BMJ Best Practice

Stye and chalazion

Straight to the point of care

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Summary

Styes (hordeola) are typically tender to palpation, while chalazia are not.

Dacryoadenitis (infection or inflammation of the lacrimal gland) and dacryocystitis (infection of the lacrimal sac) can be confused with stye; their respective locations (lateral upper lid and inferior to the medial epicanthus) are key.

Most styes and chalazia resolve with warm compresses and topical antibiotics.

Recurrent lesions may require biopsy to exclude carcinomas. Recurrent chalazia may require excision.

Definition

A stye, also known as a hordeolum, is caused by an acute infectious process involving localised abscess formation at the upper or lower eyelid. One of 3 glands is typically infected: the meibomian glands or the glands of Zeis and Moll (ciliary glands). *Staphylococcus aureus* (most common) and *S epidermidis* are typically involved, and the eyelid appears erythematous and swollen in addition to being tender to palpation.

Chalazia are non-infectious inflammatory conditions caused by a foreign body reaction to sebum released by meibomian glands.

Epidemiology

The incidence of styes and chalazia is unknown, but they are commonly encountered in clinical practice. There are no known differences in prevalence between populations worldwide; neither are there known differences between sexes or races. Styes and chalazia may occur more commonly in adults than in children.

Aetiology

A stye (hordeolum) is caused by an acute infectious process involving localised abscess formation at the upper or lower eyelid. One of 3 glands is typically infected: the meibomian glands or the glands of Zeis and Moll (ciliary glands). *Staphylococcus aureus* and *S epidermidis* are the most common organisms associated with a hordeolum.[1] [2] [3] [4] This process occurs more commonly in adults than in children, possibly due to anatomical differences. Patients with a chronic illness such as diabetes, blepharitis, seborrhoea, and elevated serum cholesterol may also be at increased risk.[5]

Chalazion formation is more often a chronic process and results from an inflammatory foreign body reaction to sebum. Blockage of normal drainage of sebaceous glands, especially at the eyelid margin, by blepharitis, rosacea, or hordeolum may contribute to development of chalazia.[1][3] [4] [6]

Pathophysiology

One of 3 glands is typically acutely infected by the staphylococcal species in a hordeolum. Meibomian glands secrete sebum, which helps prevent evaporation of the tear film on the eye; when acutely infected, the hordeolum is termed internal, and is generally less circumscribed in appearance due to its deeper position within the tarsal plate. Zeis and Moll glands (ciliary glands) are generally smaller and more superficial and, when infected, give rise to pain and swelling at the root of the eyelash. These hordeola are termed external and are responsible for the classic appearance of a stye.[2]

Chalazia arise when sebum from meibomian glands is released into the tarsal plate, causing a localised inflammatory reaction. This may occur secondary to mechanical obstruction from a hordeolum or from dysfunction of the meibomian gland with subsequent stasis and release of sebum. As such, chalazia represent a more chronic, non-infectious inflammatory reaction.[1][3] [4] [6]

Classification

Clinical manifestations

Internal hordeolum

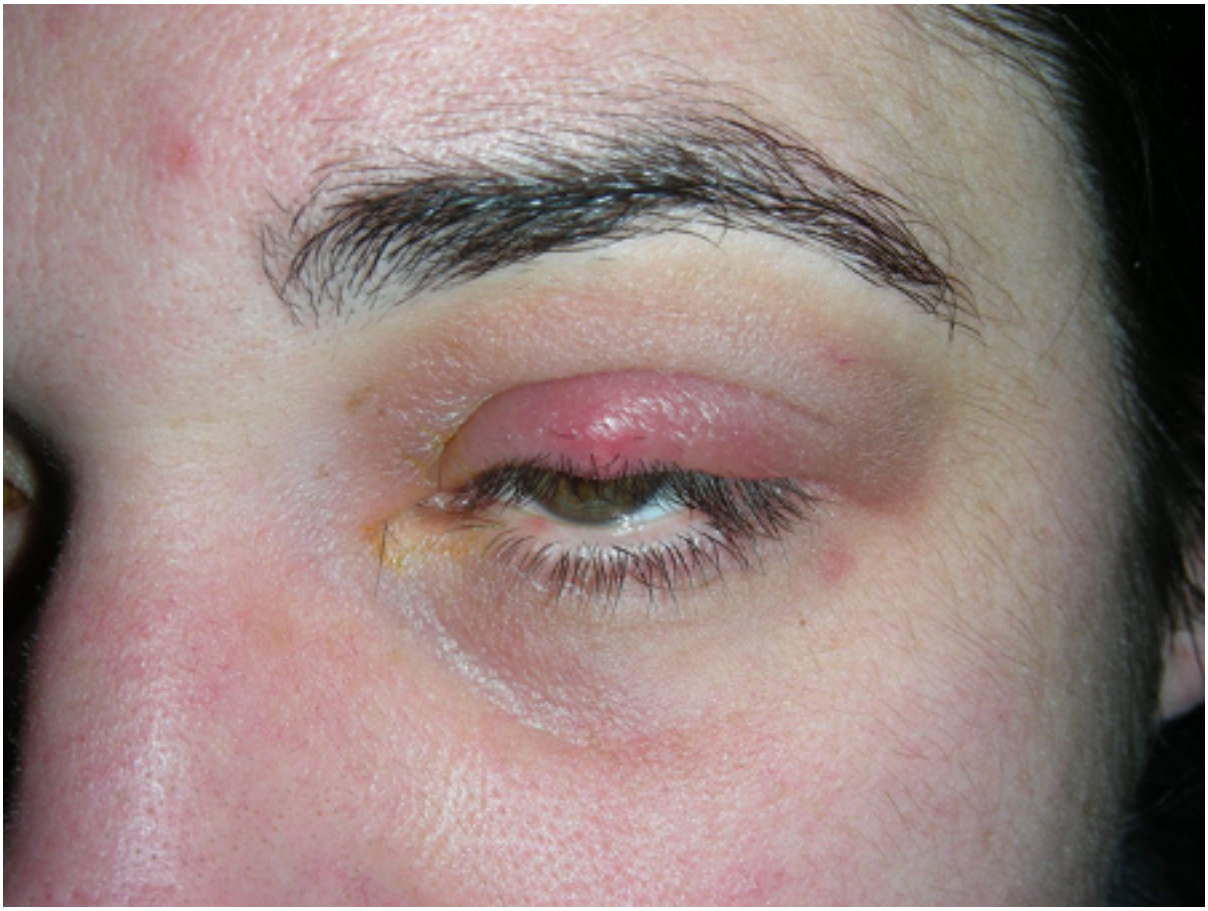
- Infection of the meibomian glands; creates moderate, more diffuse swelling; often points towards the tarsal conjunctiva (inside of eyelid).

External hordeolum

- Infection of the ciliary glands (Zeis or Moll glands); swelling is smaller and superficial. These typically account for the classic appearance of a stye.

