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IP International Journal of Ocular Oncology and Oculoplasty

Journal homepage: https://ijooo.org/

Original Research Article

A prospective study comparing incision and curettage with intralesional injection of triamcinolone acetonide for treating chalazia in South Indian population

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ARTICLE INFO

Article history:
Received 12-01-2022
Accepted 20-01-2022
Available online 09-05-2022

Keywords:
Chalazion
Triamcinolone acetonide
Incision & Curettage.

ABSTRACT

Purpose: To compare the results and recurrences of incision and curettage with intralesional triamcinolone acetonide (TA) in treating chalazia.

Materials and Methods: Patients with chalazia were treated with either intralesional injection of triamcinolone acetonide or incision and curettage (I & C) by randomisation into 2 different groups. The patients were then followed up after 2 weeks and then 3 months post-procedure to assess the size. A size reduction of 90% was considered as adequately treated for the purposes of this study.

Results: Out of a total of 60 patients selected for the study, 30 patients underwent intralesional triamcinolone injections & the other 30 patients incision & curettage for their chalazia respectively. Adequate treatment thresholds were achieved in 24% patients (80%) in the Triamcinolone Acetonide group and 29 patients (96.67%) in the incision & curettage group. Recurrence of the lesion was seen in 9 patients (30%) in the triamcinolone acetonide group & 2 patients (6.67%) in the incision & curettage group. Intraocular pressure & visual acuity remained unaltered during follow-ups in both groups.

Conclusions: We found both methods to have good success rates. The I & C group had lesser recurrences and higher success rates when compared to the TA group

1. Introduction

Chalazion is a common chronic sterile lipogranulomatous mass in the eyelid that is caused by obstruction of the meibomian glands.[1,2] It is usually asymptomatic & is a non-sinister swelling. Although it can seldom cause mechanical ptosis, refractive errors due to induced astigmatism, amblyopia.[2–4]

Conservative treatments for chalazia are usually the first line treatments offered to patients & include warm compresses and antibiotic-steroid ointments. A combination of these methods usually have a reported success rate of around 25-50%.[3,5]

More invasive treatments for poorly responsive or non responsive pathology include intralesional triamcinolone acetonide (TA) and the incision & curettage (IC) procedure.[6,7]The complications most commonly encountered with triamcinolone acetonide injections are local skin depigmentation, skin atrophy, also in rare cases retinal & choroidal vascular occlusions, anterior segment ischemia and inadvertent globe injury.[8–10] With regards to incision & curettage, Bleeding, lid position abnormalities. Lid notching due to incision to the lid margin, tarsal plate instability due to large incisions were noted. Recurrences were noted in both procedures.[8,9]

Literature has suggested varying success rates, incidences of complications and recurrence rates with the procedures mentioned. Hence this study was performed

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https://doi.org/10.18231/j.ijooo.2022.002

to compare the outcomes of these two treatment methods in a South Indian cohort.

2. Materials and Methods

Inclusion criteria – Consenting patients attending the out-patient department of our hospital, a tertiary eye care institute in Bangalore, India who were subsequently diagnosed with a single chalazion occupying an eyelid in their eyelid/s during the period between October 2020 to December 2020 were enrolled for this study. This study was done keeping in mind the principles of good medical research and the Helsinki declaration. Patients were offered the choice between having intralesional triamcinolone or incision and curettage after explaining the risks, benefits & procedure of both these interventions and an informed written consent was taken. Each of these patients after the procedure were advised to continue hot fomentation & lubricant eyedrops post procedure.

Patients were excluded if they had chalazion that had atypical features, more than one chalazia per eyelid, concurrent eyelid infection, immunocompromised due to various causes and history of previous treatment with either of the 2 modalities being investigated. To avoid bias only chalazia between 4 – 8 mm were chosen in both treatment groups.

One surgeon (B.G) carried out all the TA injections and I&C's. Post operatively the patient's were assessed by one of our several senior optometrists who collected the data & also by Dr B.G.

Both groups of patients underwent ocular examination both before & after the procedure. The data collected included visual acuity, intraocular pressure, together with these the age, sex, duration, initial size & size on follow ups, recurrences if any. Two follow up visits were organised, one after 2 weeks and another being 3 months post-procedure.

A successful treatment outcome was considered when the chalazia reduced in size by 90% of the original.

Procedure of TA injections - the triamcinolone acetonide injection was performed under topical anaesthesia. An intralesional injection of 0.1ml TA with a concentration of 40mg/ml was administered intralesionally using a 26 gauge needle.

