

Original Article

Comparison of Peri-lesional Triamcinolone Acetonide versus Incision and Curettage in the Treatment of Primary Chalazion

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ABSTRACT

Purpose: To compare the results of peri-lesional Triamcinolone Acetonide (TA) with incision and curettage in the treatment of primary chalazia.

Study Design: Quasi experimental study.

Place and Duration of Study: Eye department of District Head Quarter/Teaching Hospital, Gujranwala, from June 2018 to May 2019.

Methods: One hundred and twenty patients with primary chalazion, either gender and age between 10–30 years, were enrolled in this study. They were equally divided into two groups. In group A, incision and curettage was done. In group B, perilesional TA (40 mg/ml) was given. Followup was done at 5th day, 14th day, 1 month and 3 months. Lesion resolution or recurrence and complications were recorded. IOP monitoring was also carried out at each followup.

Results: Mean age was 18.0 ± 2.14 years with range of 10 – 30 years. There were 45.0% females and 55.0% males. No statistically significant difference was found in age, gender and complication rates between the two groups. Complete resolution was seen in 95.0% in group A and 88.3% cases in group B. The difference between the two groups was not statistically significant regarding small and medium sized chalazia. In case of large chalazia, 23 out of 24 patients in group A and 19 out of 23 patients in group B showed complete resolution and the difference in success rate of two groups was statistically significant ($p = 0.014$).

Conclusion: Incision and curettage and perilesional TA injection are equally effective in treating small and medium primary chalazia. While for large chalazia, Incision and curettage offered superior results.

Key words: Chalazion, incision and curettage, triamcinolone Acetonide,

How to Cite this Article: Imtiaz HS, Jabran A, Anam A, Ghous W. Comparison of peri-lesional Triamcinolone Acetonide Versus Incision and Curettage in the Treatment of Primary Chalazion. Pak J Ophthalmol. 2022, **38 (1)**: 31-35.

Doi: 10.36351/pjo.v38i1.1290

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Received: June 8, 2021
Accepted: December 8, 2021

INTRODUCTION

Chalazion is a benign eyelid nodule due to chronic granulomatous inflammation secondary to blockage of meibomian glands orifices.¹ Its clinical presentation varies from painless swelling of gradually increasing in size to painful when become secondarily infected. Chalazion can cause cosmetic disfigurement, irritation, discomfort, corneal astigmatism and mechanical ptosis.² Initial conservative management involves hot

compresses,³ lid hygiene and massage, antibiotic eye ointment and mild topical steroids.⁴ Other treatment modalities are considered once conservative management fails and include incision and curettage, intralesional or perilesional steroid injection and carbon dioxide laser treatment.^{5,6}

Incision and curettage is a conventional method that is considered a gold standard by some ophthalmologists. It is carried out under local anaesthesia in adults and requires general anaesthesia for children in proper operation theater (OT) settings.^{7,8}

Intralesional or perilesional triamcinolone acetonide (TA) is considered another alternative approach with certain advantages and disadvantages. As chalazion is a sterile inflammation, it is sensitive to anti-inflammatory effect of steroids. It is less time consuming and requires only topical anaesthesia without the need for special instruments and special OT settings.^{9,10}