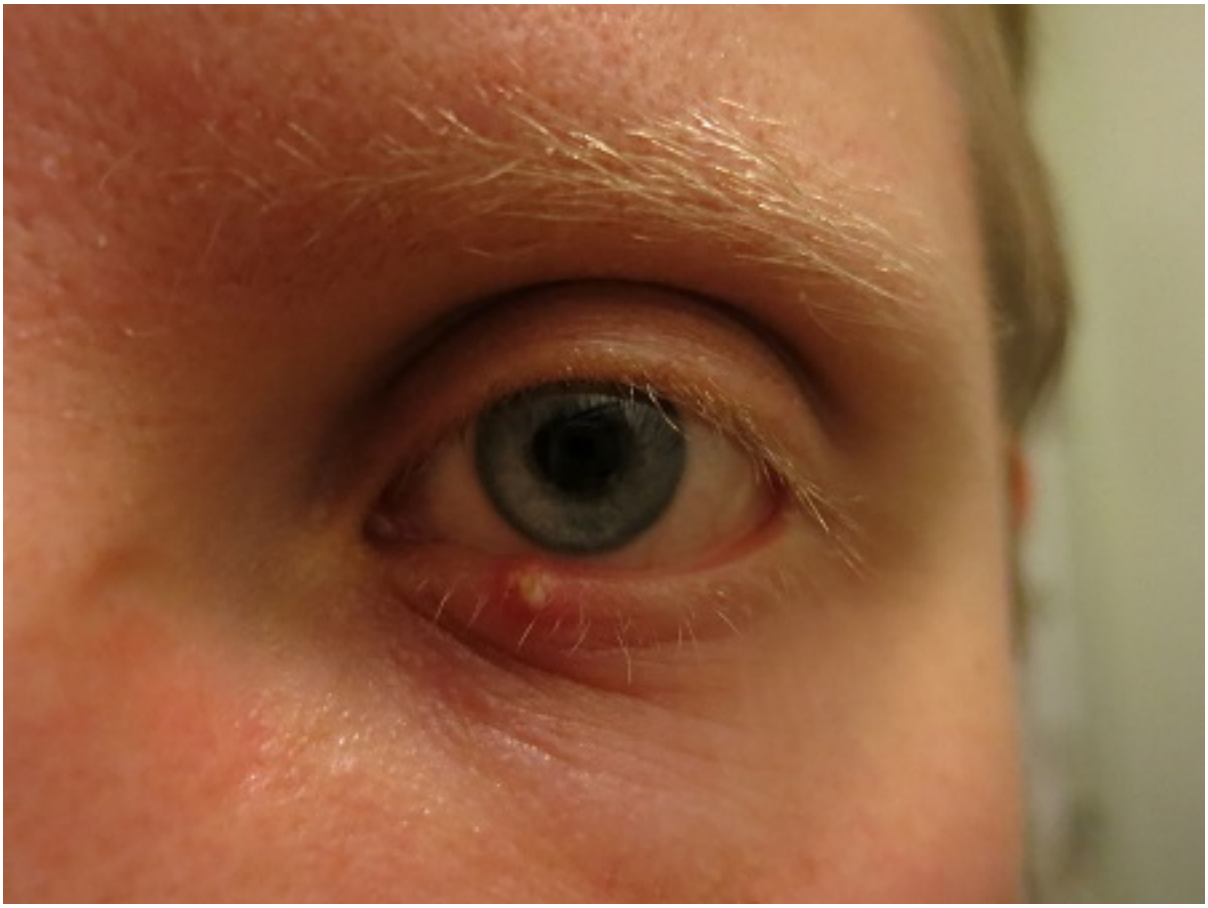
Chalazion

- Chronic non-infectious granulomatous inflammation from a foreign body reaction to sebum released from meibomian glands.



Left upper lid internal hordeolum with limited cellulitis

Gupta A, Stacey S, Amissah-Arthur KN. Eyelid lumps and lesions. BMJ. 2014;348:g3029.



Left lower lid external hordeolum

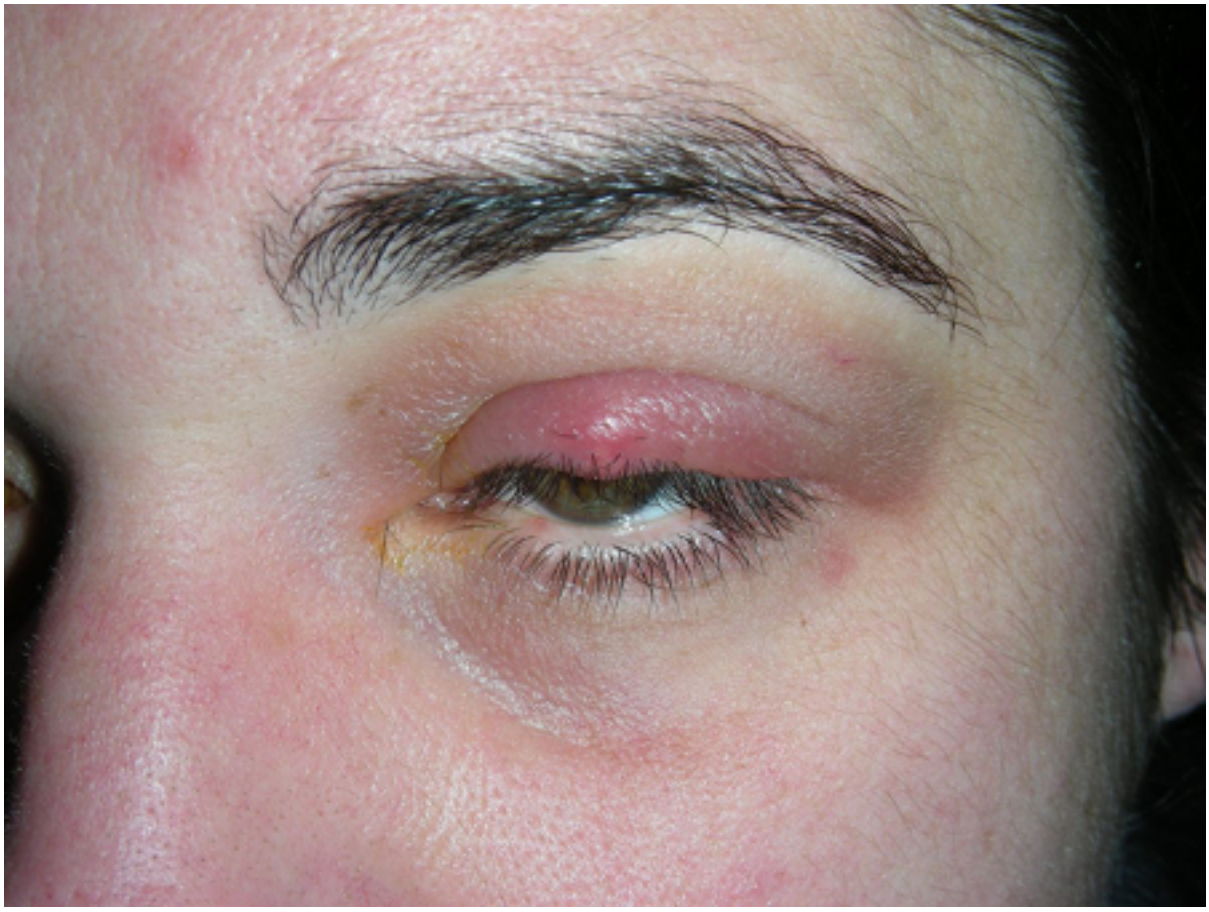
Case history

Case history #1

A 30-year-old man presents with a painful, swollen right eye for the past day. He reports minor pain on palpation of the eyelid and denies any history of trauma, crusting, or change in vision. He has no history of allergies or any eye conditions and denies the use of any new soaps, lotions, or creams. On examination, he has localised tenderness to palpation and erythema on the mid-line of the lower eyelid near the lid margin. The remainder of the physical examination, including the globe, is normal.

Other presentations

Styes (hordeola) typically present as acute, painful infectious swellings of the eyelid. Chalazia are acute or chronic non-infectious inflammatory swellings and are often indistinguishable from hordeola. A chronic chalazion may persist as an area of focal eyelid swelling without associated signs of infection or inflammation. Chalazia may become so large as to press on the globe and cause alterations in vision.



