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Periocular Lesions, Part One:

Inflammatory Lesions—Hordeola and Chalazia

Jonel Lindsey Gomez

ABSTRACT: The evaluation and management of periocular lesions is often a daunting task for the healthcare provider primarily because of the proximity to the eye(s). For those working outside of the field of ophthalmology, lesions present within the ocular adnexa are often ignored, misdiagnosed, or mistreated because of minimal training in this specialty area. This article represents the first in a series of four articles focusing on proper identification, evaluation, and management of common periocular lesions. The commencement of this series will focus on common inflammatory lesions and, more specifically, on hordeola and chalazia.

Key words: Chalazia, Chalazion, Hordeola, Inflammatory, Periocular Lesions, Stye

The evaluation and management of periocular lesions is often a daunting task for the healthcare provider primarily because of the proximity to the eye(s). For those working outside of the field of ophthalmology, lesions present within the ocular adnexa are often ignored, misdiagnosed, or mistreated because of minimal training in this specialty area. Although referral to a specialist is advised and warranted in many cases, dermatologists and primary care providers should feel empowered to recognize these lesions and provide proper treatment or referral as necessary, as failure to do so can have grave implications such as vision loss or disfigurement of periocular tissues. This article represents the first in a series of four articles focusing on proper identification, evaluation, and management of periocular lesions. For this series, periocular lesions will be categorized into four distinct areas: inflammatory, infectious, benign, and malignant lesions. The commencement of this series will focus on common inflammatory lesions and, more specifically, on hordeola and chalazia.

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Pathophysiological Considerations

Within the eyelid are two different types of glands, the meibomian glands and the ciliary glands. The meibomian glands are sebaceous glands housed within the tarsal plate of the eyelid. The tarsal plate provides structural support to the eyelid and is located inferior to the hair follicle. These glands secrete meibum, which is an oily substance that provides a lipid base to tear film. This lipid base is very important in helping to decrease the evaporation of tears by stabilizing tear film (Knop, Knop, Millar, Obata, & Sullivan, 2011). In addition, there are two types of ciliary glands within the eyelid, the glands of Zeis and the glands of Moll. The glands of Zeis are sebaceous glands located in the margin of the eyelid, and the glands of Moll are sudoriferous glands located at the base of the eyelashes. These glands of Zeis also secrete a lipid substance that supports the tear film, but compared with the meibomian glands, the contribution is minimal (Knop et al., 2011). When the meibomian glands or glands of Zeis become obstructed, the result is a hordeolum or chalazion. What differentiates the two entities is that a hordeolum represents the acute process of the blocked gland(s), which may be infectious, and a chalazion represents the granulomatous changes that occur because of a chronic hordeolum (American Academy of Ophthalmology [AAO], 2009). In cases where hordeola are infected by bacteria, it is usually by *Staphylococcus aureus* (Wilson, 1996). Although there is a paucity of literature addressing virally

TABLE 1. Signs and Symptoms: Differentiating Between Hordeola and Chalazia

	Origin	Onset	Presentation	Pyogenic	Erythema	Pain	ICD-9
Hordeolum	Zeis or Meibomian glands	Acute	Internal or external lid margin, often near hair follicle; localized or diffuse swelling; pustule may be present	Maybe	Yes	Yes	373.11 373.12
Chalazion	Zeis or Meibomian glands	Insidious	Round, firm	No	No	No	373.20

Abbreviation: ICD = International Classification of Diseases.

induced chalazia, some evidence exists that chalazia are less commonly associated with a viral conjunctivitis, without the presence of meibomian gland dysfunction or blepharitis (Mansour et al., 2006).

Risk Factors

Patients with a history of chronic eyelid inflammation secondary to blepharitis or rosacea are prone to recurrent hordeola and chalazia (Nemet, Vinker, & Kaiserman, 2011). Additional risk factors include poor eyelid hygiene, hormones, and stress (Geerling et al., 2011).

