Management of Chalazion: Surgical treatment versus Triamcinolone application- A Comparative Study

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Abstract
Chalazion or meibomian cyst is a chronic inflammatory lipid granuloma which is caused by the blockage of gland orifices and stagnated sebaceous secretions in the eyelid tarsus. It can affect individuals of all ages and appears more frequently in adults and present as uniform or multiple, as well as recurrent forms. Some are more common on the upper eyelid, which can be explained by the presence of more glands on the upper eyelid due to anatomical distribution. Surgical treatment includes steroid injections, CO₂ laser treatment, lesion excision, and curettage or total excision. The success of conventional surgical treatment of chalazia ranges between 60–89%, while conservative treatment may be successful in 25–77% of cysts. This study was conducted at the Department of Ophthalmology, Agartala Government Medical College and GB Pant Hospital. We estimated the size of the chalazion before and after the procedure, time to resolution, recurrence and complications of treatment (skin pigment changes, skin atrophy, pyoderma and post-surgical hematoma). Success was defined as at least an 80% decrease in the size of the lesion with no recurrence.

Keywords: Chalazion, Meibomian gland, Triamcinolone acetonide, Haematoma, Transconjunctival injection

I. Introduction
Chalazion or meibomian cyst is a chronic inflammatory lipid granuloma which is caused by the blockage of gland orifices and stagnated sebaceous secretions in the eyelid tarsus. It can affect individuals of all ages and appears more frequently in adults and present as uniform or multiple, as well as recurrent forms. Some are more common on the upper eyelid, which can be explained by the presence of more glands on the upper eyelid due to anatomical distribution. They vary in size, are sometimes even not visible, but just as palpable resistance in the tarsus. Eversion of the eyelid usually shows an inflamed chalazion through the tarsal conjunctiva, which further on becomes whitish granuloma with potential for rupture. Chalazion usually causes local symptoms such as irritation, inflammation, and cosmetic disfigurement. Bigger lesions can induce mechanical ptosis and cause blurred vision from induced astigmatism. They rarely disappear spontaneously (25–50%) and mainly require treatment that includes eyelid hygiene, massage, warm compresses, antibiotic drops and sometimes systemic perioral administration of tetracycline (patients with acne rosacea or seborrheic dermatitis). Some mesmaller chalazia may disappear spontaneously, while some have a good therapeutic response to conservative treatment, but a higher percentage of chalazia react only to a surgical approach as the only method of treatment. Surgical treatment includes steroid injections, CO₂ laser treatment, lesion excision, and curettage or total excision. The success of conventional surgical treatment of chalazia ranges between 60–89%, while conservative treatment may be successful in 25–77% of cysts.

The pathological analysis of chalazia confirmed chronic lipogranulomatous inflammatory changes, probably as a result of chronic irritation with low virulent microorganisms. Histologically, a chalazion, described as an epitheliod granuloma, is composed predominantly of corticosteroid-sensitive histiocytes, mononuclear granulocytes, lymphocytes, plasmocytes, polymorphonuclear cells and eosinophils.

It is essentially important to distinguish chalazia from malignant lesions such as sebaceous cell carcinoma, which has very similar clinical presentation, but fortunately its appearance is extremely rare. The management of patients with sebaceous gland carcinoma is between 57 and 68 years. Therefore, it is obligatory to perform a

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II. Materials And Methods

This study was conducted at the Department of Ophthalmology, Agartala Government Medical College and GB Pant Hospital. All subjects included in this study were patients with clinical presentation of chalazion who were referred to ophthalmological examination by their family physician. They all started with conservative therapy (local antibiotic drops, massage, warm, dry bandages) under his recommendation. The study included 30 patients with primary chalazion who were divided into two randomly selected groups. The first group of patients (N=15) was treated by intraleisonal triamcinolone acetonide injection (TA) (0.1 to 0.2 mL(40mg/mL) and the second group of patients (N=15) were treated surgically (incision, curettage) (IC).

Every patient underwent the whole routine ophthalmological examination with histological verification of resected tissue in this group of patients.

We estimated the size of the chalazion before and after the procedure, time to resolution, recurrence and complications of treatment (skin pigment changes, skin atrophy, pyoderma and post-surgical hematoma). Success was defined as at least an 80% decrease in the size of the lesion with no recurrence. If the lesion did not disappear or if it decreased in size to 1 mm or less, the treatment was repeated.

