has been no improvement then consider referral for surgery.

## **Acute viral infections**

Viruses consist of particles containing DNA or RNA and can only replicate in host cells. Strongly antigenic producing monocyte proliferation and folliculosis

### ***Herpes Simplex Virus (HSV)***

Over 90% of adults have HSV antigens

HSV 1 – oral

HSV 2 – genital

Lid inflammations are primary herpetic infections. The lesions appear as a cluster of clear, pearl-like vesicles which do not respect midline and do not scar.

### ***Treatment of HSV blepharitis***

- Keep clean with pure soap and water
- Cold compresses
- Calamine lotion
- “Tincture of Time”
- Acyclovir topical cream q4h

### ***Herpes Zoster Virus (HZV) (shingles)***

Varicella virus. Vesicles appear along branch(es) of trigeminal nerve in immunosuppressed adults (old, HIV, chemotherapy). The ophthalmic division is commonly involved.

Severe pain occurs 3 to 5 days before eruption.

Look out for Hutchinson's sign in which the tip of nose involved. This alerts you that the nasociliary branch is affected and there will be corneal involvement.

#### *Treatment of HZV lid and facial lesions*

- Topical and systemic steroid (e.g., prednisilone)
- Acyclovir 800 mg 5 x daily for up to 10 days
- NSAID and narcotic analgesics

#### ***Molluscum contagiosum***

White, round, waxy non-inflamed umbilicated lesion which will contain yellow cheesy material when virus is active. May shed active virus into cul-de-sac giving a follicular conjunctivitis.

#### *Treatment of molluscum contagiosum*

- When quiet (dry central core), leave alone
- If cheesy material present, loosen with sterile needle and squeeze out contents
- Follow-up one week and repeat as necessary

#### ***Verucca (viral wart)***

Single or multiple non-secreting papillomatous warts.

## **Parasites**

### **Demodicosis**

This is caused by *demodex follicularum* an arachnid mite that lives in hair follicles and sebaceous glands. The organism is endemic in older adults and there is some evidence to show a correlation (but not cause) with acne rosacea. Excessive numbers produce toxic or hypersensitive marginal type reaction.

Symptoms and signs of demodicosis include acute itchiness of the eyelids especially on awakening and tubular/pyramidal collarettes extending from the base of lash.

### ***Treatment of demodicosis***

Lid scrubs and ointment (e.g., Vaseline) applied liberally, at night to the eye lids should be prescribed for 10 days with a review after that period. After resolution, continued regular lid hygiene should be carried out.

## **Pediculosis**

There are a number of species of lice that may infest humans including *pediculosis corporis*, *pediculosis capitis*, and *pthirus pubis*.

They may be transmitted by direct contact or through contaminated bed linen etc.

Symptoms and signs of lice include itching and burning of the eyelids, a crusty appearance to lid margins as well as the presence of lice and nits.

### ***Treatment of lice***

The nits and lice should be removed with forceps or debride with alcohol soaked cotton-wool bud. Vaseline should be applied to lids tid for 5 days to smother the organisms. Lice specific shampoo and careful combing to rid scalp should be recommended. The patient should be reviewed after 5 days.

## **Bacterial conjunctivitis**

### ***Differential diagnosis of bacterial conjunctivitis***

Bacterial conjunctivitis usually occurs over 2 to 3 days compared to viral which takes longer to develop. The eye appears meaty red with a mucopurulent discharge. The lashes may be stuck in the morning (but not on presentation – patients clean themselves up). Papillae may be present. Chlamydia should be ruled out. This is not a painful condition and vision is normal.

### ***Treatment of conjunctivitis***

Treat with lid hygiene, irrigation, warm compresses and antibiotics starting with a loading dose. If you are suspicious then take a conjunctival swab BEFORE commencing treatment. This is very rarely necessary.

### *General treatment*

Following a loading dose, treat qid for 5 to 7 days minimum. If the organism is resistant then take a culture and change to another antibiotic and/or extend course. Consider oral antibiotics.

## **Viral conjunctivitis**

### ***Differential diagnosis of viral conjunctivitis***

This presents and progresses over a 3 to 7 day period and is commonly caused by an adenovirus. The eyes look pink/purple with a watery discharge and the lids can look puffy with the conjunctiva appearing “boggy”/plica enlarged (hypertrophy).

Follicles are often present and the cornea may show SPK. The preauricular lymph node is often enlarged.

### ***Treatment of viral conjunctivitis***

Ocular lubrication and warm compresses may be prescribed together with topical vasoconstrictors. See the patient 7 days later for follow up

It is very rare for a secondary corneal infection so prophylactic antibiotics are **not** usually indicated. This should be explained carefully to the patient as patients often expect an antibiotic for any infection.

## **Allergic conjunctivitis**

Type 1 allergy is the most common of ocular reactions. Allergens include dust, pollen, foods, insect bites, and drugs.

