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Efficacy of Topical Anesthetic (Lignocaine Gel 2 %) in Chalazion Surgery

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Objective: To assess the efficacy of 2% lignocaine gel for pain control in incision curettage of chalazion.

Materials and methods: The study was carried out at Mayo hospital Lahore from January 2015 to June 2015. 57 patients were inducted in the study out of which 29 were male and 28 were females. Pain experienced by the patients during surgery was assessed by using visual analogue scale, ranging from 0 to 10.

Results: The mean total pain score on visual analogue scale (0 to 10) was 4.4, and important thing is that application of gel has got no pain sensation. Overall, the female patients experienced more pain on visual analogue scale 4.8 with range of 3.5 to 7.0. The male patients recorded average of 4.0 score on visual analogue scale with a range of 2.5 to 6.0.

Conclusion: 2% lignocaine gel was found to be effective and less painful for chalazion excision. It also reduces the chances of injection related complications.

Key words: Chalazion, chalazia, meibomian cyst.

Introduction:

A chalazion (meibomian cyst) is a chronic granulomatous inflammatory lesion caused by blockage of meibomian gland opening and stasis of secretions in the gland. Meibomian glands secretions are sebaceous in nature. They may present with cosmetic disfigurement, pain or pressure effect on the cornea leading to astigmatism and reduced visual acuity. More than half of the chalazia are cured with topical medication or hot fomentation within 15 to 30 days.[1] However, if it is not cured with topical medication then surgical intervention is required. Many methods have been used for treatment, for small and marginal chalazia the use of intralesional steroids can produce good results. Incision and curettage is the treatment of choice for larger chalazia.[2] A large number of patients with chalazion will therefore require surgical intervention for complete cure.

Surgery for chalazion i.e. Incision and curettage is usually done under subcutaneous local anaesthetic injections of lignocaine (lidocaine) 2%. Most common complications are bleeding and/or haematoma formation around the site of injection. Rarely damage to the ocular structures from misdirected needle may occur. Application of lignocaine solution through the skin and deeper subcutaneous tissues can produces pain,[3] and burning sensation.[4,5] Most patient are afraid of surgery only because of injection pain.

The use of topical anesthesia in ocular surgeries has significantly increased in past few years. For cataract extraction use of Lignocaine gel 2% is increasing day by day.[6,7] As incidence of chalazion in children is more[8,9] and if medical intervention fails, surgical drainage under local anaesthesia is really impossible. Subcutaneous injection of anaesthesia is a painful maneuver. If the patient is not cooperative, the risk of globe trauma from needle is increased. General anaesthesia is costly and has its own complications and availability of trained anesthetist is mandatory. Any method of achieving painless local anaesthesia may potentially reduce general anaesthesia associated complications and limitations for chalazion surgery in young patients.

Lignocaine gel is applied directly to the skin or on the palpebral conjunctiva. Incision is given in the palpebral conjunctiva. 2% Lignocaine gel can be of use particularly for cooperative children and adults [10]

Materials And Methods:

An approval was taken from ethical committee. The study was carried out at Mayo hospital Lahore from January 2015 to June 2015. Informed consent was taken from 57 subjects, for incision curettage of chalazion. Age of all the patients was 12 years or more. Additionally those with repeated surgeries or trauma to lids were also excluded. Patients already suffering from ocular diseases or any other systemic illness for which they were using regular analgesics were excluded from the study. Patients suffering from any medical or psychological problem which could have led them to altered pain perception and also those subjects in whom scores of pain could not be assessed perfectly were also excluded.

A written consent was obtained after explaining all the process and surgeries performed only on those patients who willfully signed the consent form. All the patients were reassured that subcutaneous injections of lignocaine solution or oral pain killer would be given readily in case of insufficient analgesia or inability to bear the pain during the procedure.

After ensuring thorough asepsis, 1.5 ml of lignocaine gel 2% was applied around the chalazion. Gel was applied on the skin of the lids and also on the palpebral conjunctiva. 5 minutes were given to allow the anesthetic action to set in fully. Then we proceeded with the surgery i.e. incision and curettage. Standard surgical procedure was to use a chalazion clamp large enough to cover whole the chalazion so that good homeostasis was achieved. Incision was then made in the vertical direction onto the underlying palpebral conjunctiva. Secretions were drained and scooped out with a curette. It was made sure that in all the cases thorough curettage was done and no remnants were left behind.

The surgery was completed by instilling antibiotic ointment and padding the operated eye with pressure bandage for one day. Immediately after the surgery, the patient still being in the operating room, the pain experienced during the surgery was assessed by the evaluator. As all the patients received topical gel, the pain score was a representation of any pain ensuing as a result of application of the gel and whole surgical procedure. A visual analogue scale was used to assess pain which has range from 0 - 10. Zero score represented no pain and score of 10 indicated the most severe pain. Scoring was explained to each patient and s(he) had to put a dot in between 0 –10 on visual analogue scale.

