

Comparison of Intralesional Kenacort Injection Versus Surgical Intervention for Primary Chalazion

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Purpose: To compare the efficacy and safety of intralesional steroid injection versus surgical intervention (Incision and Curettage) in Primary Chalazion.

Study Design: Prospective, comparative and interventional hospital based study.

Place and Duration of Study: Shaheed Mohtarma Benazir Bhutto Medical College Lyari and Sindh Government Lyari General Hospital, Karachi from 15th October, 2016 to 15th April, 2017.

Material and Methods: All patients diagnosed with chalazion on clinical basis from the Outpatient department of Ophthalmology were included in the study. All patients were randomly divided into two groups with 25 patients in each group. Group 1 received intralesional 0.2 ml triamcinolone acetonide while Group 2 received surgical intervention (Incision and Curettage).

Results: There were 50 eyes of 50 patients between the age group of 15 to 40 years and of either gender. Mean age was 25 ± 12.2 with male to female ratio of 2:1. There were 19 (76%) patients who achieved complete resolution of chalazion after intra-lesional triamcinolone acetonide in group I and there were 21 (84%) patients out of 25 who achieved complete resolution of chalazion after incision and curettage in group II. No ocular complication such as bleeding, elevation of intra ocular pressure, eye lid de-pigmentation or any loss of vision in either group was observed.

Conclusion: Intralesional triamcinolone acetonide injection is nearly as effective as surgical treatment (incision and curettage) in primary chalazion.

Keywords: Triamcinolone, Chalazion, Eyelid Diseases.

Chalazion is a chronic inflammatory Lipo-granulomatous lesion of the eyelid¹. It is the most common benign eyelid lesion accounting for 13.4% of cases². The site of pathology is the meibomian gland, which lines the tarsus of the eyelid³. The most common presentation is a painless lump or swelling on the upper or lower eyelid. The condition may be unilateral or bilateral, external or internal and may consist of single or multiple lesions².

It can occur in individuals of all age groups but most commonly presents in adults with 80% lesions

occurring in individuals in the age group of 11 to 30 years⁴. Although it can occur in any location of the eyelid, most chalazia are found on the upper eyelid. This is because of the concentrated anatomical distribution of Meibomian glands in the upper eyelid⁵. An inflamed chalazion can be visualized through the tarsal conjunctiva upon eversion of the eyelid. The lesion may take up the appearance of a whitish granuloma with potential to rupture⁵. The most common symptoms include swelling, redness and irritation. Swollen eyelids with a hard nodule may

also occur³. Larger lesions have a tendency to induce mechanical ptosis and cause blurred vision due to astigmatism by pressing the cornea⁶. Rarely, conjunctivitis and cellulitis may also occur⁵.

On histology, a chalazion is composed of various inflammatory cells such as histiocytes, mononuclear lymphocytes, plasma cells, polymorphonuclear cells and eosinophils^{7,8}. Chalazia can also occur with other eye conditions and can have inflammatory and viral causes. Inflammatory causes include seborrheic dermatitis, acne rosacea and chronic blepharitis. Viral conjunctivitis most commonly constitutes viral causes². Biopsy and microbiological analysis are needed to rule out neoplasms especially in the elderly and in recurrent chalazion⁹. Neoplasms which may mimic chalazia include sebaceous gland carcinoma, basal cell carcinoma, squamous cell carcinoma or merkel cell carcinoma².

A chalazion can be treated by medical treatment as well as surgical interventions. The conservative treatment involves warm compresses for 10 minutes four times daily, eyelid massage, lid scrubs and mild topical steroids. Warm compresses help to open the glands, to break and express the nodules. Antibiotics are only indicated in conditions where the chalazion is associated with severe blepharitis or blepharitis associated with rosacea. Tetracycline is used commonly. Alternative antibiotics are azithromycin and erythromycin. Interventions include intralesional steroid injection (ILSI) triamcinolone acetonide and incision and curettage². Injection of 0.05 to 0.3 ml of the steroid is given in the palpebral side using the insulin syringe³.

