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ORIGINAL ARTICLE

USE OF MITOMYCIN IN ENDONASAL DCR

Anagha Yogesh Rajguru[1], Yogesh Ravindra Rajguru[2]

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ABSTRACT: Endonasal dacrocystohinostomy (DCR) is the surgery used for chronic dacrocystitis, where the patient has epiphora caused by blocking of nasolacrimal duct, leading to collection of lacrimal fluid in the sac which ends in inflammation of the lacrimal sac. As the success rate of endonasal DCR varies from 50---97%, various different methods are used to have high success rate. It is very important to make the ostium at the level of the common canaliculus. If the exposure of lacrimal sac is not sufficient then even though Mitomycin is applied the rate of failure remains high.

INTRODUCTION: Epiphora is the most bothersome complication of lacrimal system obstruction. Other than it relapsing dacrocystitis, dacryocele and dacryolithiasis, latter being quite rare, are the other indications of dacrocystorhinostomy. DCR is a surgical procedure in management of obstructive epiphora. Obstructive epiphora finds today his best solution with a surgical procedure Dacrocystorhinostomy by nasal endoscope. The lacrimal flow is diverted into nasal cavity through an artificial opening made at the level of lacrimal sac.

DCR can also be performed by an external approach. It is called external DCR. In comparison of both, endonasal DCR has certainly many advantages; minimally invasive procedure, better aesthetic results with no cutaneous scar, preserves lacrimal pump system, faster resumption to daily activities, any intranasal pathology that might have caused obstruction can be addressed at the same time, active infection of the lacrimal system is not a contraindication to the surgery, it is much less bloody than the external approach, the per-operative time is shorter.

If the obstruction is in puncta or canaliculus, endonasal; DCR will not help.

Mitomycin—C is an alkaline agent used as anticancer, isolated from streptomyces Caespitosus. It inhibits the synthesis of DNA, cellular RNA and proteins in the rapidly growing cells. It has the ability to suppress fibrosis and vascular growth hence can reduce possibility of stenosis of the newly created ostium. We used Mitomycin –C (0.5 mg/ml) for 5 minutes over osteotomy site.

MATERIAL AND METHODS: Three hundred patients (300), who presented with epiphora, were selected and operated for Endonasal DCR. The patients ranged from 5 years to 85 years of age. One hundred and thirty nine (139) were males and one hundred and sixty one (161) were females. All of them had epiphora which was not responding to medical line of treatment. Some of them had relapsing dacrocystitis, some had persistent purulent, sticky discharge from eye, and some had lacrimal abscess or fistula. All the patients were examined by ophthalmologist prior to surgery. The clinical evaluation included probing of nasolacrimal system and lacrimal irrigation.

The nasal cavity had an adequate examination using 0 degree Endoscope and intranasal pathology that might have caused the obstruction was determined preoperatively. The indication for endonasal approach included distal nasolacrimal duct obstruction. All the patients were examined by an ophthalmologist prior to the surgery.

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PROCEDURE: Almost all, except pediatric, Endonasal DCR were carried out under local anesthesia with intravenous sedation. Preoperative preparation included topical anesthesia with surgical cottonoids soaked in topical anesthetic and adrenaline (1:100, 000), applied 10—15 min prior to the surgery in order to achieve good vasoconstriction. Local infiltration included, infiltration of nasal mucosa, supratrochlear & infraorbital nerves. Surgery is performed with 0 degree endoscope. On the Alae nasi, two vertical incisions are made though the mucosa down to the bone.

The anterior incision is performed slightly anteriorly and superiorly to the middle turbinate, with a width of little more than 1 cm from maxillary line.[1, 2] The posterior incision is placed vertically on the post edge of maxillary line. Thus an inferiorly based, mucoperiosteal flap is created on the Agar nasi and push towards the inferior turbinate. The bone is resected from the maxillary line anteriorly and extended posteriorly upto the lacrimal bone. Lacrimal sac is thus exposed. Dissection of lacrimal sac is achieved with the help of sickle knife. At this point pus or mucus usually flows from the sac.[3 , 4]

The entire medial wall is removed using straight Blakesley forceps. The patency of DCR is checked by passing lacrimal probe into nose via the inferior canaliculus, which is seen in the nasal fossa. The mucosal flap is then repositioned with the intent to cover as much denuded bone as possible. Intranasal packing is done with gelfoam or merocel, which is removed between 5—7 days after surgery.[5, 6]

The prospective series of 300 endonasal DCR were performed using the same technic mentioned above. In 150 patients a cotton ball soaked in Mitomycin—C diluted in distilled water is applied to the sac, after cutting it and in rest of 150 patients it was not applied.

DISCUSSION: In our experience, closure of the newly created ostium may take place when bone has been left near the common canaliculus, serving as a scaffold for obliteration of new osteum. Intraoperative removal of the bone surrounding the common canaliculus at the superior third of the lacrimal sac, prevents the bone to act as a scaffold for fibroblast growth, ultimately leading to obliteration of the scar.[7, 8 ,9]

CONCLUSION: The success rate remains same in both the cases, those with application of Mitomycin—C and without it .The Success rate is around 95% in both the cases. Per –operative us of Mitomycin—C does not show any increase in success rate of Endonasal DCR.

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AUTHORS:

1. Anagha Yogesh Rajguru
2. Yogesh Ravindra Rajguru

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of E.N.T, Krishna Institute of Medical sciences and Research (KIMS), KIMS, Karad.
2. Assistant Professor, Department of Ophthalmology, Institute of Medical Sciences and Research , Mayani

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Anagha Yogesh Rajguru,
Rajyog Hospital, Morya Arcade,
Shaniwar Peth, Karad- 415110,
District, Satara, Maharashtra, India.
E-mail: anagha.ent134@gmail.com

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