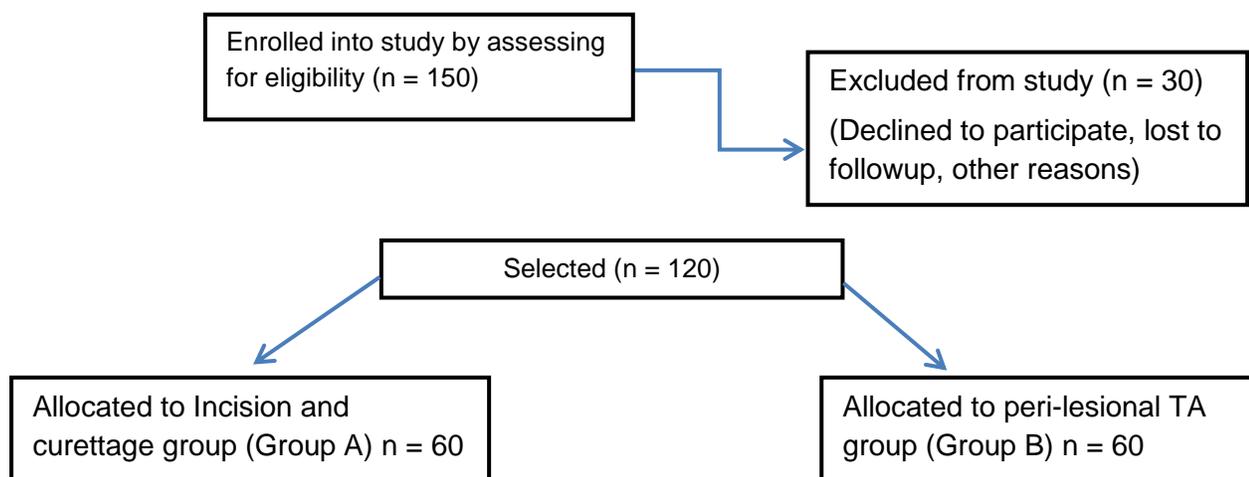
Rich data is available for comparison of Incision and curettage and intralesional TA but comparison of perilesional TA and Incision and curettage is limited. The Rationale of this study is to compare the success rate and complications rate between incision and curettage and perilesional TA treatment for primary chalazion. Perilesional TA reduces the confounding factor associated with intralesional TA injection as it causes direct rupture of chalazion and release of its secretions.

METHODS

After getting institutional review committee approval and taking special consent from every patient/guardian, a study was conducted at eye department of DHQ – UTH, Gujranwala for a period of 12 months from June 2018 to May 2019. One hundred and twenty patients with primary chalazion, after failed conservative treatment, either gender, age between 10–30 years, were enrolled in this study. They were divided equally into two groups based on random number generator (60 in each group). Patients with any lid abnormality, patients with recurrent chalazion and those who did not complete 3 months post-injection followup were removed from this study. Baseline matching was also carried out in both groups.

All patients underwent complete eye examination, which included digital photography of the lesion as well. Pre-operatively, chalazion size was also graded into 3 groups as follow; Small < 4.0 mm, medium 4.0–8.0 mm and large > 8 mm. Thirty three patients had small sized chalazia (16 included in group A and 17 in group B). Medium sized chalazia of 4–8 mm were present in 40 patients (20 in each group). Large sized chalazia were found in 47 patients (24 patients in group A and 23 in group B).

In group A, incision and curettage was carried out as treatment modality of primary chalazion, under local anesthesia in adults while under general anesthesia in children. After infiltrating 2cc injection lignocaine 1% peri-lesionally, chalazion clamp was applied over the chalazion and lid was everted. Small vertical incision was given with surgical blade 11 over the highest point of swelling and thorough scooping was done. Chalazion clamp was removed, antibiotic



eye ointment was applied immediately and eye pad was applied for 4 hours. Postoperative antibiotic tobramycin was given in TDS frequency for 3 days.

In group B, perilesional TA (40 mg/ml) was given as treatment option to primary chalazion under topical anesthesia. After instilling 1 drop of topical anesthetic proparacaine 0.5% eye drops, 0.2cc perilesional injection of TA was given from palpebral conjunctival side. Antibiotic ointment was applied and eye pad was done for 4 hours. Post-operative antibiotic tobramycin was prescribed in TDS frequency for 3 days.

Followup was done at 5th day, 14th day, 1 month and 3 months post-treatment. Along with determining lesion resolution or recurrence and complete ophthalmic examination, IOP monitoring was also carried out at each followup.

Complete resolution was defined as lesion regression of 90–100% of its initial size. Treatment was considered a failure if no resolution was achieved after the first attempt. Recurrence was defined as re-appearance of swelling after its initial resolution within 3 months of treatment.