Conservative management by warm compresses and antibiotics is effective in up to 80% of cases while ILSI is found to be effective in 93% of cases^{7,10,11}. According to the literature, steroid injection is an effective management for young patients while incision and drainage is recommended for patients with multiple chalazia. Combined treatment is recommended for patients with large, recurrent and multiple chalazia¹². For the past several years, a lot of research has been conducted to compare the effectiveness of ILSI triamcinolone acetonide and surgical intervention¹³. The literature reveals a mixed opinion and no definite conclusion has been drawn yet. Secondly, very few studies have been conducted in Pakistan to compare the effectiveness of steroid injection and surgical management.

The primary goal of our study was to compare the

treatment outcomes and success of 0.2 ml Triamcinolone injection and surgical intervention.

MATERIAL AND METHODS

The study was conducted at Shaheed Mohtarma Benazir Bhutto Medical College Lyari and Sindh Government Lyari General Hospital, Karachi for duration of six months from 15th October, 2016 to 15th April, 2017.

Fifty eyes of 50 patients between the age group of 15 to 40 years diagnosed with primary chalazion on clinical basis of either gender were included in the study from the outpatient department of Ophthalmology. Patients were selected after taking ethical approval and informed consent. Patients having acute infections and recurrent chalazion were excluded from the study. All patients were randomly divided into two groups with 25 patients in each group. Group 1 received intralesional 0.2 ml (40 mg/ml) triamcinolone acetonide while Group 2 received surgical intervention (Incision and Curettage).

Patients were briefed about the procedure, its benefits and complications. Informed and written consent was taken from all the patients and also advised for co-operation during the procedure. Slit lamp examination was done before the procedure. Before starting the procedure in both the groups, topical anesthesia (Proparacaine 0.5%) eye drops were instilled two to three times in the affected eyes. After taking all aseptic measures, in group I eyelid was everted and 0.2 ml (8 mg of 40 mg/ml) of triamcinolone acetonide (injection kenacort) was injected trans-conjunctively in the center of the lesion by using 26.5 gauge needles. In some patients when it was not possible to evert the lid due to large swelling the same was injected transcutaneously. Patching was done after putting betamethasone neomycin (Betnesol-N) eye ointment for one to two hours. In group 2 lignocaine 2% with adrenaline one to two ml was injected subcutaneously in the eyelid over the site of the chalazion. Chalazion clamp was applied over the chalazion site and eyelid was everted, then a small vertical incision was given with surgical blade no. 11. After that curettage was done with chalazion currette. Pressure was applied for five minutes to stop bleeding after removing the clamp. Patching was done for six hours after putting Betnesol-N eye ointment.

Post operatively, tablet Augmentin 625 mg (500 mg amoxicillin and 125 mg clavulanic acid, Glaxo Smith Kline, UK) was given 3 times a day, Tablet

Denzen DS (Serratiopertidase 10 mg, Helix Pharma) was given 3 times a day, Tablet Ibuprofen 400 mg (Brufen 400 mg, Mylan Products Limited) 3 times a day, Moxigan eye drops 4 times a day (Moxifloxacin Hydrochloride, Barret Hodgson) and Betnesol-N eye ointment (Betamethasone and Neomycin, Pharmaceutical AB) were advised for one week.

The treatment outcomes were observed and data was collected. Data analysis was done by using SPSS version 20. Descriptive statistics was done and data was presented in the form of tables.

RESULTS

Out of 50 patients, majority consisted of males 32 (64%) and the rest were females 18 (36%). The average age at the time of presentation was 25 ± 12.2 years. Half of the patients underwent surgical treatment (50%) while the other half were treated with 0.2 ml triamcinolone injection (Table 1). The treatment outcomes of both groups were compared. Patients treated with surgical intervention had a better treatment outcome with 84% achieving complete recovery compared to 76% of patients achieving complete resolution when treated with 0.2 ml triamcinolone (Table 2).

Table 1: General features and distribution of patients.

Variables (n = 50)		Mean ± SD/ n (%)
Age		25 ± 12.2
Gender	Male	32 (64%)
	Female	18 (36%)
Treatment	Group 1	25 (50%)
	Group 2	25 (50%)

Table 2: Outcomes of 0.2 ml triamcinolone and surgical intervention.

