

ORIGINAL ARTICLE

ADDED ADVANTAGE OF INJECTING SUBTARSAL STEROID INJECTION AFTER INCISION AND CURETTAGE OF MULTIPLE CHALAZION

Qirat Qurban, Zeeshan Kamil, Khalid Mahmood

Khalid Eye Clinic, Karachi-Pakistan

Background: Being one of the most common eye lid inflammatory lesions, there is an abundance of ways its treatment can be approached; however, the dearth of consensus on its management guidelines still remains a point of interest in peer reviewed literature. **Purpose:** To evaluate the additional advantage of injecting subtarsal steroid injection simultaneously with incision and curettage of multiple eye lid chalazion. **Method:** This intervention study was carried out in the Ophthalmology unit of Khalid Eye Clinic, Karachi from February to July 2019 and included fifty patients of both male and female with age ranging between 15–45 years. The patients were distributed into two groups with twenty-five patients in each group. Group A included patients undergoing incision and curettage only for eye lid multiple chalazion, whereas, Group B included patients undergoing incision and curettage with simultaneous subtarsal steroid injection. Post operatively patients were advised to do hot compresses for at least five days and observe the resolution of swelling and recurrence of chalazion for up to six months. **Result:** The average time for resolution of the swelling in group A patients was 4.4 ± 1.45 days, but eleven out of the twenty-five patients developed chalazion on the same eye lid again within the follow up period. Although group B patients took 6.0 ± 2.7 days for the resolution of swelling but none of them developed recurrent chalazion within the follow up period. **Conclusion:** Patients undergoing incision and curettage with simultaneous steroid injection proved to have an additional benefit in terms of reduction in recurrence of chalazion.

Keywords: Chalazion; Subtarsal steroid injection; Incision and curettage

Citation: Qurban Q, Kamil Z, Mahmood K. Added advantage of injecting subtarsal steroid injection after incision and curettage of multiple chalazion. J Ayub Med Coll Abbottabad 2021;33(3):437–40.

INTRODUCTION

One of the most common eyelid presentations, Chalazion, is a localized long standing granulomatous inflammation caused by occlusion of the meibomian glands and less commonly by the glands of Zeis. It can manifest in the form of a non-malignant, self-restrictive nodule to a painful eyelid growth resulting in a cosmetically disfiguring firm nodular mass leading to corneal astigmatism and mechanical ptosis.¹ Histologically, chalazion is an epithelioid granuloma collection of histiocytes (corticosteroid-sensitive), white blood cell components and plasma cells.² Chalazion may resolve spontaneously in 25–43% of the cases.³

The initial management comprises of standard conservative measures including eyelid hygiene, salt water soaks, daily use of warm compresses, digital massage and antibiotic eye ointment to avoid secondary bacterial infection. Conservative therapy is less invasive, but requires patience and persistent effort from the patient. The success rate ranges widely from 25–87% and is mostly dependent on patient education by the physician and patient compliance with the treatment regimen.^{3–6} Resistant lesions requires removal via

incision and curettage (I&C), injecting intra leional steroids, or laser treatment with carbon dioxide.

Incision & curettage, being the traditional treatment for chalazion, involve almost absolute drainage of the accumulated material by breaking the internal septa and scrupulously scraping the walls of the cavity with a curette. Waning of lesion occurs completely in most cases but incision & curettage may be allied with surgical complications such as pain, blood loss, and scarring.^{7,8} Injecting steroid into the lesion is also safe and effective and is considered to be a superior alternative for multiple chalazia and chalazia next to the lacrimal drainage system due to lesser risk of damage. Patient acquiescence is good with minimum blood loss and anxiety. Furthermore, it exhibits vasoconstrictive and antiproliferative action as well.⁹ Intralesional steroids cause improvement in 81–87% cases.^{8–10}

Some malignant neoplasms of the eyelids, particularly pyogenic granuloma, eyelid margin papilloma, marginal adenoid cystic carcinoma, marginal sebaceous carcinoma, basal cell carcinoma, squamous cell carcinoma can simulate a chalazion, thus, tissue ought to be sent for histopathological study to eliminate the likelihood of malignancy.^{11,12}

The purpose of this study is to appraise the outcomes of using only incision and curettage compared with additional simultaneous treatment with subtarsal steroid injection along with treatment by incision and curettage for multiple chalazia to limit recurrence.

MATERIAL AND METHOD

This study was carried out in the Ophthalmology unit of Khalid Eye Clinic, Karachi, from February to July 2019 and recruited fifty patients of both genders with ages ranging between 15–45 years. Approval was obtained by institutional ethical review committee. The patients were distributed into two groups with twenty-five patients in each group. Group A included patients undergoing incision and curettage for eye lid chalazion, whereas, Group B included patients undergoing incision and curettage along with simultaneous subtarsal steroid injection for multiple chalazion. Patients were briefed about the study dynamics and permission was obtained from each patient or the patient's parents for those less than 18 years of age. All the incision and curettage as well as subtarsal steroid injections were performed by one of the co-authors (QQ). Patients having a diagnosis of multiple chalazia, failure of conservative treatment with lid hygiene, warm compression, and antibiotic ointment for at least 1 month were included in this study whereas, those having an infection of the eyelid, nonpalpable chalazion, suspicion of tumour, or suspicion of steroid related IOP elevation were excluded.

Pro forma was used to document the pre-operative assessment including history about duration of signs and symptoms as well as traditional treatment received along with visual acuity assessment and intraocular pressure measurement taken.