RESULTS

Mean age was 18.0 ± 2.14 years with range of 10–30 years. In group A, mean age was 19.88 ± 3.82 years while in group B, it was 18.28 ± 2.93 years. No statistically significant difference was found in age distribution between two groups. (p value = 0.26).

In general, 45.0% were female and 55.0% were male. In group A, 43.4% were female and 56.6% were male while in group B, 46.6% were female and 53.3% were male. No statistically significant difference was found in gender distribution between two groups (p value = 0.34)

Table 1: Gender Distribution in the Groups.

	Male	Female	Total
Group A	34 (56.6%)	26 (43.4%)	60 (100%)
Group B	32 (53.3%)	28 (46.6%)	60 (100%)
Total	66 (55.0%)	54 (45.0%)	120 (100%)

In general, left eye was involved in 42.50% patients while right eye in 51.6% patients. Ninety-five percent patients had unilateral disease. In group A, right eye was involved in 50% and left eye in 45.0% patients while in 5.0% patients, both eyes were

involved. In group B, percentage for bilateral involvement was 6.6%, while right eye involvement was in 53.3% patients and left eye in 40% patients.

In group A, complete resolution was seen in 95.0% while in group B, complete resolution was seen in 88.3% cases. P-value obtained for both groups was not statistically significant (p -value = 0.27). Chart 1 shows the details.

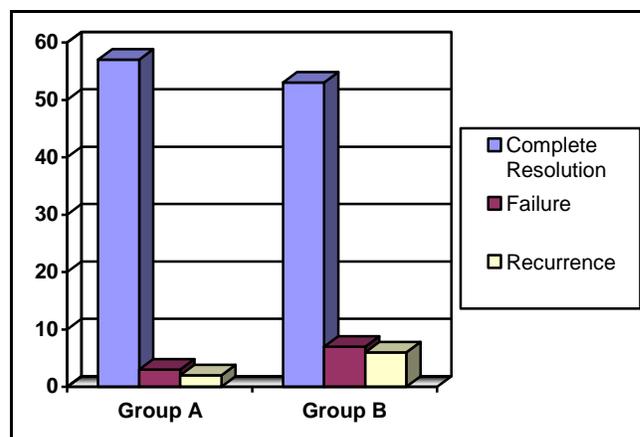


Fig. 1: Clustered bar chart showing success rate and failure rate in both groups.

Further stratification of success rate was done with regard to size of chalazion. Difference in success rate of two groups was not statistically significant regarding small and medium sized chalazia. In case of large sized chalazia, 23 out of 24 patients in group A and 19 out of 23 patients in group B showed complete resolution and the difference in success rate of two groups was statistically significant ($p = 0.014$).

Table 2: Success rate stratification with regard to size of chalazion.

Chalazion Size	Group A (Success Rate)	Group B (Success Rate)	p-value (< 0.05)
Small (33)	93.75%	94.11%	0.23
Medium (40)	95%	90%	0.12
Large (47)	95.83%	82.6%	0.014

Complication rate was also assessed between the two groups. The difference in complication rate of two groups was not statistically significant. ($p = 0.34$). Figure 2 shows the details.

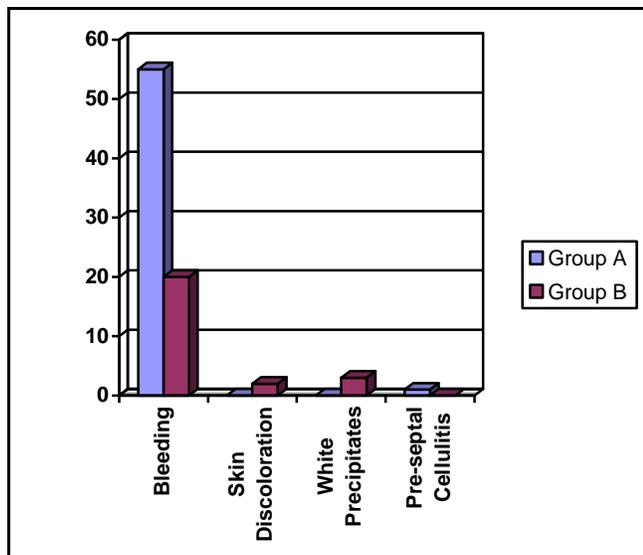


Fig. 2: Clustered bar chart showing different complications between the two groups.