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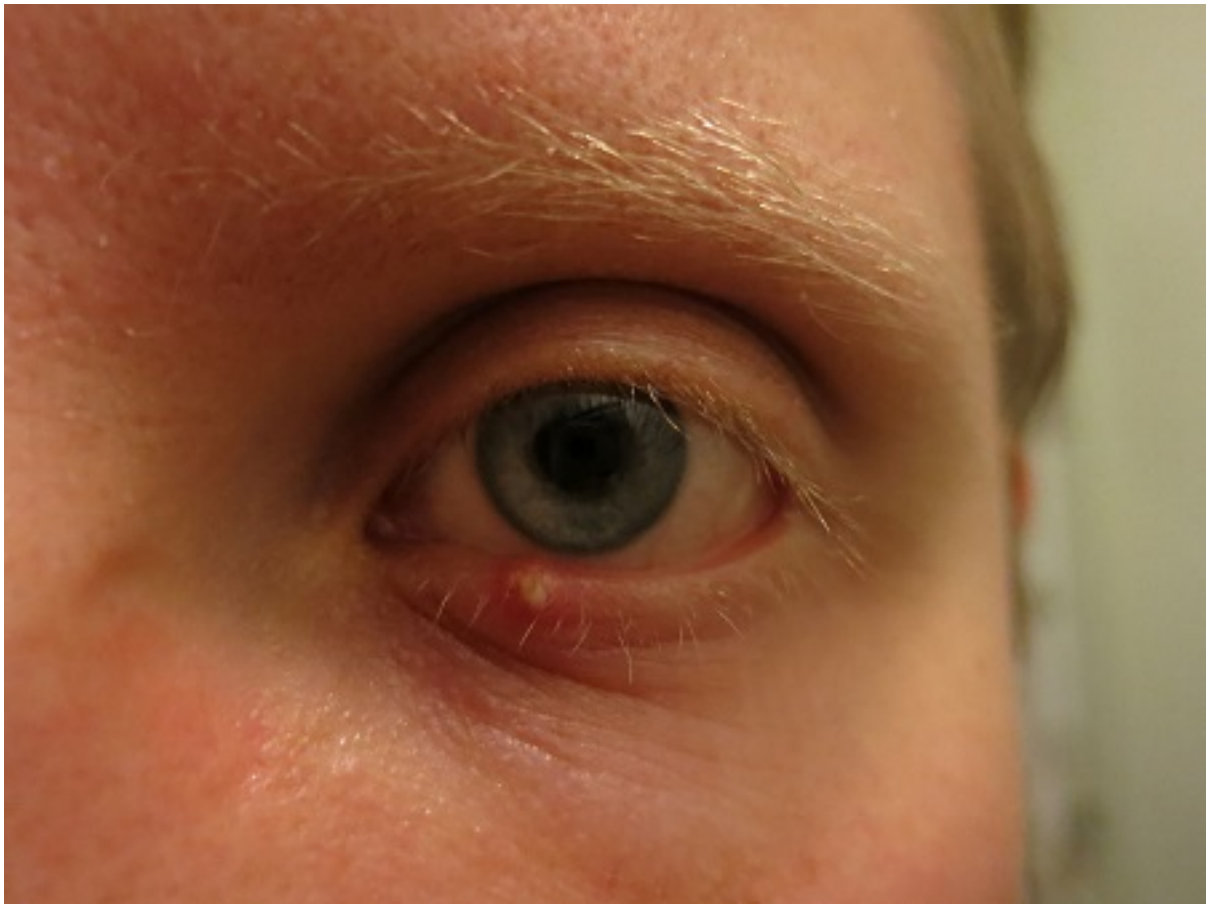
THEORY



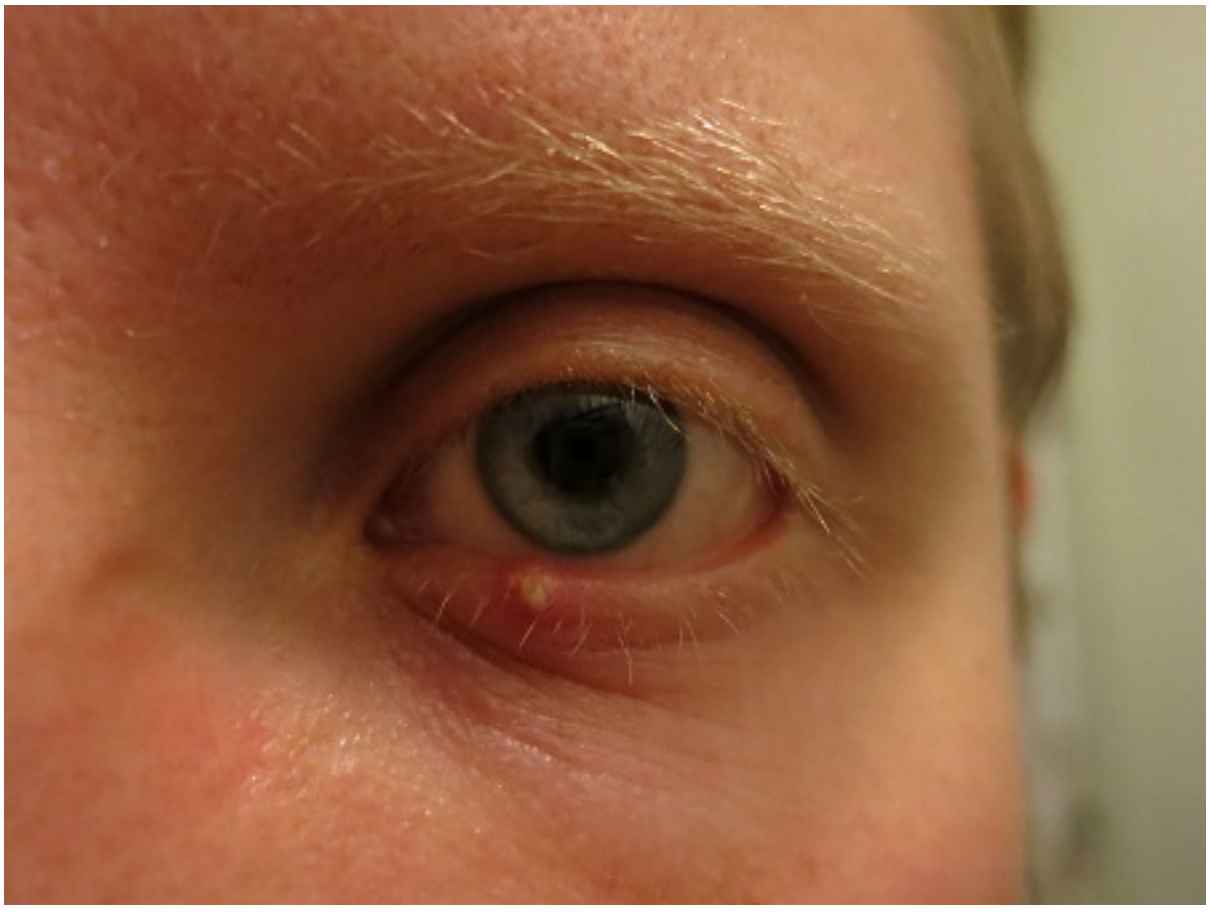
Left lower lid external hordeolum

Approach

The diagnosis of styes (hordeola) and chalazia requires only history and physical examination. No diagnostic tests are required or useful in their diagnosis. In the acute setting, it may be difficult to differentiate an internal hordeolum from a chalazion. However, because they initially require common treatment modalities that are relatively benign, this differentiation is of limited clinical utility.

External hordeolum

Patients typically present with an external hordeolum complaining of acute onset of unilateral eyelid pain. Pain and swelling involve either the upper or lower lid and are generally well localised to a discrete area, which is tender to palpation. Tenderness is localised at the lid margin in the case of an external hordeolum, giving the classic appearance of the stye. The ciliary glands of Zeis and Moll are typically involved.[13] The hordeolum appears as a pustule that points towards the lid margin. The lid itself may be slightly swollen with some erythema around the involved area. A diffusely swollen lid with marked erythema should prompt the clinician to consider other diagnoses.[1] [2][13]

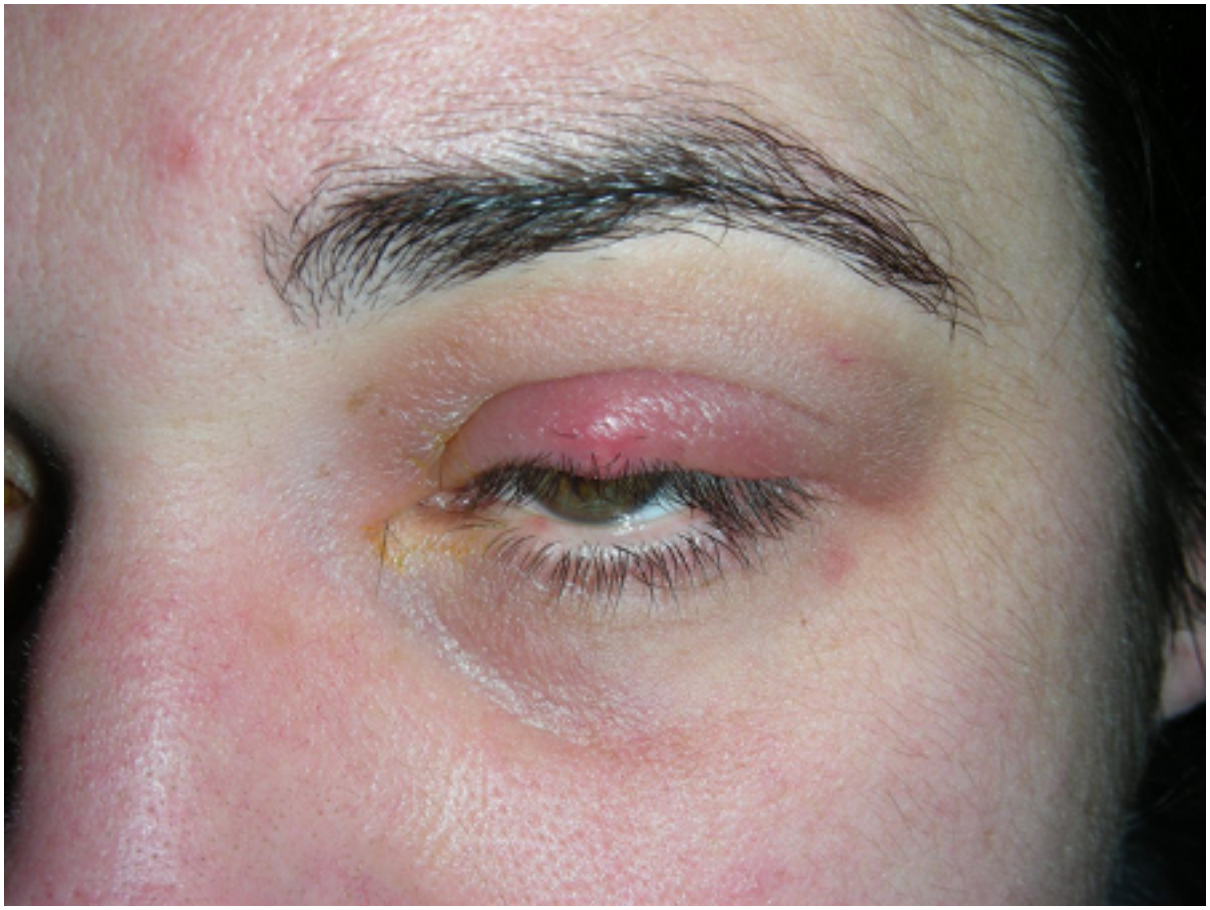


Left lower lid external hordeolum

Internal hordeolum

Patients with an internal hordeolum also present with acute pain and swelling of the eyelid. Infection of the meibomian gland, which sits deeper in the lid within the tarsal plate, is responsible for internal hordeola. [2] [13] Infection may cause obstruction of the meibomian gland, which is a relatively long gland and has an orifice at the lid margin. If obstructed, there may be no notable pathology at the lid margin. Tenderness

and erythema may be more diffusely located in the lid. The hordeolum may point towards the conjunctival surface and be diagnosed by everting the lid to reveal a small pustule, which is the hallmark of an internal hordeolum.[2] [13] If the gland is infected but not obstructed, physical examination may be similar, without the internal pustule, but with pain and tenderness at the lid margin, as with external hordeola. As the treatment is the same for both internal and external hordeola, this differentiation is not of great clinical concern.[1][13]



Left upper lid internal hordeolum with limited cellulitis

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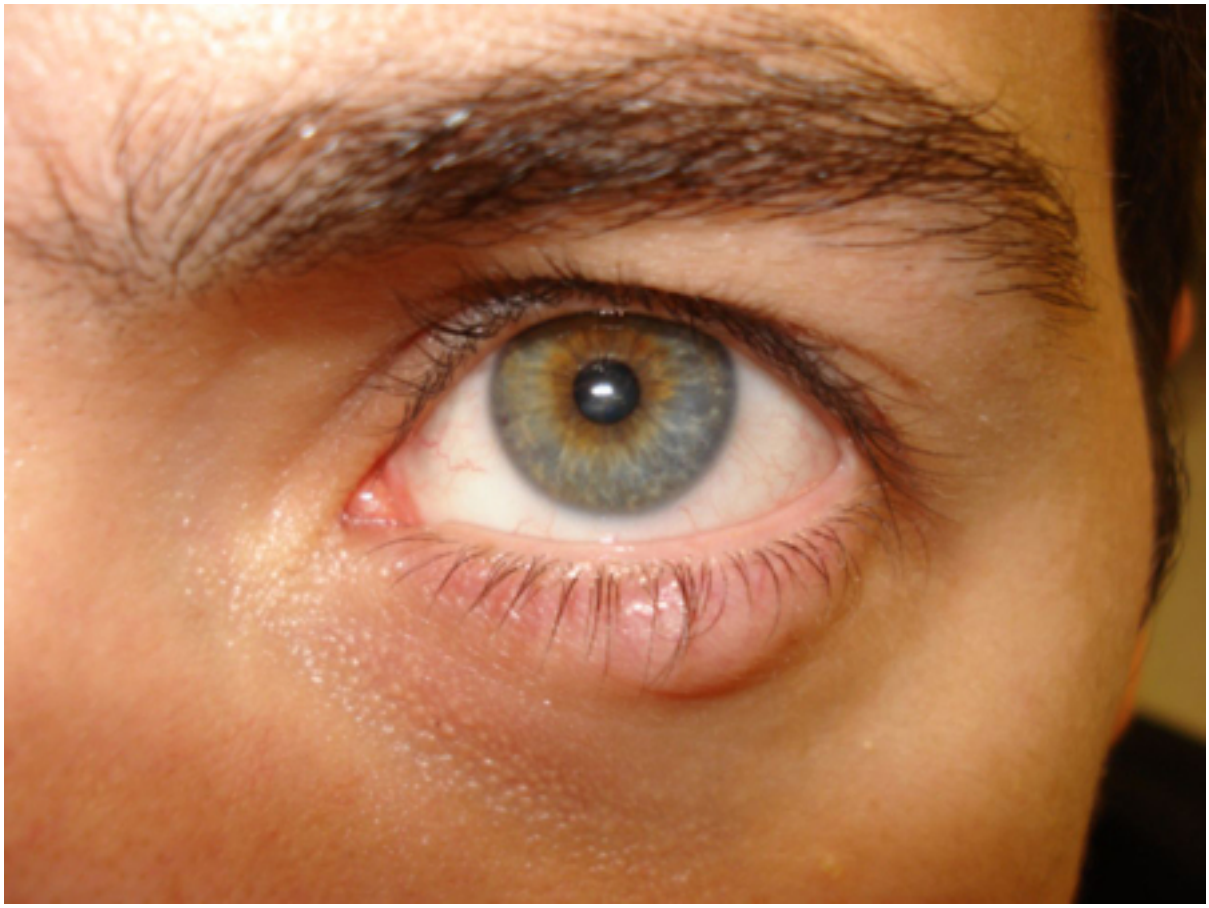
Chalazion

In contrast to hordeola, chalazia typically present in a more indolent fashion. Chalazia result from a localised inflammatory reaction to sebum rather than an acute infectious process. When they arise, they may be confused with an internal hordeolum, lacking any pustule at the lid margin. However, chalazia are non-tender nodules and the surrounding skin typically lacks any erythema or signs of an acute bacterial infection. If chalazia persist, chronic skin changes may appear overlying the nodule.[1][6] [13]



Lower lid chalazion of the left eye

Gupta A, Stacey S, Amissah-Arthur KN. Eyelid lumps and lesions. BMJ. 2014;348:g3029.

Difficulties in diagnosis

While the diagnosis of chalazia and hordeola is typically straightforward, there are several entities with which they may be confused. A complete history should be obtained to identify any contributory factors or point to a differential diagnosis (e.g., visual changes, eye trauma, immunocompromised status, infections, cancer history, travel history). Specifically, pain and swelling of the lid without a discrete visible pustule at the lid margin or conjunctival surface should prompt the clinician to consider other diagnoses. Peri-orbital (pre-septal) and orbital (septal) cellulitis are more diffuse processes and should be considered if the examination lacks a pustule or papule, as this has significant treatment implications. Such patients usually have more diffuse swelling, oedema, and erythema of the lid and peri-orbital region.[4][13]

Ophthalmology referral for possible malignancy is recommended for ulceration and destructive changes of the eyelid margin and in patients with chronic or recurrent chalazia.[7] [8][14] Consider early referral for young children with large chalazion due to risk of amblyopia.[7]

Imaging

Computed tomography (CT) scanning of the face and orbits is not useful in diagnosing hordeola or chalazia. However, if alternative diagnoses cannot be differentiated clinically, CT scanning may be appropriate to confirm the diagnosis and exclude other, more serious pathology such as orbital cellulitis.[13]

History and exam

Key diagnostic factors

acute pain of eyelid only (common)

- Patients most commonly complain of acute, unilateral eyelid pain of either the upper or lower lid. Pain of the globe is not present. Eyelid pain is typically located at the lid margin in an external hordeolum, or somewhat more diffuse, pointing towards the tarsal conjunctiva, in an internal hordeolum.
- Patients might describe eye pain, but on further and more detailed questioning complain of pain in the eyelid only. Pain involving the globe, especially with movement of the eye, should raise the concern for orbital cellulitis.

pustule at eyelid margin (common)

- On examination, patients with an external hordeolum typically have an easily identifiable pustule at the eyelid margin. Lack of a pustule at the margin with a painful lid should prompt the clinician to consider an internal hordeolum or chalazion.

pustule at tarsal conjunctiva (common)

- In contrast to an external hordeolum, patients with an internal hordeolum often have a pustule that is easily identifiable by everting the eyelid. The process for an internal hordeolum differs from an external hordeolum in that it involves the meibomian gland, which sits deeper in the tarsal plate.

palpable non-tender nodule (common)

- A chalazion has a well-defined, 2-8 mm diameter subcutaneous nodule in the tarsal plate.[6] This nodule is non-tender without associated pain or erythema.

lack of constitutional symptoms (common)

- Patients lack any constitutional or systemic symptoms, as the formation of styes and chalazia are localised processes.

lack of eye pain (common)

- Patients might describe eye pain, but on further and more detailed questioning complain of pain in the eyelid only. Pain involving the globe, especially with movement of the eye, should raise the concern for orbital cellulitis.

lack of intra-ocular pathology (common)

- The clinician may find minor conjunctival injection secondary to mechanical irritation or patient manipulation of the eye. However, careful examination should reveal no other pathology of the globe itself. Other findings within the eye or pain with range of motion of the eye should prompt the clinician to consider other diagnoses.

Other diagnostic factors

chronic swelling of eyelid (common)

- With more chronic lid swelling, the clinician must consider a chalazion. Patients often have a non-tender, palpable nodule away from the lid margin.

age 30-50 years (common)

- Adults are more likely to have hordeola and chalazia. Blepharitis and rosacea are more common in adults and are associated with hordeola. Increased viscosity of sebum in adults has been theorised to increase risk of chalazia.

history of blepharitis and ocular rosacea (uncommon)

- Both of these conditions create inflammation at the eyelid margin, which might potentially create mechanical obstruction of glands and a predisposition to infection.[8]

astigmatism and blurred vision (uncommon)

- In chalazia, sometimes induced astigmatism (typically against the rule or oblique) can cause blurred vision. Induced astigmatism or hyperopia may cause change in refraction (particularly if large or in children). Large or multiple chalazia involving the whole upper eyelid carry the greatest risk of inducing a change in corneal topography. Large chalazia may also obscure vision or impact on eyelid closure.[6]

Risk factors

Weak

age 30-50 years

- Incidence in children is generally lower than in adults. Higher viscosity of sebum, a higher incidence of meibomian gland dysfunction, and higher incidence of rosacea in adults has been theorised to account for this difference.

blepharitis and ocular rosacea

- Chronic inflammation at the eyelid margin probably results in a higher incidence of styes (hordeola) due to mechanical factors. Obstruction of ducts that drain meibomian and ciliary glands might lead to higher incidence of stasis and bacterial colonisation, which leads to hordeolum formation. Blockage of sebaceous drainage might also lead to increased incidence of chalazia.[2] [4][6] [7] [8]

seborrhoeic dermatitis

- Alterations of sebum composition and deposition might lead to increased levels of stasis and ultimately increased rates of meibomian gland dysfunction and chalazia.[6] [8]

elevated serum cholesterol

- High levels of serum cholesterol may increase the risk of blockage to sebaceous glands of the eyelids, predisposing to styes and chalazia.[9]

diabetes mellitus

- Diabetes mellitus may be a risk factor for styes and chalazia.[6] However, one large study found no association between diabetes mellitus, glycaemic control, and stye or chalazion development.[10]

poor eyelid hygiene

- Factors contributing to stye and chalazia include poor hygiene and contact lens care.[2]

ethnic origin

- Hispanic, American Indian, and Asian people have higher rates of chalazia than other ethnic/ancestral groups. However, the increased risk of developing chalazia was not associated with an increase in the percentage of chalazia requiring surgery.[11]

tuberculosis

- Although rare, extrapulmonary tuberculosis can affect the eye and surrounding orbital tissues. Eyelid tuberculosis may present as chronic blepharitis or recurrent chalazia.[12]

Investigations

1st test to order

Test	Result
clinical diagnosis • Usually no tests are necessary.	**features of stye or chalazion**

Other tests to consider

Test	Result
biopsy • In patients with ulceration and destructive changes of the eyelid margin and in patients with chronic or recurrent chalazion.[7] [8] [14]	**chronic inflammation; no evidence of malignancy**
CT scan of face and orbits • Not useful in diagnosing styes or chalazia. However, if there is a question of dacryoadenitis (infection or inflammation of the lacrimal gland) or dacryocystitis (infection of the lacrimal sac), CT scanning may be appropriate to confirm the diagnosis and exclude other, more serious pathology such as orbital cellulitis. Such patients usually have more diffuse swelling, oedema, and erythema of the lid and peri-orbital region.[13]	**no significant findings in stye or chalazion; evidence of lacrimal involvement in dacryoadenitis or dacryocystitis, or peri-orbital or orbital cellulitis**

Differentials

Condition	Differentiating signs / symptoms	Differentiating tests
Blepharitis	• Usually affects the whole eyelid rather than a discrete nodule. • History generally reveals bilateral ocular burning, itching, foreign body sensation, photophobia, crusting on the eyelids, and redness of lid margins. In severe cases, corneal changes can occur, leading to reduced vision. • With associated dry eye syndrome, patients may report sensation of eye dryness. • With associated rosacea, facial erythema, facial telangiectasia, papules, and pustules are seen. • With associated seborrhoeic dermatitis, flaking and greasy skin on the scalp, retro-auricular area, glabella, and nasolabial folds is typical. • Chalazia may be associated with underlying blepharitis.	• Slit lamp examination is required to confirm the diagnosis and exclude other causes. • In atypical unilateral cases, lid biopsy may be warranted to exclude other disorders, in particular malignancies such as basal cell, squamous cell, or sebaceous cell carcinoma.
Dacryocystitis	• There is obstruction and bacterial infection of the lacrimal sac; easily identifiable on examination as a very tender, swollen, and fluctuant mass below the medial epicanthus. • More common in children, typically preceded by a viral upper respiratory tract infection, and commonly associated with constitutional symptoms. • Palpation of the sac may express pus from the lacrimal puncta.	• If suspected, CT scanning of the face and orbits may be useful to identify inflammation of the lacrimal system and to exclude orbital cellulitis.
Dacryoadenitis	• An infection of the lacrimal gland caused by viruses or bacteria; patients usually complain of constitutional symptoms.	• If suspected, CT scanning of the face and orbits may be useful to identify inflammation of the lacrimal gland and to exclude orbital cellulitis.