Prevention

Patients that are prone to recurrent hordeola and chalazia, such as those with chronic blepharitis or ocular rosacea, should adopt a regular routine of lid hygiene as studies show that this greatly reduces the incidence (Geerling et al., 2011). The standard protocol for lid hygiene includes the following:

- Warm compresses twice daily for at least 5 minutes at each application
- Daily cleansing of the eyelid margin with lid scrubs or baby shampoo
- Supplementation with Omega 3s has been shown to improve the oils in the meibomian glands and improve tear film

Clinical Presentation

Patients often present with a vague complaint of eyelid pain. Other common complaints include blurry vision, sticky or crusty discharge on the eyelids, restricted eye movement, diffuse swelling, droopy eyelid, and a mass or lump in the eyelid. Often, a preliminary diagnosis can be made by differentiating the signs and symptoms delineated in Table 1. Always consider orbital cellulitis in your differential diagnosis as this is considered an ophthalmologic emergency. Should there be any signs of orbital involvement (afferent pupillary defect, proptosis, or extraocular motility restriction), immediate referral is warranted (Nemet et al., 2011).

Refer to Figure 1 and Figure 2, which highlight the differences in the clinical presentation of hordeola versus chalazia.

Differential Diagnosis

Although a diagnosis of hordeola or chalazia based on examination is often straightforward, it is important to consider some of the following in the differential diagnosis:

Skin cancer (basal, squamous, melanoma)
Sebaceous cell carcinoma
Eyelid abscess
Preseptal or orbital cellulitis
Orbital mucocele

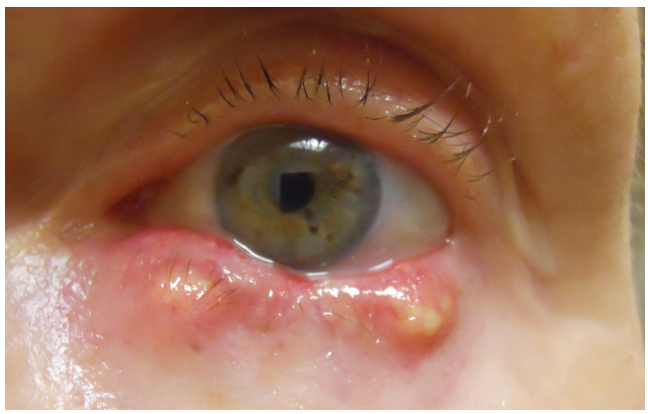

FIGURE 1. 62-year-old woman with multiple lower eyelid hordeola present for 5 days.

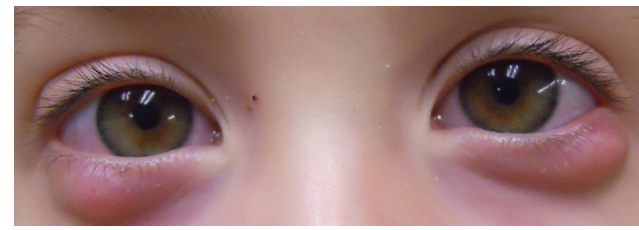

FIGURE 2. 3-year-old girl with bilateral lower eyelid chalazia present for 6 weeks.

Dacryocystitis
Job's syndrome (Paterri, Serru, Chessa, Loi, & Pinna, 2009)

When unsure, it is always a good idea to take a biopsy and send a specimen for pathology. Eyelid margin skin cancers are often misdiagnosed as chalazia, significantly delaying proper treatment (AAO, 2009).

PHYSICAL EXAMINATION

The first step in evaluating your patient should be a visual acuity examination and a confrontation visual field. This will help you determine whether the lesion is causing alterations in vision or a visual field loss. The most common method for checking visual acuity is the Snellen visual acuity chart (Wilson, 1996). Next, rule out any orbital signs by checking pupillary reaction, evaluating extraocular movements (cardinal gazes), and observing for proptosis.

Many hordeola and chalazia are clearly visible to the examiner without resorting to invasive examination techniques. However, if the lesion is located on the internal surface of the upper eyelid or more posterior in the eyelid, you may need to evert the eyelid for proper examination. Employ this stepwise approach for proper upper eyelid eversion (Colyar & Ehrhardt, 2004):

Step 1: If available, instill an ophthalmic anesthetic drop to the affected eye.

Step 2: Ask the patient to look down.

Step 3: With one hand, hold the patient's eyelashes between your thumb and index finger. In the other hand, take a cotton-tipped applicator and hold it horizontally at the level of the upper eyelid crease (as shown in Figure 3).

Step 4: Gently pull the lid margin to evert it over the cotton applicator (as shown in Figure 4).

If you have any suspicion that there might be a foreign body under the eyelid, do not evert the lid as you risk causing damage to the fragile surface of the eye. Consider that,

FIGURE 3. Eyelid eversion step 3.