Procedure of I&C – the I&C were performed under local anaesthesia using lignocaine 2% with adrenaline. Under aseptic conditions, a chalazion clamp was inserted and a vertical incision was made on top of the affected site. The contents were scooped using a chalazion scoop. Hot compress used while releasing the clamp to secure quick haemostasis & facilitate evacuation of any granulomatous remnants. The patients were then sent home on a course of oral Amoxyclav as per their body weight.

3. Results

In total, 60 patients (22 male and 38 female) with chalazia were enrolled in this study. The TA group included 26 patients (13 male and 18 female), and the I&C group included 25 patients (9 male and 20 female). There was no statistically significant difference between sex distributions in the two groups (P = 0.28).

Table 1: Pre-operative demographic data

	TA group	I&C group	P Value
Number	30	30	
Mean Age ± SD	18 ± 4.2	19 ± 3.4	0.28
Gender			
Male	13	9	0.27
Female	18	20	
Size ± SD	5.2 ± 2.8	5.2 ± 3.6	0.44

SD = standard deviation

The mean age group of patients was between 12 & 26 years with a mean of 18 ± 4.2 in the TA group & 19 ± 3.4 in the I&C group. The age difference distribution in the 2 groups was not significant. The success rates were 80% (24 patients) and 96.67% (29 patients) in the TA & I&C groups respectively. Recurrences were seen in 9 patients in the TA group & 2 patients in the I&C group.

Among the treatment failures in both groups, the size of lesions was less than 50% of the initial size. These patients were then managed conservatively or with I&C as per size & clinical condition. In the TA groups, 6 patients who failed to resolve after the first injection of TA, responded completely to a second injection or I&C procedure. The patient with incomplete resolution following I&C opted for conservative management as she felt that the lesions were not cosmetically significant.

The initial sizes of the chalazia were between 4-8 mm, with a mean of 5.2mm. The mean initial size of the chalazia for the first & second groups was 5.2 ± 2.8 mm and 5.2 ± 3.6 mm, respectively. There was no statistically significant difference noted between the initial size of the chalazion & treatment success rates in both the groups.

46 (76.67%) chalazia were located on the upper lid & 14 (23.3%) chalazia were located on the lower lid. Chalazia location in the two groups did not have significant differences (P = 0.64). Chalazia location had no significant effect on the success rate either (P = 0.25 and P = 0.2 in TA and I&C, respectively). The visual acuity in both groups was unchanged when compared to the pre procedure levels.

The mean intraocular pressure which was measured with a rebound tonometer, on the pre operative visit was 16.69 ± 1.93 & on the 2^{nd} post procedure visits was 16.49±1.08 mmHg and after 3 months was 16.15 ± 1.80 mmHg, respectively (P ~ 1).

There were no complications, except non resolution noted in either treatment group. In the TA group, 9 patients

experienced a recurrence of the chalazia & 2 patients had a recurrence in the I&C group.

Table 2: Post-procedure data

	TA group	I&C group	p-value
Incomplete resolution	6	1	0.05
Recurrence	9	2	0.04
Overall success rate	24	29	0.07

4. Discussion

In this study both intralesional TA injections & I&C were found to be effective treatment modalities for chalazia with success rates of 80% & 96.67% respectively. But the success rate of I&C was found to be higher than that of TA injections

Several publications have reported a success rate of around 50-95% for steroid injections.[3,6] Some studies have shown that intralesional triamcinolone injections were as effective as I&C.[4,11]

Studies also describe that a single TA injection & eyelid massage post injection was as effective as I&C.[10]

Other studies have reported clinical resolution after upto 3 intralesional TA injections regardless of the duration and consistency of the lesion. Literature also suggests I&C is the procedure of choice to treat chalazia of all types, but clinically TA injections could be offered to patients who refuse I&C due to various reasons, also in lesions near the canalicular system & lid margin.[12,13]

Another study reported that in small marginal chalazia, TA injections are of equal efficacy as compared to I&C. While large lesions had better responses to I&C.[14,15] A study showed that older patients, with large lesions, and more chronic pathology were more likely to be responding to I&C, whereas in less chronic & smaller lesions equal success rates were noted in both TA & I&C groups.[16,17]

Our study shows that apart from the success rates, there is not much of a difference in terms of safety profile or risk of recurrence seen in both procedures respectively. This is similar in comparison to a majority of currently available literature.

Among the side effects reported with the use of intralesional TA, an increase in intraocular pressure & skin depigmentation are the most common.[15,16] However in our study we did not encounter such occurrences. This might probably be due to genetics of the south Indian population who are naturally dark skinned, also there is not much literature available describing the incidence of steroid responders or any population specific data suggesting that the south Indian population is at a high risk of developing ocular hypertension.

