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Role of Intralesional Triamcinolone Acetonide Injection Nonsurgical Technique of Treatment of Chalazion Inbundelkhand Region: Observational Study

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Abstract: *In my study we concluded that intralesional injection of triamcinolone acetonide (TA) has the advantage of being a simple, fast and less painful procedure while treating children, patients having local or systemic hypersensitivity reactions to local anaesthesia and in chalazia located close to the lacrimal drainage system. In my study the majority of the patients are female as compared to male with average age of 25.7 ± 8.53 and average size of chalazion is 7.32 mm. Maximum no. of chalazion were noted in RUL (45%) followed by LUL (35%). 15% of chalazions resolving start in first weeks after injection, 50% of chalazions completely resolved in 2 weeks after injection and 80 % of chalazions resolved in 4 weeks, whereas 20% of chalazions did not decrease in size by 2 weeks and were given second TA injection after which 25% resolution was achieved (out of 8 patients) post the management. Complete resolution of the chalazion was brought about in 80% of the patients after 4 weeks. One injection was sufficient in most cases and only 8 needed a second injection.6 patients (Out of 8) not cured by second dose of TA required incision & curettage (I& C) of chalazion.*

Keywords: *Triamcinolone acetonide (TA), Chalazion, Eye lid, Incision & Curettage (I& C).*

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I. Introduction

A chalazion is a chronic granuloma of an eyelid that develops because of retention of the secretions of a meibomian gland. After an acute inflammatory stage, it persists as a lump a few millimetres in diameter that may slowly enlarge. The histopathological appearance may vary, but characteristically the lesion is a granuloma rich in epithelioid and giant cells. Lymphocytes, neutrophils, and eosinophils may also be plentiful. It is a common condition that affects people of all ages. The chief effects are cosmetic disfigurement with variable discomfort, and sometimes significant astigmatism[1].In a recent study[2] it was shown that 25% or more of chalazions resolve spontaneously. It was reported in other studies that there was 25 to 50% success rate after conservative management but higher percent of chalazion reacts to surgical treatment which includes intralesional steroid injection, CO2, laser therapy and incision and curettage of chalazion on with success rate of 60-90% [3,4,5].It can affect superior or inferior part of eyelids[6]. It is seen in all age groups and most frequently in females[7].There is a slight possibility to induce refractive problems among children or blurred vision due to induced astigmatism by pressing on corneal surface and mechanical ptosis if it is too large. It is also associatedwithcosmeticdisfigurement,irritationandconjunctivitis[6,8,9].The standard treatment of these lesions is by incision and curettage, which, though a minor procedure, often causes discomfort and some distress to the patient. It usually necessitates wearing a pad and bandage afterwards, which means that the patient should not drive. The aim of the study was to determine whether injecting chalazions with triamcinolone acetonide is an effective form of treatment, as well as quick and convenient.

Causes of Chalazion: -
Chalazion can be associated with various underlying causes, and management should be tailored according to the aetiology.

Inflammatory. In the majority of cases of chalazion, inflammatory conditions such as seborrheic dermatitis, acne rosacea, and chronic blepharitis are present.

Viral infection. Chalazion may be associated with viral conjunctivitis, so patients should be carefully examined for diffuse follicular conjunctivitis. Additionally, preauricular lymph nodes should be palpated, and the patient

should be questioned regarding previous ocular viral disease. If a viral aetiology is suspected, the use of intralesional corticosteroids should be avoided.

II. Material and methods

A total of 40 Patients who were recognized as a case primary chalazion, were included in this prospective cross-sectionalstudy conducted in the Department ofOphthalmology, Maharani Laxmi Bai Medical College,Jhansi, Uttar Pradesh, India over a period of 6months fromApril2019 to September.2019. The procedures followed were inaccordance with the ethical standards committee on humanexperimentation (institutional or regional) and with theHelsinki Declaration of 1975, as revised in 2000. Thenecessary permission from the Ethical and ResearchCommittee was obtained for the study.

Inclusion criteria

- The any patients of primary chalazion come with size ≥ 5mm
- In out-patients department of age group 10 or more than 10 years to be studied
- Both male and female patients were included in the study.