For the assessment of the pain in patients during and after the treatment, we used a simplified version of the 11-point Numerical Rating Scale, in which patients reported the level of pain they felt during the surgery (Goawalla used the same scale in his study). Patients were asked to score their overall experience of pain on a scale of 0 to 10, in which 0 meant “I did not feel anything” and 10 meant “I felt the worst pain I have suffered so far in life.”

To assess patient satisfaction with the chosen treatment option, a Likert scale of satisfaction was selected. The scale has five levels of satisfaction, in which one (1) meant “I am extremely satisfied” and five (5) meant “I am very unsatisfied.”

Exclusion criteria were: acutely infected chalazia with preseptal cellulitis, recurrent chalazion, extremely small chalazion (<2mm), and patients under 18 years of age.

Technique of Triamcinolone acetonide (TA) injection: Triamcinolone acetonide can be applied transcutaneously or through conjunctiva. In this study, the injection was administered transcutaneously after a local anesthetic administration (EMLA 5% ointment) on the site of the injection with the aim to avoid pain. At twenty-eight (28) gauge needle 1-ml Collected data were summarized in Microsoft Excel tables and descriptive statistics were analyzed by SPSS 16.0 software (SPSS Inc., Chicago, IL, USA). To compare among the groups Mann-Whitney U-test was utilized and the level of significance was set at p<0.05. The values are presented as median with range.

III. Results

Chalazion resolution
The results of our study showed equal effectiveness of both therapy approaches. In the first group of patients (triamcinolone acetonide administration - TA), there was a withdrawal of lesions in 13 patients (86%), while the withdrawal of the lesions in the second group of patients was noticed in 12 patients (80%). Two patients had yellow deposits and three patients had hematoma at the site of transcutaneous injection of triamcinolone acetonide (TA). Three
The therapeutic approach and patient satisfaction

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IV. Discussion

Chalazion belongs to the most common ocular pathology that requires surgical intervention. Conventional surgical procedures include incision and curettage of the inflamed gland content in most cases, but the procedure often results in discomfort caused by a compressive occlusion of the eye after the treatment.

The results of the Goawalla study from 2007 suggest that a single transconjunctival incision can achieve the same results as other surgical methods, with fewer complications. A Canadian survey of ophthalmologists has suggested that chalazion surgery should not be trivialized and should be conducted with the patient's full consent.

Patients who underwent intralesional triamcinolone acetonide injection (TA) had less pain and patient inconvenience. Acetaminophen and paracetamol were used to treat any pain, and there were no reported complications. Patients who underwent incision and curettage of the gland content (I/C group) had more pain and inconvenience.

Patients who underwent triamcinolone acetonide injection had less pain and inconvenience compared to those who underwent incision and curettage. The patients who underwent incision and curettage were more satisfied with the clinical result but were mostly dissatisfied with pain they suffered during and after the surgery, as discomfort caused by a compressive occlusion of the eye after the treatment.

The results of the study showed that patients who got triamcinolone acetonide (TA) had less pain and inconvenience, with the advantage of having fewer complications. The patients who underwent incision and curettage were more satisfied with the clinical result but were mostly dissatisfied with pain they suffered during and after the surgery, as discomfort caused by a compressive occlusion of the eye after the treatment.

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explanationistheconcentrationofthedrugthatwasusedin
the
treatment,althoughtheconcentrationoftriamcinolone
acetonide (TA) used in Ho's study was 10 mg/mL, while
in ours studied was used a dilution of 40 mg/mL. The aver-
age time of resolution of the chalazion after one triamcinolone
acetonide (TA) injection was a two and a half
weeks, which is in correlation with the study of Simon et al 19.

V. Conclusion

In conclusion, we can say that both methods are equally effective in the treatment of chalazia. IntraleSIONal application of triamcinolone acetonide (TA) has the advantage when treating children, patients having local or systemicallergic reactions to anesthesia, as well when having chalazion close to the lacrimal drainage system. Although serious side effects of this treatment are rare (rupture of the eyeball, loss of vision due to microembolism), this therapeutic approach is not widely accepted by ophthalmologists, probably because of its use and drainage do not have such serious potential side effects.

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