

DCR Local Anesthesia (A New Technique)

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In DCR local anesthesia achieves dual purpose. Firstly, it helps in anesthesia. Secondly, Adrenaline added to the anesthetic agent creates decongestion¹, which helps in an avascular operation field. The old technique involves an injection of large amount of anesthetic agent, which can result in lignocaine reaction, and adrenaline associated problems². In the new technique only 1.5–2.0 ml of local anesthetic agent is injected which is highly safe and effective. There is also minimal distortion of local anatomy. In this study, two hundred and sixty five patients were given local anesthesia with new technique. Only six needed to have their anesthesia repeated, sixteen had a persistent ooze. No one had adrenaline related problems. This technique is a safe and effective way of providing anesthesia for DCR.

Key words: DCR, nasolacrimal duct obstruction, lacrimal duct obstruction, medial palpebral ligament

DCR or dacryocystorhinostomy is a time tested procedure for the alleviation of naso-lacrimal duct obstruction. Different anaesthetics have been used for the operation. DCR under local anaesthesia has many advantages over a general anaesthetic.

Firstly, there is reduced per-operative ooze because of decongestion. After rhinostomy there is postoperative nasal ooze after DCR. This can increase greatly by Vasalva's manoeuvre due to post operative retching after general anaesthesia. This is highly distressing for a patient just coming out of G/A. Moreover, postoperative sitting posture which helps in decreasing the ooze is not immediately possible after general anaesthesia.

After local anaesthesia the patient is able to sit up immediately take some food and go to the toilet. He can take analgesic by mouth. This greatly reduces burden on attendants for post operative care. Therefore surgeons prefer local anaesthesia for DCR whenever possible. In the past large doses of local anaesthetics have been injected to achieve the desired anaesthesia. This resulted in distorted anatomies making operations difficult. Secondly, lignocaine reactions and adrenaline related complications have been reported resulting in deaths of individuals. Therefore, it was necessary to devise a method whereby a small amount of local anaesthetic would suffice to achieve desired results.

Materials and methods

All adult patients both male and female consenting to have operation under local anesthesia were included in this study. The study was carried out in the Institute of Ophthalmology, Mayo Hospital, Lahore over the period of five years.

Preoperative assessment of the patients was made. Patients with diabetes and Hypertension had their problems controlled by the Physicians. Heart patients were excluded from the study. Preoperative sedation with 5 mg Valium was given. A 5 ml mixture of lignocaine and Bupicaine in equal amounts was prepared. To this was added 0.1 ml of adrenaline. In the quadrilateral depression

above the medial palpebral ligament bounded by nasal bridge in front, eyebrows above and eyelid behind 0.5 ml of the above prepared mixture is injected in the anterosuperior corner (Fig A-1). This raises a wheel extending below upto the medial palpebral ligament (Fig B-1). The second injection of 0.5 ml of the above mixture is given in the depression below the medial palpebral ligament vertically 5 mm below the medial end of the medial palpebral ligament avoiding the facial vein (Fig A-2). This injection is again bone deep under the orbicularis muscle. The wheel rises to meet the medial palpebral ligament from below (Fig B-2) A third injection of 0.5 ml mixture is given below the medial palpebral ligament 1 cm deep to the skin (Fig A-3). This injection anesthetizes the anterior ethmoidal nerve and the sac area. The nasal packing is done on the usual way to anesthetize nasal mucoperiostium. No rubbing is done after injections, only a gentle pressure is applied. After the injections, a gap period of 8-10 minutes is given before the start of operation. This helps to achieve proper anesthesia as well as decongestion. The operation is carried out in the usual manner.

Postoperatively patients are encouraged to walk to their beds and have something to eat. The nasal packing is taken out after 24 hours. The stitches are taken out after 5 days and the patients are seen at weekly intervals for 3 weeks.

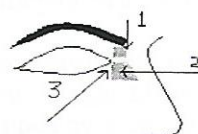


Figure A

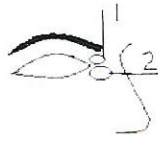


Figure B

Results

Out of 265 patients, only six needed a reinjection after complaining of pain during surgery. Two young patients had to be converted to GA because of apprehensions during the operation. The rest had a very quiet uneventful operation. Sixteen patients had persistent ooze that was dealt with by cotton swabs. Of these patients, two needed the use of mechanical suction during surgery. None of the patients had adrenaline related problems like tachycardia, arrhythmias etc. Postoperatively all patients were able to immediately sit up and walk to their ward beds. They were encouraged to have tea and biscuits.

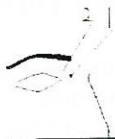


Figure C



Figure D

Discussion

DCR under a proper local anesthesia is a highly tolerated procedure³. DCR is one operation where a proper anesthesia and an avascular field⁴ determines the success of the operation. Because of a very small field, a few drops of blood prevent the visibility and hence hamper the surgeon's view. Large bleeding vessels can be clamped but there is no way to stop the ooze. Injection of lignocaine with adrenaline prevents the ooze while at the same time

provides anesthesia. Large amounts of lignocaine with adrenaline injections (7-10 ml) in old method have resulted in severe lignocaine reactions, even cardiac arrests due to adrenaline related problems. The local anatomy is also disturbed because of extensive swelling. The anesthetic agent is injected subcutaneously and is supposed to diffuse to underlying muscles and nerves thereby indirectly inducing anesthesia. (Fig C& D).

The new technique has been developed to a) Minimize use of anesthetic agent b) To directly infiltrate the tissue to be operated so as to achieve local anesthesia and decongestion at the same time.

Also in the old method, the anterior ethmoidal nerve was anesthetized by the prick above the medial palpebral ligament. (Fig C 2) This could cause damage to the trochlea of the superior oblique muscle. Even ocular perforations have been reported⁵. In the new technique, this injection is given below the medial palpebral ligament (Fig A 3) thereby directly anesthetizing the sac area as well as avoiding the above complication.

Other anesthetics like cocaine⁶ have been used in place of lignocaine but with lot of side effects. Lacrimal fossa blocks for endoscopic DCR is being regularly applied but with limited applications^{7,8}.

Conclusion

New method of local anesthesia has been proved to be very effective way of achieving anesthesia for DCR operation. The side effects have been very minimal and the patients satisfaction is very high. We recommend it for regular use in operations where the patient is willing for a local anesthesia.

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