Chalazion management – surgical treatment versus intralesional injection of long acting steroids

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Abstract

Purpose: Comparison between the effectiveness of intralesional injection of long acting steroid (Triamcinolone acetonide) and surgical management (Incision and Curettage). Method: Hospital-based, two arm, prospective, comparative, interventional study on 100 patients who presented with chalazion who fulfill inclusion and exclusion criteria and gave informed consent were taken for the study. Preoperative detailed examination of chalazion included number, site, size (by caliper), tenderness, signs of inflammation and any other abnormal finding were noted. Test of proportion (Z-test) was used to test the significant difference between two proportions. T-test was used to test the significant difference between means. Results: The reduction in size of lesion (in mm) at post-operative third day, first week and first month follow up visits of the patients of Intralesional injection was significantly lesser than that of Incision and Curettage. Conclusion: Although intralesional injection was a simpler procedure, incision and curettage was a more effective method and remains the gold standard in the treatment of chalazia.

Keywords: Chalazion, Triamcinolone acetonide, Incision and Curettage, Chalazion Size.

Focal swelling of the eyelid is a common complaint that is seen in the primary care or urgent care setting. Chalazion or meibomian cyst is a chronic inflammatory lipogranuloma caused by the blockage of gland orifices and stagnation of sebaceous secretions in the tarsus of an eyelid. The prevalence is unknown but it can occur in all age groups. Hormonal influences on sebaceous secretion and viscosity may explain clustering at the time of puberty and pregnancy. It is more common on the upper eyelid, where an increased number and length of meibomian glands are present. Chalazion is associated with seborrhea, acne rosacea, chronic blepharitis, high blood lipid concentration, leishmaniasis, tuberculosis, immunodeficiency, viral infection, and carcinoma. Poor eyelid hygiene is occasionally associated with chalazion, although its causal role needs to be established.1

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 by pressing the cornea and rarely, they can lead to conjunctivitis or cellulitis.2 Eversion of the eyelid usually shows an inflamed chalazion through the tarsal conjunctiva, which further on becomes whitish.

It is essentially important to distinguish chalazia and malignant lesions such as sebaceous cell carcinoma which has very similar clinical presentation, but fortunately its appearance is extremely rare.4 The mean age of patients with sebaceous gland carcinoma is between 57 and 68 years. Therefore, it is obligatory to perform a histological verification of resected tissue in this group of patients.

Some smaller chalazia may disappear spontaneously while some have 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, incision 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% cysts.5 6

This study was done to compare intralesional triamcinolone acetonide (5mg/ml) injection with incision and curettage in the treatment of chalazia.

Materials and Methods:

Among the study population cases were assessed for suitability for inclusion in study using inclusion and exclusion criteria.
exclusion criteria. An informed consent (written) was taken from the selected cases. Those patients who were willing to participate were only included in the study.

All the patients in the study were examined by taking detailed history including patient particulars, chief complaint, duration of symptoms, past history of chalazion, history of past illness – ocular diseases, diabetes mellitus, bleeding disorder, personal history and family history.

Clinical examination included general examination, systemic examination, local examination of ocular adnexa and slit lamp examination of anterior segment of the involved eye. Preoperative detailed examination of chalazion included number, site, size (by caliper), tenderness, signs of inflammation and any other abnormal finding were noted. All routine pre-operative investigations of the patients were done before the surgery. Then, the patients underwent surgery under local anesthesia or injection under topical anesthesia.

Surgical Procedure done was incision and curettage of the chalazion. A vertical incision up to 3 mm over the area of the chalazion through the tarsal plate into the meibomian gland was made by a Number 11 Bard-Parker blade. Care was taken to avoid inadvertent extension of incision to the lid margin.

A vial of triamcinolone acetonide containing 40 mg / ml was diluted with seven ml of normal saline to make a suspension of 5 mg / ml. 0.2 – 0.6 ml (depending on the size of the lesion) of this suspension was then withdrawn in a tuberculin syringe. With a 26 gauge needle the suspension was then injected into the center of chalazion from the conjunctival surface. To avoid injury to the globe, the needle was always angled away from the globe when inserting the needle. The clamp was then removed.