The allergen attaches itself to an IgE molecule on mast cell or basophil and histamines and leukotrienes are released. These produce erythema, chemosis, tearing, itching, and heat.

Examples of Type 1 allergy include atopic dermatitis, hay fever, asthma and anaphylactic shock. A reaction occurs within minutes of exposure (compare to Type 4).

There is often a family history of allergy. The disease is often seasonal and the specific allergen known.

Signs and symptoms include itching (the primary symptom). It may be unilateral (contact) or bilateral. Vision is unaffected or fluctuates. The bulbar conjunctiva appears pink, red, “boggy” and glassy.

A stringy mucoid discharge may be present and the lids oedematous and red.

Whilst papillae are more likely to occur, sometimes follicles are present.

### ***Differential diagnosis of allergic conjunctivitis***

Rule out other causes of red eye and conjunctivitis. Try and determine whether Type 1 or 4 and what the causative agent might be.

Causes include hay fever (plant allergens). The allergy may present as seasonal conjunctivitis or spring catarrh and be caused by tree and flower allergens, mould spores or grasses.

General allergic conjunctivitis can be caused by pets, house mites, household products, personal hygiene and perfumery products.

General irritative conjunctivitis can occur from smog (ozone, particulates), chemicals or livestock.

### ***Management and treatment***

Possible treatment and management interventions include:

- remove the allergen if possible cure
- wash the eye with saline eye wash
- apply frequent cold compresses
- remove pollution and bacteria from lid margins by carrying out lid scrubs
- wash the eyes with astringent drops or eye wash
- instil decongestant drops
- counter lacrimation and itchiness with anti-histamine drops
- counter lacrimation, itchiness and vasodilation with oral anti-histamines
- reduce conjunctival response to allergens with mast cell stabilisers
- steroids

## **Corneal trauma**



### ***Superficial abrasions***

Superficial abrasions are commonly seen in practice and the patient will often volunteer a direct acute history. There may be trauma to the ocular surface from a transient foreign body which is usually particulate in nature. Fibreglass can be problematic. The patient complains of grittiness and, usually mild pain

May be due to an embedded foreign body particularly upper tarsus (so always evert lids), trichiasis or entropion, be contact lens induced (edge or trapped foreign matter), EBMD or “dry eye”,

Examination should consist of Vas followed by slit lamp with fluorescein examination of lids, lashes, conjunctivae and cornea. Single evert the superior lid for tarsus and double evert for the cul-de-sac.

#### Management of superficial abrasions

- Firstly remove foreign body by irrigation, swabbing or with a blunt spatula.
- Prophylactic antibiotics
- Pain management
- Recheck in 18 to 24 hours
- Add warm compresses
- Add Hypertonic saline (5%) q4h for 4 weeks
- Review again 24 hours then 1 week

### ***Deep (non-penetrating) abrasions***

There is usually a distinct history of gouging or laceration from fingernail, paper cuts and mascara brushes.

The patient will be in moderate to severe pain with lid spasm, oedema and erythema. VA will be reduced and the bulbar conjunctiva hyperaemic. There will be AC cells and flare.

Examination should include VA s and the use of a topical anaesthetic may be required. Slit lamp examination with fluorescein must be used to rule out penetration (stroma) and perforation (full thickness puncture).

Perpendicular sharp objects (e.g., pencil; pine needle) are frequently involved.

Look for stromal or endothelial involvement and Seidel's sign.

### ***Management deep (non-penetrating) abrasions***

Never allow patient to take topical anaesthetic for home use. Dilate with cycloplegic (Homatropine 5% or cyclopentolate 1% bid). Instil (and dispense, this is an emergency) a broad spectrum antibiotic eye ointment (chloramphenicol). Advise patient to take an analgesics (Aspirin, Ibuprofen; Paracetamol; or Codeine).

Only pressure patch severe abrasions if patient is likely to rub eye or where most of cornea is involved, or use a bandage contact lens.

Follow-up the next day and introduce warm compresses & hypertonic saline. Follow every 24 to 48 hours until completely resolved.

## **Foreign bodies**

There is usually an obvious history. Try and ascertain if the entry was of high speed ? Discomfort ranges from mild to severe. Frequently the event happened 1 – 3 days before presentation.

Signs include a distinct immovable embedded particle(s) on corneal epithelium, Coat's white ring (oedema/infiltrates), a rust ring and foreign body tracking on the cornea.

A topical anaesthetic should be used to enable slit lamp microscopy to determine depth of foreign body. The lid should be everted. Assess for secondary infection and/or anterior uveitis.

### ***Management***

Remove foreign body and any rust ring. Prescribe antibiotics, cycloplegia (for 24 hours) and an oral analgesic.

Review after 24 hours.

## **Acknowledgements**

Catania L. (1995) Primary Care of the Anterior Chamber, Appleton & Lange  
Norwalk

Cullom RD and Chang B (1994) The Wills Eye Manual 2<sup>nd</sup> Ed,  
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