Results:

Fifty seven subjects were included in the study (n = 57) with 29 male and 28 females. The mean age of subjects was 25.5yrs males and 28 yrs for females.

The mean total pain score on visual analogue scale (0 to 10) in the patients undergoing incision and curettage of chalazion with lignocaine gel application was 4.4, and most important thing to notice is that application of gel has got no pain sensation.

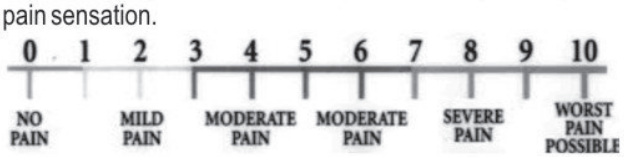

Figure 1 Visual analogue pain scale

Out of all the 29 male patients 12 had chalazion in the upper lid and 17 had it in the lower lid. In the female group there were 28 patients out of which 12 had it in the upper lid and 16 had it in the lower lid. Statistically there was no significant difference at the 5% level of significance in the means scores of pain between the chalazion of two lids i.e. upper and lower in male or female groups.

Overall, the female patients experienced more pain on visual analogue scale (4.8 with range of 3.5 to 7.0) for the entire procedure including the application of topical gel. The male patients recorded average of 4.0 score on visual analogue scale with a range of 2.5 to 6.0.

Discussion:

Since all of the treatment given was in one hospital, all the surgeries were performed in same settings and the pain score was evaluated immediately, compliance problems or losses to follow-ups were minimal.

There was no difference of age between males and females as both have comparable age groups. This reduces any potential bias. Out of all the subjects included in study, all of the patients were able to tolerate the pain of incision and curettage procedure and not a single subject refused completion as a result of inadequate analgesia and unbearable pain. All patients received the full pre-decided treatment. None of the subject required conversion to conventional subcutaneous injection anesthesia due to inadequate anesthesia by lignocaine gel.

Ideally the treatment team, evaluators and patients should be kept ignorant of group allotment and treatment group. We had considered the use of methylcellulose as placebo in place of gel, measure pain score and compare both groups. But keeping in mind the amount of pain in the procedure, Placebo gel was not used for surgery and due to this we were not able to achieve complete blinding.

Another potential bias in our study was the surgeon variation. We tried to minimize this variation by including surgeons with same level of experience.

We would also like to share that we can increase patients comfort by following some of the tips gained from verbal feedback of patients. Although with use of gel the pain sensation is reduced but the chalazion clamp has its own pressure effect by clamping the chalazion, which is the most unpleasant part of surgery. So by keeping the clamp time as short as possible we can reduce patient's discomfort. We may also consider putting small amount of lignocaine gel 2% with the help cannula into the incision before curettage. Immediate pressure patching the eye postoperatively for 5 minutes (or until haemostasis is achieved) with lignocaine gel 2% can also reduce pain.

Conclusion:

We conclude that 2% lignocaine gel is effective in lowering pain in chalazion surgery especially it reduced the pain related with anesthetic injection. This is particularly useful method of anaesthesia in patients who have fears of injection upto distressing level and for those patients in whom risk of needle related injuries is higher due to poor cooperation.

References:

1. Bohigian GM. Chalazion: a clinical evaluation. Ann Ophthalmol 1979;11:1397–8.
2. Khurana AK, Ahluwalia BK, Rajan C. Chalazion therapy. Intralesional steroids versus incision and curettage. Acta Ophthalmol (Copenh) 1988;66:352–4.
3. Bell RW, Butt ZA, Gardner RF. Warming lignocaine reduces the pain of injection during local anesthetic eyelid surgery. Eye 1996;10:558–60.
4. Morris RW, Whish DKM. A controlled trial of pain on skin infiltration with local anesthetics. Anesthetic Intensive Care 1984;12:113–4.
5. Morris RW, McKay W, Mushlin P. Comparison of pain associated with intradermal and subcutaneous infiltration with various local anesthetic solutions. Anapest Analg 1987;66:1180–2.
6. Koch PS. Efficacy of lidocaine 2% jelly as a topical agent in cataract surgery. J Cataract Refract Surg1999;25:632–4.
7. Harman DM. Combined sedation and topical anesthesia for cataract surgery. J Cataract Refract Surg 2000;26:109–13.
8. Sunders DH, Flanagan JC. Disorders of the lid. In: Nelson LB, Calhoun JH, Harley RD, eds. Pediatric ophthalmology. 3rd ed. Philadelphia: WB Saunders, 1991:334–54.
9. Ostler HB. Chalazia. In: Diseases of the external eye and adnexae. Baltimore: Williams and Wilkins, 1993:775–6.
10. Wessels IF, Wessels GF. Lidocaine-prilocaine cream for local-anesthesia chalazion incision in children. Ophthalmic Surg Lasers 1996;27:431–3.