In Group A, incision & curettage were done under sterile conditions after injecting local anesthesia. Eyelid was everted and chalazion clamp set in place. By a single vertical incision, all the debris was removed using a curette along with thorough scraping of the cavity walls followed by removal of the chalazion clamp. Topical ointment was applied and dressing was done. Pad was removed after 2 hours by each patient and oral antibiotic were prescribed.

In Group B, along with incision and curettage, a volume of 0.05–0.15 mL of steroid injection (Triamcinolone acetonide 40 mg/mL) was injected subtarsally in the operation theatre room. The eyelid was everted and steroid injected through the conjunctiva surrounding the lesion with an insulin syringe.

Post operatively patients were advised to do hot compresses for at least five days and observe the

resolution of swelling and report any reappearance of chalazion. The patients were followed up to 6 months post operatively. Data analysis was done by using SPSS version 25.

RESULT

In group A, 25 patients underwent incision and curettage, eleven (44%) out of the twenty-five patients developed chalazion on the same eye lid again within the follow up period. (6 months after surgery is considered as follow up period). Recurrence was observed in 40 ± 55.2 days. (Table-1). The remaining fourteen showed resolution of the chalazion with an average of 4.4 ± 1.45 days. However, group B patients took 6.0 ± 2.7 days for the resolution of chalazion but none of them developed recurrent chalazion within the follow up period. All patient cannot show same level of response. No complications were observed from the subtarsal injection in group B. Hence, our analyses showed that subtarsal steroid injection have statistically significant additional effect to performing incision and curettage in terms of reducing recurrence in patients with multiple chalazia (p -value= 0.001) by independent t test.

Table-1: Recurrence rate

S/no	Patients	Recurrence in days	Percentage
1	1	22	4
2	1	32	4
3	1	64	4
4	1	67	4
5	1	72	4
6	1	86	4
7	1	94	4
8	1	135	4
9	1	142	4
10	1	143	4
11	1	154	4

DISCUSSION

One of the common causes of lid inflammation, Chalazion can be managed with warm compress in 29–80%.^{3,8,9} Where it cannot be managed conservatively, incision & curettage and intralesional steroid injection are used commonly with success rates of 87–89% and 62–92%, respectively.^{3,8,9,13,14} If the chalazion is not infective, steroid therapy is usually effective. In case if it is, antibiotics and removal of debris by an intervention is the treatment of choice.¹⁵

Leinfelder was the first to suggest intralesional steroid injection for the treatment of chalazion.¹⁶ Intralesional steroid injection without anaesthetic injection has a minimal chance of blood loss, scarring, can be done in the OPD, used for numerous chalazia and for lesions snear to the lacrimal punctum as compared to incision and

curettage. Patients presenting with frequent chalazion at the same site pose a greater suspicion for the possibility of malignant lesions and biopsy with histopathological analysis is recommended.^{17,18}

Our study compared two methods of treatment for chalazion; Incision and curettage and adjuvant sub tarsal steroid injection with incision and curettage. In Group B, sub tarsal steroid injection along with incision and curettage proved to be a successful, secure and fast method of treatment. All patients showed timely and long-term resolution within a week of administration and showed no recurrence in the six months follow up period. Whereas, in Group A, after incision and curettage only, 14 patients out of the 25 patients showed a quicker resolution but 11 patients ended up with a recurrence of chalazion within the same eyelid. Even though incision & curettage had a quicker response but it was lengthy and safety measures had to be taken to evade damage to the neighbouring tissues and lacrimal drainage system. The eye needed to be patched after surgery and follow up required to identify any development of the scar at the site of the incision. However, no complication apart from the appearance of recurrent lesion as encountered in this study.

Our outcome was in accordance with another study done which showed similar results after performing incision and curettage but not with intralesional steroid and incision & curettage.¹⁹ Norris reported that occurrence of absolute resolution was defined if the lesion improves to 95–100%. Alternative first-line treatment with steroid injections was done in cases where diagnosis is apparent and no biopsy necessary.²⁰

Palva *et al* showed that large chalazion had a delayed recovery and an increased recurrence rate.⁹ Another study observed that there was resolution of chalazion after one steroid injection.²¹ This was similar to our outcome.

Despite the observation that none of the 25 patients in our study had complications from the steroid injection, such procedure should be done while being aware of the potential complications including deposition at the injection site, increased IOP, pigmentary disturbances of the skin, fat wasting, globe puncture, traumatic cataract, embolization, and posterior segment vascular occlusions.^{22–25}

This study proved that an additional single injection of sub tarsal steroid, along with incision & curettage, for the treatment of multiple chalazia was better compared to incision & curettage alone. It was also evenly useful in children and adults, without any major complications.

CONCLUSION

Patients undergoing incision and curettage with simultaneous steroid injection have an additional benefit in terms of reduction in recurrence rate of chalazion. Larger scale trials are needed to support our findings.

Study limitation: Our study was limited due to the relatively small sample size, single centre study and the absence of a control group to judge against with other treatment modalities.

Conflict of Interests: None

AUTHORS' CONTRIBUTION

QQ: Primary surgeon, Manuscript writer. ZK: Data acquisition, Manuscript writer. KM: Statistical help, post interventional management

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Submitted: May 4, 2020

Revised: October 12, 2020

Accepted: May 14, 2021

Address for Correspondence:

Qirat Qurban, 35-B, 4th Sunset Street Phase 2, DHA, Karachi-Pakistan

Email: qirat_89@hotmail.com