Variable (n=50)	Complete Resolution		P-Value
	Yes	No	
Group 1	19 (76%)	6 (24%)	0.480
Group 2	21 (84%)	4 (16%)	

A total of 10 patients (20%) failed to achieve resolution. Out of these, six were treated with ILSI and four were treated with surgical intervention.

Therefore, ILSI had a slightly greater risk of failure in our study (Table 2).

DISCUSSION

Leinfelder first proposed the treatment of chalazion by ILSI in 1964¹⁴. Since then, many studies have been conducted and have demonstrated surgery and ILSI to be equally effective^{4,15}.

ILSI has proved to be an effective and safe treatment for chalazia due to the fact that it is rarely associated with serious complications. However, skin depigmentation remains a common side effect in pigmented patients.¹⁶ Ho et al stated that 2 out of 56 patient developed skin depigmentation in their study. However, in the Goawella study none of the patients out of 56 developed this complication⁵.

Other rare side effects reported in literature include yellow deposits at the site of injection¹², microembolism, rise in intraocular pressure¹⁷, and formation of pyogenic granuloma⁷. The findings of the above studies are contradictory to our study in which no side effects of the treatment modalities were observed.

Although extremely effective, ILSI is painful compared to injection of Triamcinolone into the subcutaneous tissue¹⁴. The later causes less pain and does not require local anaesthetic. Therefore, it can be considered as an alternative first line treatment¹⁴.

Surgical treatment of chalazion is a minor surgical procedure used to treat complicated and recurrent lesions³. Post-surgical cold compresses, maintenance of eyelid hygiene and avoidance of contact lenses are essential measures to prevent infection¹⁸.

Several studies have been conducted to compare the effectiveness of both these treatments. According to a study from 2014, two ILSIs were sufficient to produce complete resolution of multiple and recurrent chalazia¹⁹. Similarly, according to Ben Simon et al most cases resolved with an average of one to two ILSIs. Resolution was defined as a decrease in size of 80% or more with no recurrence²⁰.

CF Chung et al demonstrated a statistically significant success rate of patients treated with conservative management (58.3%) compared to those treated with ILSI (93.8%)¹⁴. TL Jackson et al concluded that surgical treatment and ILSI both are equally effective in eradicating three quarters of chalazia compared to one third treated by conservative management²¹.

In the light of the above literature, it can be concluded that both ILSI and surgical treatment are equally effective. The findings of the above studies are consistent with our results in which we also observed the near equal effectivity of the injection and surgical management.

However, Biuk D et al states a significant difference in pain sensation experienced between the two groups. Surgical treatment resulted in higher pain scores with a median score of 6⁵. In contrast, patients who received ILSI did not experience any pain (pain score=0) thus producing higher rates of patient satisfaction.

Furthermore, patients treated by ILSI needed less OPD visits, did not require antibiotics or analgesics or compressive occlusion of the eye⁵. Therefore, ILSI is the treatment of choice in children and when the chalazion is in close proximity to the lacrimal drainage system to avoid surgical damage. Surgical treatment is preferred in cases of infected chalazion, patients not responding to ILSI and patients with suspected adenocarcinomatous lesions in which histopathology is needed for confirmation of diagnosis⁵.

It was also seen that the response to treatment correlated with the size of the lesion as demonstrated by a local study conducted by Tahir MZ et al¹⁵. The authors found that the success rate of the treatment was greater in patients presenting with lesions ranging between 2-6 mm (100%) compared to patients who had lesions sized between 6-9 mm (97%)¹⁵. Similarly, another study from 2017 highlighted that patients with lesions less than 5mm responded well to treatment³. Furthermore, Lee J et al showed that there was no significant difference between the treatment outcomes for adult and pediatric patients undergoing treatment with ILSI.¹⁷

CONCLUSION

Intralesional triamcinolone acetate injection is nearly as effective as incision and curettage in primary chalazion. It means it is a good alternative first line treatment in cases where diagnosis is straight forward.

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