Condition	Differentiating signs / symptoms	Differentiating tests
	• Typically presents with pain and swelling at the lateral border of the superior lid, with tearing and discharge from the eye.	
Peri-orbital cellulitis	• Typically results from secondary bacterial infections as a result of local skin trauma, spread from impetigo, or extension from sinusitis. Sometimes associated with fever. Patients have more diffuse swelling, oedema, and erythema of the lid and peri-orbital region.	• CT scanning of the face or orbits may be useful to exclude orbital cellulitis.
Orbital cellulitis	• Often initially presents with signs and symptoms of peri-orbital cellulitis. • Additionally patients complain of eye pain with movement, decreased vision, fever, and headache. • On examination they may display marked chemosis with proptosis and elevations of intra-ocular pressure.	• CT scanning is typically performed to identify extension of disease and exclude the potential of abscess formation.
Basal, sebaceous and squamous cell carcinoma	• Might be suspected in older patients with lesions of the eyelids that persist.	• For suspicious lesions, biopsy to exclude carcinoma is warranted.

Approach

Styes (hordeola) are typically self-limited and resolve spontaneously in 5-7 days. Warm compresses and topical antibiotic therapy help to speed recovery and prevent the spread of infection.[2] [4] Chalazia, due to their more chronic inflammatory nature, may take longer to resolve (up to 6 months).[6]

Stye

Both internal and external hordeola are treated similarly. Hot spoon bathing and/or warm compresses applied to the eyelid may help speed spontaneous resolution and drainage.[2] [4] For external hordeola, lash removal from the associated follicle may help. If there is associated blepharitis eyelid hygiene measures are required.[2] See Blepharitis (Management) .

Topical antibiotics that are effective against *Staphylococcus aureus* are recommended in the presence of copious muco-purulent discharge.[2] Systemic antibiotics are rarely indicated unless there is a significant surrounding cellulitis. An oral first-generation cephalosporin or amoxicillin/clavulanate may be indicated.[1] [2] [13]

One Cochrane review found there was no evidence of the effectiveness of non-surgical interventions (topical or systemic antibiotics, hot or cold compresses, lid scrubs, corticosteroids) for internal hordeola.[15] One retrospective study of 2712 patients with hordeola or chalazia found that the addition of antibiotics to conservative measures did not improve treatment success.[16]

For very large hordeola that distort vision, or for those that are refractory to medical therapy, referral to an ophthalmologist or optometrist for incision and drainage is appropriate.[1] [2][13] The American Academy of Ophthalmology supports the prompt and appropriate referral of individuals to an ophthalmologist when they present with visual impairment, including that due to inflammation of the lids, with or without discharge.[17]

Chalazia

Most chalazia respond (within 6 months) to conservative treatment of warm compresses and proper lid hygiene (for blepharitis), which includes washing the affected eyelid with drops of baby shampoo.[4] [6] [8][18] Early treatment may lead to faster resolution.[7] Keeping the eyelids free of discharge, pus, or crusting also helps to improve the condition. Chalazia are non-infectious; antibiotics are not necessary.[1] [7] [13] [16][18]

Referral to an ophthalmologist may be recommended for recurrent, large, or refractory chalazia (interfering with vision function, causing corneal distortion, or affecting eyelid function). Consider early referral for young children with large chalazion due to risk of amblyopia.[7] Persistent chalazia may require more invasive therapies, for example, corticosteroid injection (e.g., triamcinolone) or incision and curettage.[3] [6] [18] Invasive therapies are more likely to be needed for chalazia of over 2 months duration.[4] [18] Corticosteroid injection or incision and curettage should be carried out by an ophthalmologist or an appropriately trained optometrist in a suitable clinical setting.[6] Both options are about the same in terms of recurrence rates and generally better than warm compresses and massage.[3] [19] [20] [21][22] [23] A biopsy may be needed to rule out malignancy (e.g., sebaceous cell carcinoma).[7] [8] [14]

Treatment algorithm overview

Please note that formulations/routes and doses may differ between drug names and brands, drug formularies, or locations. Treatment recommendations are specific to patient groups: see disclaimer

Acute (summary)		
stye		
	1st	warm compresses + massage ± lid hygiene
	adjunct	topical ophthalmic antibiotic
■ significant surrounding cellulitis	plus	oral antibiotic therapy
■ distorted vision or refractory to medical therapy	plus	referral to ophthalmologist/optometrist for incision and drainage
chalazion		
	1st	warm compresses + massage + lid hygiene
■ large, recurrent or refractory	plus	referral to ophthalmologist/optometrist for corticosteroid injection or incision and curettage

Treatment algorithm

Please note that formulations/routes and doses may differ between drug names and brands, drug formularies, or locations. Treatment recommendations are specific to patient groups: see disclaimer

Acute

stye

1st — **warm compresses + massage ± lid hygiene**

» Warm compresses may be created by soaking a cloth towel in hot water and then applied with gentle pressure onto the closed eyelid. They may be applied 4-5 times per day for 10-15 minutes and may be accompanied by gentle massage of the area.[1] [2][13] However, one Cochrane review found there was no evidence of effectiveness of non-surgical interventions, including hot or cold compresses and lid scrubs, for internal hordeola.[15]

» If there is associated blepharitis eyelid hygiene measures are required.[2] See Blepharitis (Management) .

adjunct — **topical ophthalmic antibiotic**

Treatment recommended for SOME patients in selected patient group

Primary options

» erythromycin ophthalmic: (0.5%) apply to affected eye(s) up to six times daily

» Topical antibiotics that are effective against *Staphylococcus aureus* (e.g., erythromycin) are recommended in the presence of copious muco-purulent discharge.[2]

» One Cochrane review found there was no evidence of the effectiveness of non-surgical interventions, including topical antibiotics, for internal hordeola.[15] One retrospective study of 2712 patients with hordeola or chalazia found that the addition of antibiotics to conservative measures did not improve treatment success.[16]

significant surrounding cellulitis — **plus** — **oral antibiotic therapy**

Treatment recommended for ALL patients in selected patient group

Primary options

» cefalexin: 250-500 mg orally every 6-12 hours

OR

Acute

» amoxicillin/clavulanate: 500 mg orally every 8 hours

» An oral first-generation cephalosporin or amoxicillin/clavulanate may be indicated.[1][2] [13]

distorted vision or refractory to medical therapy — **plus** — **referral to ophthalmologist/optometrist for incision and drainage**

Treatment recommended for ALL patients in selected patient group

» For very large hordeola that distort vision, or for those that are refractory to medical therapy, referral to an ophthalmologist or optometrist for incision and drainage is appropriate.[1] [2] [13] [17]

chalazion

chalazion — **1st** — **warm compresses + massage + lid hygiene**

» Most chalazia respond (within 6 months) to conservative treatment of warm compresses and proper lid hygiene, which includes washing the affected eyelid with drops of baby shampoo.[4] [6] [8][18] Early treatment may lead to faster resolution.[7] Keeping the eyelids free of discharge, pus, or crusting also helps to improve the condition. Chalazia are non-infectious; antibiotics are not necessary.[1][7][13] [16][18]

» Warm compresses with gentle massage may be placed over the involved area 4-5 times per day for approximately 10-15 minutes. This aids in resolving any ductal obstruction in the longer meibomian glands and helps to drain sebum.

large, recurrent or refractory — **plus** — **referral to ophthalmologist/optometrist for corticosteroid injection or incision and curettage**

Treatment recommended for ALL patients in selected patient group

» For recurrent, large, or refractory chalazia, referral to an ophthalmologist or appropriately trained optometrist may be required for corticosteroid injection or incision and curettage and undertaken in a suitable clinical setting.[3] [6] [18] Consider early referral for young children with large chalazion due to risk of amblyopia.[7] One study found invasive therapies are more likely to be needed for chalazia of over 2 months duration.[18] Corticosteroid injection and incision and curettage have similar recurrence rates and both are generally better than warm compresses and massage.[3][19] [20] [21] [22][23]

Acute

» For recurrent or refractory chalazia a biopsy may be needed to rule out malignancy.[7] [8] [14]

Emerging

Acupuncture

Acupuncture has been studied for the treatment of acute hordeola. One Cochrane review found low-certainty evidence that acupuncture with or without conventional treatments may provide short-term benefits for treating acute hordeola when compared with conventional treatments alone.[24]

Microblepharoexfoliation

Microblepharoexfoliation (MBE) is under study as a non-invasive adjunctive treatment for chalazia. MBE treatment plus lid hygiene demonstrated a statistically significant resolution of chalazion compared with lid hygiene alone.[25]

Optimised pulse technology

One prospective before-after study of 23 patients with chalazia who received two sessions of optimised pulse technology (OPT) with a 1-week interval, reported that OPT treatment reduced the size of chalazia in 91.3% of patients and significantly increased the meibomian gland area.[26]

Primary prevention

Strategies to prevent styes and chalazia include good hygiene (e.g., hand and face washing, make-up hygiene, contact lens care). Recurrence can be reduced by treatment of associated conditions (e.g., blepharitis, ocular rosacea, elevated serum cholesterol). Patients prone to seborrhoea may use anti-dandruff shampoos on the eyelids to help prevent ductal blockages.