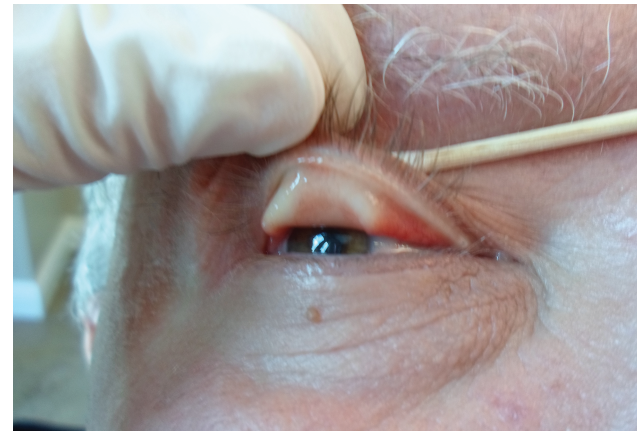

FIGURE 4. Eyelid eversion step 4.

for large lesions or if a patient has diffuse erythema, swelling, and pain, it may be too uncomfortable for the patient to tolerate an eyelid eversion. Lower eyelid lesions can usually be directly visualized with gentle retraction of the lower eyelid.

TREATMENT

Treatment of hordeola and chalazia varies from patient-administered warm compresses and meticulous lid hygiene to surgical excision by a specialist. The literature supports that nearly 15%–20% of periocular lesions are malignant in nature, and as such, histopathological confirmation of the lesion(s) is recommended in nearly every case. For hordeola and chalazia that are unresponsive to initial conservative therapy, a biopsy should be performed. Sebaceous cell carcinoma, an aggressive malignancy of the sebaceous glands, may masquerade as a chalazion and should be ruled out in cases where hordeola or chalazia do not respond to treatment or recur (Bernardini, 2006).

Warm Compresses and Massage

The gold standard of treatment for an acute hordeola is the combination of warm compresses and gentle massage of the lesion (Geerling et al., 2011). Often, if caught early, this approach will help loosen the clogged oils in the gland and permit drainage of the lesion.

Macrolide Eye Drops

The benefit of considering the use of a macrolide antibiotic eye drop when treating hordeola or chalazia is that this class of antibiotic drops offers not only bacteriostatic coverage but has the added benefit of anti-inflammatory action on the meibomian glands (Geerling et al., 2011). More studies are needed to further explore the benefit of macrolide eye drops for this purpose, but preliminary data are promising and anecdotal support is high. Consider using Azithromycin 1% solution for external hordeola, dosing is one drop to affected eye BID for 2 days and

then one drop daily for an additional 5 days. Internal hordeola or chalazia do not respond well to topical antibiotic drops as the penetration is poor (AAO, 2009).

Tetracyclines

Systemic tetracyclines have both bacteriostatic and bacteriocidal properties. In addition, studies have shown that they have an effect on inhibiting lipase activity and anti-inflammatory properties. This trifecta of action lays the perfect foundation for treating both internal and external hordeola (Geerling et al., 2011; Knop et al., 2011).

Incision and Curettage

Because a chalazion is a sterile granulomatous lesion, antibiotics are seldom an effective part of their treatment. Incision and curettage is the most common approach to these lesions. If the chalazion has expanded through the tarsal plate and has externalized, consider an external approach. However, if the chalazion is internal, this may require everting the eyelid and the use of a chalazion clamp to provide adequate visualization and access (AAO, 2009). Consider referring these lesions for incision and curettage as appropriate. Improper technique may result in trauma to the lid margin and subsequent notching of that margin, which is aesthetically displeasing.

Steroid Injections

Multiple studies (Ben Simon et al., 2005; Ben Simon, Rosen, Rosner, & Spierer, 2011) have supported the use of intralesional steroid injection, specifically triamcinolone acetonide injection for the primary treatment of uncomplicated chalazia. Chalazia in which a viral etiology is suspected should not be treated with intralesional steroids as this may cause an exacerbation (Mansour et al., 2006). Intralesional steroid injections around the periorbita should be attempted only by specialists as there is a risk of precipitates from the injection causing visual loss, increased ocular pressure, or eyelid depigmentation (Ben Simon et al., 2005).

DISCUSSION

Identification and proper diagnosis of hordeola and chalazia are essential to develop the appropriate treatment plan. Ruling out more serious conditions is a vital part of this process. Always consider the importance of histological confirmation in the presence of a lesion that is not responding as expected to your treatment plan, and when in doubt, do not hesitate to consult with or refer the patient to a specialist for further evaluation and management. ■

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