DISCUSSION

In this study, mean age was 18.0 ± 2.14 years with range of 10–30 years, which included both children and adult population. The comparison of resolution was not statistically significant between different age groups. Lee et al. compared intralesional steroid injection for primary chalazia in children and adults and found out no statistically significant difference in resolution time in pediatric and adult age group (p value: 0.7).¹¹

In this study, we found male predominance of 55%. Similar predominance was observed in both groups individually as well. Ilhan et al. studied primary and recurrent chalazion occurrence according to gender distribution and they concluded female dominance of 51.6% while males were 48.4%.¹² This difference in gender dominance may be explained by difference in ethnicity.

In our study, success rate in Incision and curettage was 95%, while in perilesional TA group, it was 88.5% and the difference was not statistically significant. In a meta-analysis carried out by Putterman, success rate with Incision and curettage was 78%, while with steroid injection it was 60.4%.¹³ Ahmad et al, also compared the same therapeutic options for primary chalazion, and success rate in Incision and curettage group was 79%, while with steroid injection was 62%.¹⁴ In literature, intra-lesional steroid injection was given while in our study it was

given perilesionally, which might explain its relatively higher success rate.

We have studied the success rates of two groups according to the size of chalazion. The results showed that in small and medium sized chalazion, both Incision and curettage and perilesional TA were equally effective with no statistically significant difference. While in case of larger chalazion, difference in success rate was statistically significant with higher rate in Incision and curettage group. Singhanian et al, studied the same success rate of two groups between medium and large sized chalazion and found that Intralesional TA was as effective as Incision and curettage for both medium and large sized chalazion.¹⁵ While Khurana et al. concluded that Incision and curettage was better choice in case of larger chalazion.¹⁶

In our study, recurrence was found as 3.3% in Incision and curettage group and 10% in TA group. Nabie et al, reported recurrence of 34% in intralesional TA group and 2% in Incision and curettage.¹⁷ Pavicic et al, did not report any recurrence after intralesional TA injection in primary and recurrent chalazia.¹⁸

Complication rate was also assessed between the two groups in this study and no statistically significant difference was found. Park et al. reported 2 patients with fat atrophy and skin depigmentation after intralesional TA injection for chalazion.¹⁹ While Wong et al. reported no complication with intralesional TA injection.²⁰ In a meta-analysis, where complication rate was compared between the two groups and studies failed to show any difference in the incidence of complications with either procedure.²¹

Limitations of this study were short duration of followup and factors responsible for recurrence were not considered.

CONCLUSION

Both incision and curettage and perilesional TA injection can be used for treating primary chalazion of small and medium size. While in case of large sized chalazion, Incision and curettage offer superior results.

Ethical Approval

The study was approved by the Institutional review board/Ethical review board (**Admn. 273/GMC**).

Conflict of Interest

Authors declared no conflict of interest.

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Authors' Designation and Contribution

Hafiza Sadia Imtiaz; Postgraduate Resident: *Concepts, Design, Literature Search, Data Acquisition, Data Analysis, Statistical Analysis, Manuscript Preparation.*

Aamna Jabran; Assistant Professor: *Concepts, Design, Data acquisition, Manuscript Preparation, Manuscript Editing, Manuscript review.*

Amna Anam; Postgraduate Resident: *Design, Literature Search, Data Acquisition, Manuscript Preparation, Manuscript Editing.*

Wasim Ghous; Medical Officer: *Literature Search, Data Analysis, Statistical Analysis, Manuscript Editing, Manuscript Review.*