Limitations of the study include a small sample size & a fixed time scale of review appointments making accurate monitoring of the speed of resolution less possible.

To conclude, both TA injection and I&C are effective treatment modalities for chalazia. The advantages of I&C in comparison to TA include less recurrences and higher success rates.

5. Conflict of Interest

The authors declare that there are no conflicts of interest in this paper.

6. Source of Funding

None.

References

1. Bagheri A, Hasani HR, Karimian F. Effects of chalazion on refractive error and corneal topography. *Bina J Ophthalmol*. 2007;12(4):504–10.
2. Bagheri A, Tavakoli M, Saloor H. Epidemiology of eyelid skinmasses over a 10- year period at Labbafinejad Medical Center. *Bina J Ophthalmol*. 2013;18(3):257–64.
3. Unal M. Chalazion treatment. *Orbit*. 2008;27(6):397–8. doi:10.1080/01676830802623174.
4. Simon GB, Rosen N, Rosner M, Spierer A. Intralesional triamcinoloneacetonide injection versus incision and curettage for primary chalazia: a prospective, randomized study. *Am J Ophthalmol*. 2011;151(4):714–8.
5. Yagci A, Palamar M, Egrilmez S, Sahbazov C, Ozbek SS. Anteriorsegment ischemia and retinochoroidal vascular occlusion after intrale- sional steroid injection. *Ophthal Plast Reconstr Surg*. 2008;24(1):55–7.
6. Aycinena AR, Achiron A, Paul M, Burgansky-Eliash Z. Incision and curettage versus steroid injection for the treatment of chalazia: a meta-analysis. *Ophthalmic Plast Reconstr Surg*. 2016;32(3):220–4.
7. Wong MY, Yau GS, Lee JW, Yuen CY. Intralesional triamcinolone ace-tonide injection for the treatment of primary chalazions. *Int Ophthalmol*. 2014;34(5):1049–53.
8. Hoşal B, Zilelioglu G. Ocular complication of intralesional corticoste-roid injection of a chalazion. *Eur J Ophthalmol*. 2003;13(9):798–9. doi:10.1177/112067210301300 9-1012.
9. Park J, Chang M. Eyelid fat atrophy and depigmentation after an intra-lesional injection of triamcinolone acetonide to treat chalazion. *J Craniofac Surg*. 2017;8(3):198–9.
10. Goawalla A, Lee V. A prospective randomized treatment studycomparingthree treatment options for chalazia: triamcinolone acetonide injections,incision and curettage and treatment with hot compresses. *Clin Exp Ophthalmol*. 2007;35(8):706–12.
11. Simon GB, Huang L, Nakra T, Schwarcz RM, McCann JD, Goldberg RA, et al. Intralesional triamcinolone acetonide injection for primary and recurrentchalazia: is it really effective? *Ophthalmology*. 2005;112(5):913–7. doi:10.1016/j.ophtha.2004.11.037.
12. Dhaliwal U, Bhatia A. A Rationale for therapeutic decision-making inchalazia. *Orbit*. 2005;24(4):227–30.
13. Mustafa TA, Oriafage IH. Three methods of treatment of chalazia inchildren. *Saudi Med J*. 2001;22(11):968–72.
14. Khurana AK, Ahluwalia BK, Rajan C. Chalazion Therapy. Intralesional steroids versus incision and curettage. *Acta Ophthalmol*. 1988;66(3):352–4.
15. Kim E, Yu S, Jeong B, Lee K, Mun H. The Effects of intralesional steroid injection for chalazion according to the concentrations of triamcinoloneacetonide. *J Korean Ophthalmol Soc*. 2013;54(3):396–400.
16. Lee YJ, Park CY, Woo KI. Ocular hypertensive response to topical dexamethasone ointment in children. *Kor J Ophthalmol*. 2006;20(3):166–70.
17. Nabie R, Soleimani H, Nikniaz L, Raoufi S, Hassanpour E, Mamaghani S, et al. A prospective randomized study comparing

incision and curettage with injection of triamcinolone acetonide for chronic chalazia. *J Curr Ophthalmol*. 2019;31(3):323–6.

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Cite this article: Natarajan M, Govindaraj B. A prospective study comparing incision and curettage with intralesional injection of triamcinolone acetonide for treating chalazia in South Indian population. *IP Int J Ocul Oncol Oculoplasty* 2022;8(1):12-15.