Exclusion criteria

- Recurrent chalazion & multiple chalazion.
- Very small chalazion (less than 5mm)
- Patients below 10 years of age.
- Infected chalazion with associated infection like pre -septal cellulitis
- Patient was found to have hypersensitivity to local anesthetic drug like lignocaine

An assessment of present complaints, detailed clinicalhistory (present and past), and history of any ocularsurgery, Age, sex,socio-economic status, was recorded.

Ophthalmologicalcheck-up as external examination of the eyes, visual acuity by Snellen chart,diffuse torch light examination, slit lamp examination, Intra ocular pressure (IOP) by Non-Contact Tonometer, Fluoresceineye staining, refraction, specific examination of the chalazion including size (measure by Castroviejo calliper), its location, duration, extent was done.Some special cases B-scan, Anterior segment OCT to rule out other condition similar to chalazion was also done.

Informed consent was taken prior to the procedure. Topical anaesthesia with proparacaine 0.5 % eye drops were instilled prior to the procedure in the affected eye. 10% betadine was used to thoroughly clean the chalazion site. A twenty-six-gauge (26G) needle over a 1ml syringe was taken into used for injecting 0.2ml of 4 mg of Triamcinolone acetonide (TA) intralesional through transcutaneous into the chalazion. After the administration of the drug, no local antibiotic or eye bandage was given. Patching was also not done after the procedure.

III. Observations &Results

Table 1: Sex wise patients' distribution

	Male	Female
No. of patients	16	24
Percentage (%)	40%	60%

Table 2: Age wise patients' distribution

Age groups (in years)	No. of patients	Percentage (%)
10-20	12	30%
21-30	16	40%
31-40	8	20%
41-50	4	10%
Total	40	100%

Table 3:chalazion site in eye lids of patients

Site	Right eye	Left eye	Total
Upper lid	18	14	32
Lower lid	5	3	8
	23	17	40

Table 4: Treatment results

Fallow up Period	After post operation	Intralesional triamcinolone injection
First visit- after 7 days	Resolving start	6 (15%)
Second visit – after 14 days	Resolution	20 (50%)
Third visit- one month	Resolution	32 (80%)
Repeat treatment required	After 14 days from first Triamcinoloneacetonide injection	8 (20%)
Repeat TA	Resolution after 14 days	2 (25%)
Injection TA Completely failure	Required incision and curettage	6 (75%)

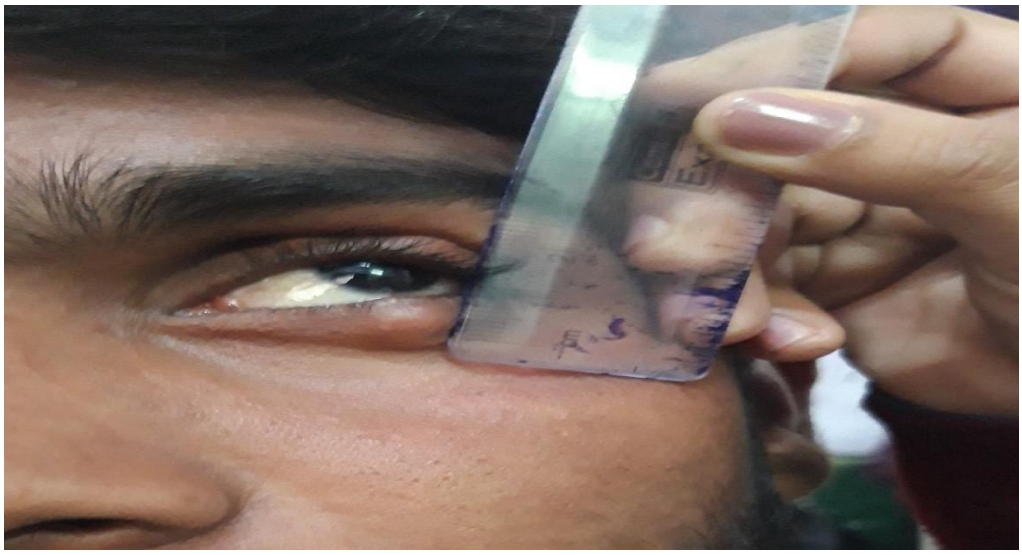

Figure1: -Left eye showing measuring size of Chalazion

IV. Discussion

In our study the male female ratio was 0.67:1 and most common affected age group was 21-30 years (40%) followed by 10-20 years of age group (30%).