Patients were discharged following the procedure with medications and advice for regular follow-up. Patients were followed up at three days, one week and one month interval. In each visit, patients underwent detailed ophthalmologic evaluation. Meticulous details of the size of chalazion in each follow-up visit were recorded in the case record form.

When the study period was over, outcome of the cases was analyzed using standard statistical methods. Test of proportion (Z-test) was used to test the significant difference between two proportions. t-test was used to test the significant difference between means.

Odds ratio (OR) with 95% Confidence Interval (CI) was calculated to measure the different risk factor. Significance level was set at 0.05 and confidence intervals were at 95 percent level. Also One Way Analysis of variance (ANOVA) followed by post hoc Tukey’s Test was performed with the help of Critical Difference (CD) or Least Significant Difference (LSD) at 5% and 1% level of significance to compare the mean values.

Result:

The patients of the two groups were comparable in respect of their ages, size, site and duration after a t test was applied.

Table-1: Outcome and two groups

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Group-1 (n=50)</th>
<th>Group-2 (n=50)</th>
<th>Total (n=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success</td>
<td>40</td>
<td>47</td>
<td>87</td>
</tr>
<tr>
<td>Row %</td>
<td>46.0</td>
<td>54.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Col %</td>
<td>80.0</td>
<td>94.0</td>
<td>87.0</td>
</tr>
<tr>
<td>Failure</td>
<td>10</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Row %</td>
<td>76.9</td>
<td>23.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Col %</td>
<td>20.0</td>
<td>6.0</td>
<td>13.0</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
<td>32</td>
<td>100</td>
</tr>
<tr>
<td>Row %</td>
<td>68.0</td>
<td>32.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Col %</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table-2: Comparison of size of lesion (in mm) of the patients of Group-2 at different time

<table>
<thead>
<tr>
<th>Values of descriptive statistics</th>
<th>Pre-operative (n=50)</th>
<th>At post-operative 3rd day (n=50)</th>
<th>At post-operative 1st week (n=50)</th>
<th>At post-operative 1st month (n=50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ± s.e.</td>
<td>3.67±0.88</td>
<td>2.04±0.78</td>
<td>1.01±0.73</td>
<td>0.13±0.41</td>
</tr>
<tr>
<td>Median</td>
<td>3.50</td>
<td>2.0</td>
<td>1.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Range</td>
<td>2.0-5.0</td>
<td>1.0-3.5</td>
<td>0.0-2.5</td>
<td>0.0-2.0</td>
</tr>
</tbody>
</table>
to each of the variables.

In this study the age range of patients was from 15 to 75 years, although most patients were within age group 15 - 30 years (53%) and mean age was 35.10 years for case group 1 and 34.68 years for case group 2. 47% patients were male and 53% were female.

Upper eye lid was predominantly involved in our study. Both case group 1 and 2 comprises 72 % involvement of the upper eyelid. The side of the lesion was almost similar in both the groups. 65 % were from rural location and 35 % from urban. Chi-square test showed that there was significant association between outcome and two groups (p=0.03).

The risk of failure was 3.91 times more among the patients treated with injection as compared to the patients treated with incision [Odds Ratio -3.91(1.01, 15.22); p= 0.03] and the risk was significant.

Discussion:

Although intralesional injection was a simpler procedure, incision and curettage was a more effective method and remains the gold standard in the treatment of chalazia. However, intralesional triamcinolone acetonide injection is a useful alternative method that some patients may prefer over incision and curettage because it is less painful, bloodless and requires no post treatment eye pad. It is a repeatable procedure and may be especially useful in cases that are not ideally suited to incision and curettage, for example multiple small chalazia, cases with chronic diffuse meibomitis where there is a thickened, inflamed tarsal plate with no removable granulomatous tissue, marginal chalazia and chalazion near the lacrimal drainage system. Bilateral cases can conveniently be treated at the same visit.

References:


Cite this article as: