COMPARISON OF INTRALESIONAL TRIAMCINOLONE ACETONIDE INJECTION AND INCISION CURRETAGE IN RESOLUTION OF PRIMARY CHALAZIA IN A TERTIARY CARE CENTRE

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ABSTRACT

Objective: To compare effectiveness of intralesional triamcinolone acetonide injection and incision curettage in the resolution of primary chalazia.

Materials and methods: It was a Randomized clinical trial conducted during September 2012 to March 2013 at the Department of Ophthalmology, Sir Ganga Ram Hospital, Lahore.A total of 250 diagnosed cases of primary chalazia were included in the study. In order to compare the effectiveness of treatment modalities, about 125 cases were assigned each into group A and B randomly. The patients in group A were treated with incision and curettage, while the patientsin group B were treated with intralesional injection of triamcinolone acetonide. The patients were followed up to 2 weeks after the procedures to see the resolution of the lesion. Treatment was considered successful if resolution was achieved in the lesion. Resolution was considered to be achieved if the lesion had regressed and there was normal function and appearance of the eyelid. Treatment failure was considered if there was no resolution in the lesion.

Results: A total of 250 cases of chalazion were included in the study. The age of study population ranged from 20-60 years, with mean 40.33 ± 11.18 SD years. Cases were randomized into two group, A and B. In Group A, out of 125 cases, about 57(45.6%) cases were in age range of 20-40 years, while remaining 68 (54.4%) cases were in age range of 41-60 years. In group B, out of 125 cases, about 53(42.4%) cases were in age range of 20-40 years, while the remaining 72(57.6%) cases were in age range of 41-60 years. In group A, about 74(59.2%) cases were males, while in group B, about 81 (64.8%) cases were males. Successful resolution was achieved by about 91(72.8%) cases in Group-A, and 73(58.4%) cases in Group B. p-value was calculated as 0.015, which shows a significant difference between the two groups.

Conclusion: Incision curettage is more effective than intralesional triamcinolone acetonide injection in the treatment of primary chalazia.

Keywords: Primary chalazia, treatment, resolution, incision curettage, intralesional triamcinolone acetonide injection.

This article may be cited as: Rehman HU, Rana T, Jehangir K, Waqas M. Comparison of intralesional triamcinolone acetonide injection and incision curretage in resolution of primary chalazia in a tertiary care centre. Adv Basic Med Sci. 2018;2(2): 58-62.

INTRODUCTION

Chalazion is a common benign inflammatory eyelid disorder[1-4]. It is also known as a meibomian gland lipogranuloma. It manifests as localized area of chronic granulomatous inflammation causing swelling and drooping of the eyelid[3-5]. It occurs due to obstruction of meibomian glands, which in turn may be due to infection or inflammatory processes[3,6]. Extravasation of secretion of the meibomian gland into the adjacent tissue may be responsible for the inflammation in eye lid[7].Chalazia develop gradually as hard mass in the tarsal plate and finally results in swelling of upper eyelid[3]. It may cause drooping of the

upper eyelid, conjuctivitus and corneal astigmatism[3,4,6]. All these lead to impairment in vision, apart from giving unsightly appearance of eye[3-5].
Chalazia are quite common condition of the eyelid[6]. It is widespread in the general population, and are a common cause of morbidity in all ages[6,8]. The prevalence of chalazia in USA is reported to be 39% [9,10].This condition has also been noted in nearly half of the contact lens wearers[11,12]. As early as 1978, an association was seen between meibomian gland secretion abnormality and contact lens intolerance[13,14].
In most of the cases, chalazia disappear by itself within weeks to months without any treatment[3,15]. However, they often recur. So in majority of the cases, chalazia require treatment[3]. Initially, conservative treatment is given[3,5,6]. Conservative treatment consists of maintaining good eyelid hygiene, using topical antibiotics, and hot compresses[3,5,6,15-19]. If the lesion does not disappear, then surgical treatment is given15. The surgical treatment consists of either intralesional injection of corticosteroid or incision and curettge[3,6,15,20]. Incision and curettage is one of the most commonly done surgical procedure for chalazia6.Incision curettage and triamcinolone injection have reported success rates of 87–89% and 62–92%, respectively[5].
Intralesional steroid is used because the inflammatory cells in chalazia are sensitive to steroids[16,21]. It involves the injection of 0.1-0.3ml of triamcinolone acetonide into the conjunctiva16,21. Another treatment modality for chalazion is incisional curettage. It is done under local anaesthesia. The procedure involves making an opening in the cyst draining the inflammatory debris out, and curetting the cyst wall. This results in an empty, clean meibomian duct after surgery[22].
The present study was conducted to compare the effectiveness of incision curettage and triamcinolone acetonide injection in resolution of primary chalazia.