A prospective randomized study by Goawalla and Lee[10] compared3 methods of chalazion treatment: intralesional triamcinolone acetonide (TA) injections (0.2 mL of 10 mg/mL), I&C, and the use of hot compresses. They found that after 3 weeks, a single TA injection followed by lid massage resulted in chalazion resolution in 84% of patients, compared with 87% resolution in the I&C group; 46% of the hot compress group reported resolution at 3 weeks. Moreover, patients in the TA group reported experiencing less pain and inconvenience than I&C patients. The results were based on patients' self-reporting in a telephone survey, however, and it could be argued that the researchers did not rely on objective methods to evaluate resolution.

A more recent prospective randomized trial by Ben Simon and colleagues[11] was supportive of these results, finding that intralesional TA injection is as effective as I&C in primary chalazia: 81% of patients in the TA group and 79% in the I&C group achieved resolution after 1 treatment. This study used clinical evaluation and digital photography to assess resolution.

When it comes to time required for resolution, Pavicic-Astalos et al.,[12] noted that 95 % of chalazions reduced in size by 80% without recurrence after an intralesional TA injection of 4 – 8 mg, with a mean time of 15.27 days, which is similar to our outcome (15.7 ± 10.0 days). About the route of administration, TA injections can also be given subcutaneously, outside the lesion. Ho and Lai found that by using 2-mg subcutaneous TA injection 54.2 % of chalazions resolved completely with single injection and 35.4 % resolved after two injections[13].In their series, two patients also developed depigmentation over the site of the injection. Also, Chung et al.,[14] reported that 93.8% of chalazions complete resolution with a 3-mg subcutaneous TA injection. Simon GJ et al.,[15] reported that complete resolution was obtained in 33(79%) of 42 patients in the I&C group and in 42(81%) of 52 patients in the TA group.

In my study the majority of the patients are female as compared to male with average age of 25.7 ± 8.53 and average size of chalazion is 7.32 mm. Maximum no. of chalazion were noted in RUL (45%) followed by LUL (35%). 15% of chalazions resolving start in first weeks after injection, 50% of chalazions completely resolved in 2 weeks after injection and 80 % of chalazions resolved in 4 weeks, whereas 20% of chalazions did not decrease in size by 2 weeks and were given second TA injection after which 25% resolution was achieved (out of 8 patients) post the management. Complete resolution of the chalazion was brought about in 80% of the patients after 4 weeks. One injection was sufficient in most cases and only 8 needed a second injection. 6 patients (Out of 8) not cured by second dose of TA required incision & curettage(I& C)of chalazion.

V. Conclusion

In my study we concluded that intralesional injection of triamcinolone acetonide (TA) has the advantage of being a simple, fast and less painful procedure while treating children, patients having local or systemic hypersensitivity reactions to local anaesthesia and in chalazia located close to the lacrimal drainage system. The conventional surgery i.e., incision & curettage takes longer time, requires injection of local anaesthesia and may also be associated with increased rate of complications like pain, scarring and haemorrhage. Also, patching of the eye is often required after the procedure.Advantages of injection over incision and curettage are that it is quicker, requires no special instruments, is less painful than injection of local anaesthetic, and does not require dressing (so that patients can drive immediately afterwards). No complications occurred in the trial.Two previous trials of injection of chalazions have been reported[16,17].The only complication reported was a yellow deposit in the skin of a black patient. However, in this case the injection had been transcutaneous. Temporary atrophy of skin in the region of intradermal steroid injections is a recognised problem, though it did not occur in the two previously mentioned trials.Furthermore, a transconjunctival approach lessens the risk of inadvertent intradermal injection when treating a chalazion.

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