

# Chalazion Management: Evidence and Questions

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**I**t is exceedingly rare to find medical treatments that have passed the test of time, especially in the highly innovative, scientifically advanced milieu of ophthalmology and oculoplastics. However, there are some long-standing approaches to the management of chalazia. For example, the Victorian hot spoon bathing treatment<sup>1</sup> is still widely practiced, and the design of the chalazion forceps shown in the 1847 edition of L.A. Demarres' *Traité théorique et pratique des maladies des yeux* remains in use today (Fig. 1).

Despite this history and the abundance of anecdotal evidence regarding the management of chalazia, there is a lack of consensus guidelines based on peer-reviewed literature and evidence. Here, we provide an overview of the condition and review several treatment approaches, in terms of what is currently known and what questions remain.

## Pathology

Chalazia are the most common inflammatory lesion of the eyelid, accounting for 13.4% of all benign lid lesions. Chalazia form when lipid breakdown by-products, possibly from bacterial enzymes or retained meibomian secretions, leak into the surrounding tarsal plate stroma and incite a granulomatous inflammatory response. The histopathology of this response is initially characterized by the presence of neutrophils and, later, by lymphocytes, plasma cells, mac-

rophages, mononuclear cells, eosinophils, and multinucleated giant cells. The lesion is usually sterile.

## Presentation

Chalazia have a fairly consistent presentation: a usually painless lump or swelling on either the upper or lower eyelid. The condition may be unilateral or bilateral and may involve a single or multiple lesions (Fig. 2). There may have been an acute period of painful swelling preceding the appearance of the lump.

## Causes of Chalazia

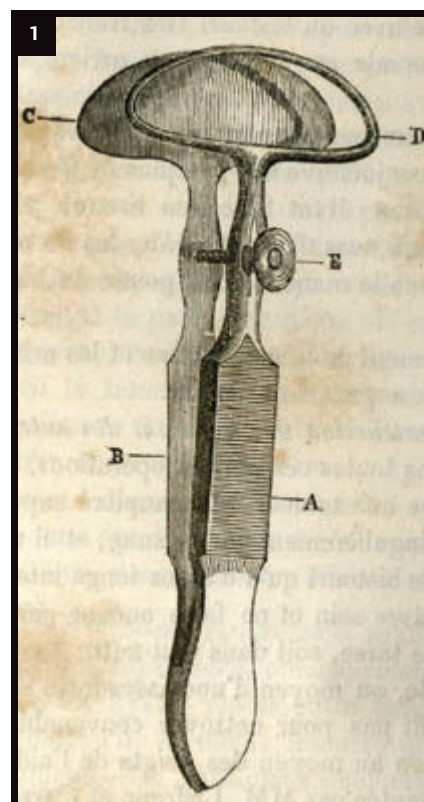
Chalazia can be associated with various underlying causes, and management should be tailored according to the etiology.

**Inflammatory.** In the majority of cases of chalazia, inflammatory conditions such as seborrheic dermatitis, acne rosacea, and chronic blepharitis are present.

**Viral infection.** Chalazia may be associated with viral conjunctivitis, so patients should be carefully examined for diffuse follicular conjunctivitis. Additionally, preauricular lymph nodes should be palpated, and the patient should be questioned regarding previous ocular viral disease. If a viral etiology is suspected, the use of intralesional corticosteroids should be avoided.

## Atypical Chalazia

Lesions that recur in the same location, are refractory to treatment, or are atypical in appearance or natural



**CLASSIC TOOL.** (1) The Desmarres chalazion forceps, 1847.

history should alert the ophthalmologist to the possibility of a more serious condition.

**Neoplasms.** Biopsy and microscopic analysis are needed to rule out neoplasms masquerading as chalazia, especially in the elderly. These include sebaceous gland carcinoma, basal cell carcinoma, squamous cell carcinoma, or Merkel cell carcinoma, which can be life threatening and require urgent oculoplastics referral.



**PRESENTATION AND SURGERY.** (2) Patient with multiple bilateral chalazia. (3) Eyelid is everted and clamped for incision and curettage.

**Infectious masses.** Leishmaniasis or tuberculosis masses can interfere with meibomian gland drainage. In suspicious cases, it is important to ask about the patient's travel history (particularly to regions where these conditions are endemic), immune status, and exposure to or a history of TB.

Constitutional symptoms, distant lymphadenopathy, ocular pain, and limitation in ocular motility should be noted, as these should not be present in chalazia.

**Immune disorders.** Recurrent multiple giant chalazia may occur as an ophthalmic feature of the hyper-IgE syndrome.

Immunodeficient patients may present with localized eyelid nodules that may simulate chalazia, for example, Kaposi sarcoma in people with AIDS.

### Medical Management

**Conservative approach.** Conservative medical treatments include warm compresses (10 minutes 4 times daily), eyelid massage, lid scrubs, and mild topical steroids. Patients presenting to the clinic for the first time are usually given a trial period of such conservative management.

**Antibiotics.** Although antibiotics are generally not indicated for chalazion, they may be appropriate when the condition is associated with severe blepharitis or blepharitis associated with rosacea. A course of oral tetracycline may be considered (for example, doxycycline 50-100 mg once daily or lymecycline 408 mg once daily for at least 3 months). However, tetracyclines should be avoided in children and pregnant women because they can

affect tooth and bone development; erythromycin or azithromycin is a possible alternative for these patients.

### Surgical Management

Procedural interventions for chalazia include intralesional steroid injection and incision and curettage (I&C; Fig. 3).

A prospective randomized study by Goawalla and Lee<sup>2</sup> compared 3 methods of chalazion treatment: intralesional triamcinolone acetonide (TA) injections (0.2 mL of 10 mg/mL), I&C, and the use of hot compresses. They found that after 3 weeks, a single TA injection followed by lid massage resulted in chalazion resolution in 84% of patients, compared with 87% resolution in the I&C group; 46% of the hot compress group reported resolution at 3 weeks. Moreover, patients in the TA group reported experiencing less pain and inconvenience than I&C patients. The results were based on patients' self-reporting in a telephone survey, however, and it could be argued that the researchers did not rely on objective methods to evaluate resolution.

A more recent prospective randomized trial by Ben Simon and colleagues<sup>3</sup> was supportive of these results, finding that intralesional TA injection is as effective as I&C in primary chalazia: 81% of patients in the TA group and 79% in the I&C group achieved resolution after 1 treatment. This study used clinical evaluation and digital photography to assess resolution.

### Choosing the Surgical Intervention

There is no doubt that there is a place for both TA injections and I&C in the management of chalazia. Factors to

consider include the following.

**TA injections.** Intralesional steroid injections may be considered as an efficient, convenient, less-invasive, and less time-consuming first-line treatment for patients in whom the chalazion diagnosis is straightforward and no biopsy is required.

This treatment is also more suitable than I&C for patients who are allergic to local anesthesia and those who may have poor adherence to postoperative antibiotic therapy. It is especially useful for cases in which multiple lesions are involved or chalazia are adjacent to the puncta, which could be damaged by surgery.<sup>4</sup>

Possible complications of steroid injection include ocular penetration, IOP elevation, visual loss, subcutaneous fat atrophy, and skin depigmentation, especially in dark-skinned patients. However, these did not occur in the trials by Ben Simon and colleagues.<sup>3,4</sup>

There may also be a hypothetical risk of viral colonization of meibomian glands and potential future risk of the development of neoplasia. A high percentage of patients with sebaceous carcinoma of the eyelid are found to be infected with papilloma virus.<sup>5</sup>

**I&C.** Some types of chalazia are more amenable to I&C than to TA injection. These include liquid chalazia; cases of masquerade syndrome; virally induced chalazia; atypical chalazia; and those that have a purulent component.

Some cases of chalazia, such as those in patients with blepharitis, require multiple TA injections. Therefore, I&C would theoretically be more suitable for associated infected lesions.<sup>4</sup>

However, chronic chalazia, in our experience, may require repeated incisions due to their more solid, granulomatous nature and, thus, would be more suitable for TA injections.

**Combination therapy.** Large or multiloculated chalazia may respond best to a combination of I&C followed by intralesional steroid, injected while the chalazion clamp is still in situ. This limits steroid diffusion, allowing it to act effectively on any remaining granuloma.

### Does Diet Play a Role?

The role of diet in chalazia has long been studied, yet many questions remain. At this time, no dietary therapy has been demonstrated to be efficacious for chalazion.

**Vitamin A.** As far back as 1940, published studies from several countries have suggested a link between vitamin A and chalazia; and in 1968, Abboud et al. found that chalazial patients in every age and sex group had considerably lower blood serum vitamin A levels than the corresponding normal range.<sup>6</sup> They also observed a higher rate of chalazia among pregnant and lactating women.

In addition, they reported that parenteral administration of vitamin A in their chalazial patients improved the early cases and lowered recurrence rates.

More recently, Abboud's early research was supported by a study by Chen et al., conducted in southwest China.<sup>7</sup> They found that low serum vitamin A was associated with chalazion, in particular multiple chalazia in young children.

**Unanswered questions.** Is vitamin A supplementation more effective as a preventive or management strategy for chalazia? At what stage are chalazia more responsive to vitamin A therapy? Is there a dosage that is both safe and effective, as vitamin A can be toxic at high levels? Patients who are elderly, are alcoholic, or have liver disease are more susceptible to this toxicity.

**Anecdotal therapies.** Although a reduced cholesterol diet may affect meibomian gland dysfunction, no studies have proved a correlation between chalazion and serum cholesterol. Anecdotal evidence suggests that avoidance of dairy products and the dietary modification advice traditionally given to acne patients—avoiding caffeine, chocolate, and fried foods—may decrease the chance of developing chalazia.

Several other, as yet unsubstantiated, treatments for chalazion need to be fully studied, including a diet that includes soy milk, nuts, and omega-3 fish oil.

### Lifestyle Myths

Good sleep habits, regular exercise, and fresh air are often offered as advice to improve the health of skin and, consequently, of the meibomian glands. Even though stress is often anecdotally associated with episodes of recurrent chalazion, neither causality nor a possible mechanism has been established by medical research.

### Future Horizons

Despite the array of options for managing chalazia, the choice is not always clear and depends on the subset and the patient. In particular, there is a need for a method to judge chalazion consistency clinically in order to initiate suitable surgical treatment immediately. Further research is needed to provide a stronger evidence basis for the prevention and management of this very common eyelid lesion. ■

1 Chalazion. [www.guysandstthomas.nhs.uk/our-services/eye/patients/eye-patient-leaflets.aspx](http://www.guysandstthomas.nhs.uk/our-services/eye/patients/eye-patient-leaflets.aspx). Accessed July 10, 2015.

2 Goawalla A, Lee V. *Clin Experiment Ophthalmol*. 2007;35(8):706-712.

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4 Ben Simon GJ et al. *Ophthalmology*. 2005; 112(5):913-917.

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6 Abboud IA et al. *Exper Eye Res*. 1968;7(3): 383-387.

7 Chen L et al. *Am J Ophthalmol*. 2014;157(5): 1103-1108.

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