Patient discussions

Patients should be advised to keep the eyelids free of discharge, pus, or crusting to help improve the condition and prevent recurrence. Other measures include washing their hands before touching around the eyes or removing contact lenses; not sharing eye make-up; washing their face and fully removing any eye make-up at bedtime; and replacing eye make-up every 3 months.

For patients with seborrhoeic dermatitis, washing the eyelashes with anti-dandruff shampoo may help. Patients diagnosed with blepharitis should be advised to maintain eyelid hygiene measures indefinitely to prevent exacerbations. See Blepharitis (Patient discussions) .

Warn patients not to squeeze a stye or chalazion to try and drain it as it will not help resolve it and could lead to complications.

Advise patients that in the future if they develop eyelid pain and/or swelling they should apply warm compresses promptly, as their symptoms may resolve without the need of medical review or further treatment.

Patients with chalazion should be advised to seek medical help if it recurs or persists.

Useful patient information is available at the following websites: American Academy of Ophthalmology, American Optometric Association, and Patient UK.[30] [31] [32] [33] [34]

Monitoring

Monitoring

For uncomplicated styes or chalazia that resolve with appropriate treatment, no follow-up is necessary. For lesions that persist or recur, especially chalazia, ophthalmological follow-up is appropriate. Chronic chalazia may require corticosteroid injections or, ultimately, excision. Additionally, suspicious or chronic lesions may be biopsied to exclude carcinoma.

Complications

Complications	Timeframe	Likelihood
chalazion (from stye)	**short term**	**medium**
Acute stye can impede normal drainage of sebum from meibomian glands, resulting in chalazion formation.		
peri-orbital and orbital cellulitis	**short term**	**low**
An untreated stye may progress to a more generalised cellulitis of the eyelid. If allowed to progress, it may result in peri-orbital and, rarely, orbital cellulitis. Any progression beyond a very localised pustule or nodule should be monitored closely for cellulitis, which might require oral or intravenous antibiotics.[13]		
cosmetic deformity	**variable**	**low**
Complications of acute styes are rare but do include disruption of eyelash growth, deformities, and fistulas of the eyelid. Chalazia, given their more chronic nature, are more likely to result in chronic skin changes overlying the inflammatory reaction.		
visual disturbance	**variable**	**low**
Large lesions of the upper eyelid have been reported to cause corneal surface aberrations and visual changes by inducing astigmatism. Excision of large lesions should be considered.[27][28][29]		

Prognosis

Patient outlook is generally good for both styes (hordeola) and chalazia when properly treated. Chalazia may require a longer time to resolve.

FOLLOW UP

Stye

Once treated, almost all styes (hordeola) resolve within 5-7 days without cosmetic sequelae. If treatment is started early, symptoms and swelling may last only 1-2 days. More advanced cases may require up to a week to resolve. Cases may recur and patients should be taught to recognise and promptly treat the condition with warm compresses.[1] [2][13]

Chalazion

Due to their more chronic nature, chalazia may take several weeks, and up to 6 months, to resolve. While > 50% resolve spontaneously, they are somewhat more refractory to treatment than hordeola. Many chalazia recur, although the exact rate is unknown.[6]

Diagnostic guidelines

United Kingdom

Clinical management guidelines: chalazion (meibomian cyst) (https://www.college-optometrists.org/clinical-guidance/clinical-management-guidelines)

Published by: The College of Optometrists **Last published:** 2023

Clinical management guidelines: hordeolum (stye) (https://www.college-optometrists.org/clinical-guidance/clinical-management-guidelines)

Published by: The College of Optometrists **Last published:** 2023

Treatment guidelines

United Kingdom

Clinical management guidelines: chalazion (meibomian cyst) (https://www.college-optometrists.org/clinical-guidance/clinical-management-guidelines)

Published by: The College of Optometrists **Last published:** 2023

Clinical management guidelines: hordeolum (stye) (https://www.college-optometrists.org/clinical-guidance/clinical-management-guidelines)

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Images

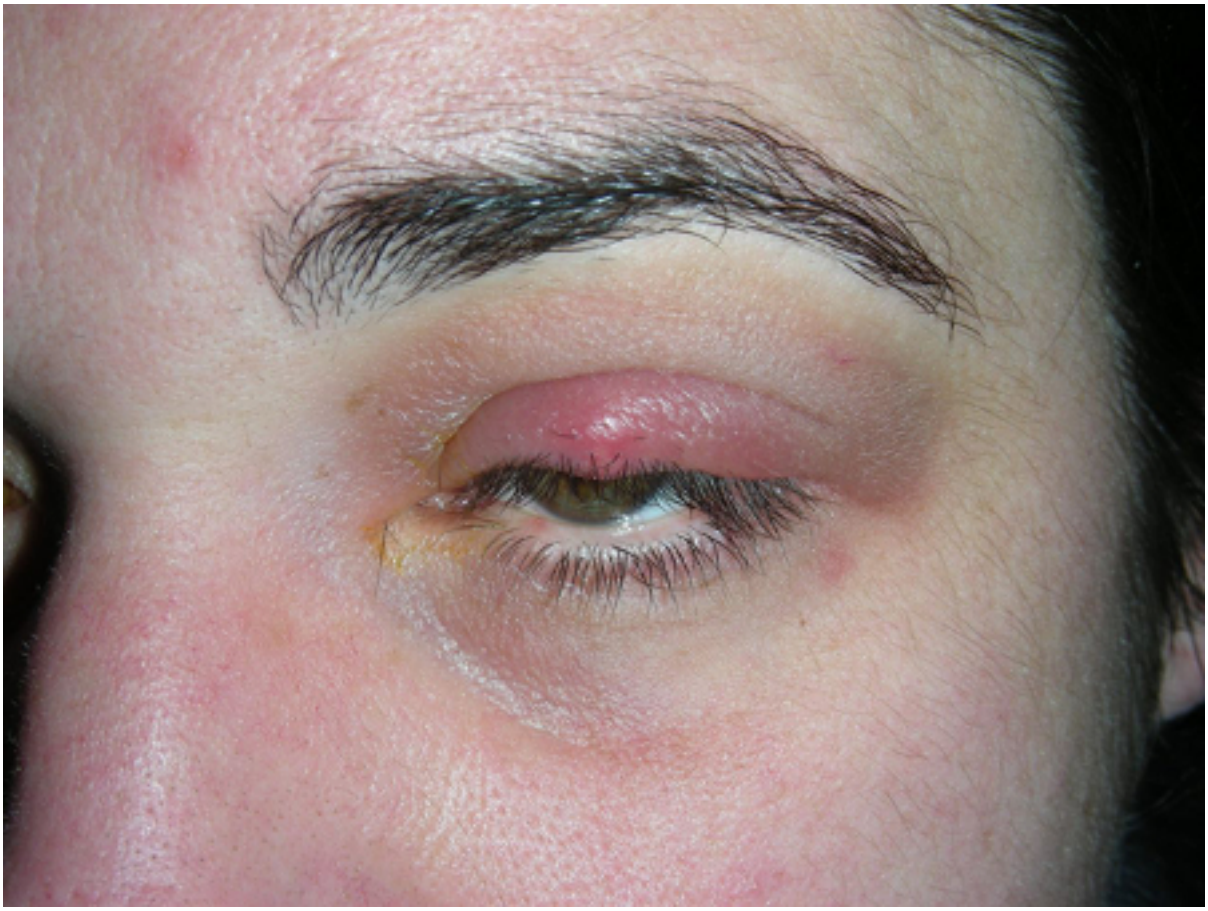

Figure 1: Left upper lid internal hordeolum with limited cellulitis

Gupta A, Stacey S, Amissah-Arthur KN. Eyelid lumps and lesions. BMJ. 2014;348:g3029.