METHODOLOGY

It was a Randomized clinical trial conducted during September 2012 to March 2013 at the Department of Ophthalmology, Sir Ganga Ram Hospital, Lahore. The non-probability consecutive sampling technique was used. A sample size of 250 cases (125 in each group) was calculated with 80% power of test, 5% level of significance and taking expected percentage of resolution of primary chalazia in both groups i.e:79% in incision curettage group versus 62% in triamcinolone injection group5,15

Inclusion criteria:
1. Patients with primary chalazion (non-infected)
2. Age range from 20-60 years
3. Normal lid anatomy with no scaring, entropian and ectropian.

Exclusion criteria:
1. Patients with associated diseases of lid margin like stye, meibominitis, blephritis, ectropion, andentropion, (introduced bias in study).
2. Patients having previous history of chalazion were excluded (introduced bias in study).
3. Patients with uncontrolled diabetes mellitus and hypertension, (detected on taking history and lab investigations).

After approval from hospital ethical committee, 250 patients were enrolled from Eye OPD of Sir Ganga Ram Hospital, Lahore. Informed consent was taken. All procedures (incisional curettage and intralesional injection) were performed by a surgeon under local anaesthesia (lignocaine 2%) by dividing patients in two groups by lottery method (block randomization). One group (Group A) was treated by incision curettage while other group (Group B) received intralesional injection of triamcinolone acetonide.
In group A, the involved eye was cleaned with pyodine and spirit swab and patients were draped. A 1-mL subcutaneous injection of 2% lignocaine with a 25gauge needle was used to anaesthetize the eyelid.Conjunctiva was anaesthetized with a drop of 0.5% proxymethocaine. The chalazion clamp was placed over lid nodule and lid everted. Incision and curettage of the chalazion was done, using feather blade no-11 for incision, and curettage of chalazion cavity to break up loculations and achieve drainage.
In group B, after cleaning and anaesthetizing the conjunctiva with a drop of 0.5% proxymethocaine, the eyelid was everted and triamcinolone injection 0.1-0.2ml (40mg/ml) was injected with 271/2G needle into the chalazion.
Treatment was considered effective if complete resolution was achieved. Complete resolution of chalazion was considered if there was no palpable lesion at the location of the original chalazion and normal lid anatomy on 15th follow-up day in both procedures.
The data was analysed by using SPSS version 17. Pearson Chi square test was used for the two treatment modalities for assessing the resolution of disease. The statistical difference between the two treatment modalities was calculated and P value was determined. The difference was considered statistically significant if the P-value was less than 0.05.

Quantitative variable(numerical data) like age was presented in the form of mean±SD. Qualitative variables like gender and complete resolution was presented in the form of frequency and percentages.

RESULTS

A total of 250 cases with primary chalazia were included in the study. Age of the study sample ranged from 20 - 60 years, with mean of 40.33 ± 11.18 SD years. In order to compare resolution of primary chalazia by incision curettage and intralesional triamcinolone acetonide injection, 125 cases were enrolled each into group A and B.

Age distribution of patients in group A and B is shown in table 1. Gender distribution in both groups is shown in table 2. Frequency of Resolution in both groups is shown in table 3. Stratification for frequency of resolution in both group with regards to age is shown in table 4. Stratification for frequency of resolution in both groups with regards to gender is shown in table 5.

Table-1: Age distribution of 250 cases (125 in each group) of primary chalazia

Age (in years)	Group-A (n=125)		Group-B (n=125)	
	No. of patients	%	No. of patients	%
20-40	57	45.6	53	42.4
41-60	68	54.4	72	57.6
Total	**125**	**100**	**125**	**100**

Table-2: Gender distribution in 250 cases (125 in each group) of primary chalazia

Gender	Group-A (n=125)		Group-B (n=125)	
	No. of patients	%	No. of patients	%
Male	74	59.2	81	64.8
Female	51	40.8	44	35.2
Total	**125**	**100**	**125**	**100**

Table-3: Gender distribution in 250 cases (125 in each group) of primary chalazia

Resolution	Group-A (n=125)		Group-B (n=125)	
	No. of patients	%	No. of patients	%
Yes	91	72.8	73	58.4
No	34	27.2	52	41.6
Total	**125**	**100**	**125**	**100**

P value = 0.016

Table-4: Stratification for frequency of resolution in both groups with regards to age (n=250)

Age (in years)	Group-A (n=91)		Group-B (n=73)	
	No. of patients	%	No. of patients	%
20-40	39	42.86	29	39.73
41-60	52	57.14	44	60.27
Total	**91**	**100**	**73**	**100**

Table-5: Stratification for frequency of resolution in both groups with regards to gender (n=250)

Gender	Group-A (n=91)		Group-B (n=73)	
	No. of patients	%	No. of patients	%
Male	53	58.24	46	63.01
Female	38	41.76	27	36.99
Total	**91**	**100**	**73**	**100**

DISCUSSION

Eyelid disorders are very common in general population[23,24]. Chalazion is one of the commonest eyelid disorder that is seen by ophthalmologists in day to day practice[1,25,26].It may resolve by itself in 25-50% cases, yet its management is a challenge as it recurs and is often resistant to treatment[20,27]. Treatment option includes steroid injections, carbon dioxidelaser treatment, lesion excision and curettage or total excision[27]. Success rates for incisional curettage and intralesional steroid injection are 87-89% and 62-88%, respectively[5,15] In the present study, incision and curettage showed better results as compared to intralesional triamcinolone injection in resolution of chalazia. About 72.8% cases showed complete resolution in response to incision curettage in group A, as compared to 58.4% cases in group B, who showed complete resolution to intralesional triamcinolone acetamide injection. The p-value was calculated as 0.015, which shows a significant difference between the two groups. The results of the present study are comparable to various studies done so far[5,15,28].

In a study done by Lee JW from Korea in 2014, the success rate of triamcinolone acetonide injection was 86.8% while that of incision and curettage was 92.1%[28]. Thus Lee JW showed that incision curettage had better results as compared to injection of triamcinolone acetamide[28]. In another study done by Zorlu F, cure rate of triamcinolone acetamide injection and incision curettage was 88% and 95% respectively[29]. Thus Zorlu F also showed that incision curettage had better results in their study[29]. Ayecinena AR reported the meta analysis from 8 studies in 2016, showing that triamcinolone injection and incision curettage had success rate of 60.4% and 78% respectively[30]. In study done by Goawalla A in 2007, resolution rate with trimcinoloneacetonide injection and incision curettage was 84% and 87% respectively[7]. Similarly, Ahmad S compared the outcome in terms of complete resolution of primary chalazia and found that 79% resolution in case of incision curettage versus 62% in case of steroid injection[31]. All these studies report findings that are same as reported in the present study. However, in a study done by Ben Simmon in 2011, triamcinolone injection showed success rate of 81% as compared to 79% in incision curettage, showing almost same success rates of both the treatment modalities[20]. Lee G also reported equal success rates in both the treatment methods[32]. This is contrary to that reported in the present study.Cure rates by incisional curettage are comparatively better as compared to intralesional triamcinolone acetamide injection[21,31]. So, surgical excision remains a better and reliable option if conservative therapy or intralesional injection fail.

CONCLUSION

The study showed that on comparison of resolution of primary chalazia, incision curettage had better results than intralesional triamcinolone acetonide injection, and should be considered if conservative treatment fails.

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