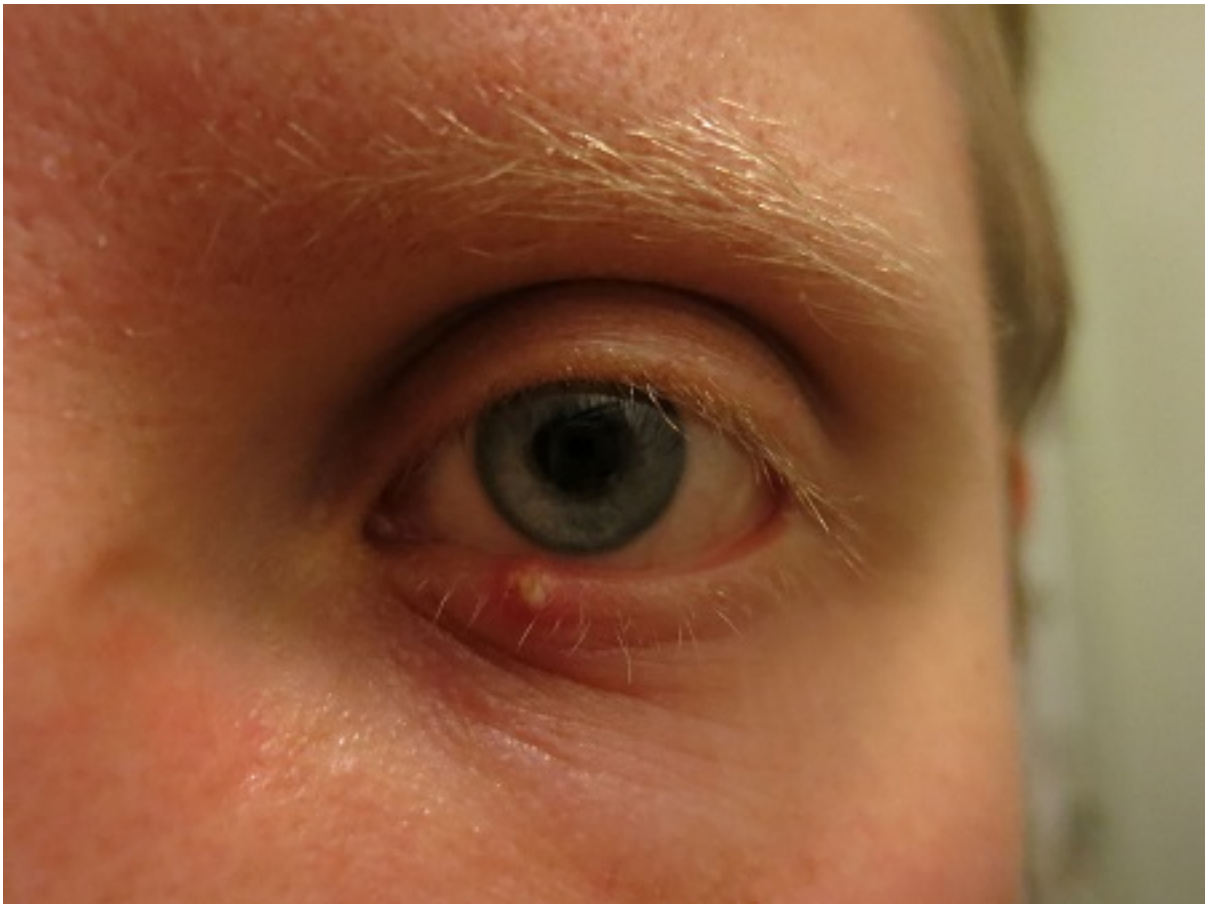

Figure 2: Left lower lid external hordeolum

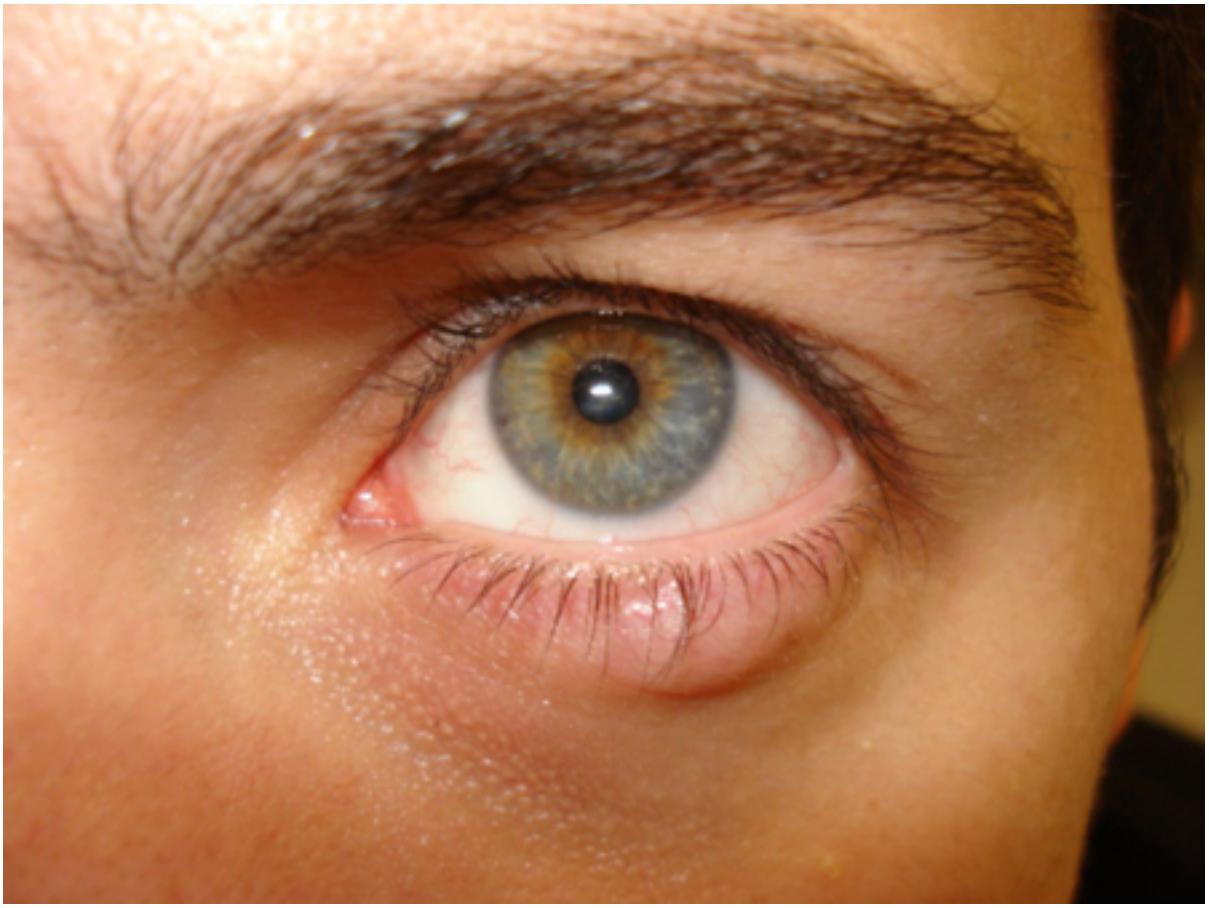

Figure 3: Lower lid chalazion of the left eye

Gupta A, Stacey S, Amissah-Arthur KN. Eyelid lumps and lesions. BMJ. 2014;348:g3029.

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Figure 1 – BMJ Best Practice Numeral Style

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numerals < 1: 0.25

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