



A STUDY TO DETERMINE SURGICAL RESULTS AND OUTCOME IN TERMS OF PATENCY OF ENDOSCOPIC DACRYOCYSTORHINOSTOMY WITHOUT STENT.

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ABSTRACT Endoscopic Dacryocystorhinostomy (DCR) is a surgical procedure by which the lacrimal flow is diverted into the nasal cavity proximal to the ductal block, by making an opening in the lacrimal sac if and when the Nasolacrimal Duct is blocked. We did a Cross Sectional study to evaluate the surgical results & outcome interms of patency of Endoscopic Dacryocystorhinostomy without stent in the department of ENT, Tripura Medical College and Dr. BRAM teaching Hospital. In this study 20 patients underwent Endoscopic Dacryocystorhinostomy. Post operative evaluation was also done. Our study concludes that Endoscopic Dacryocystorhinostomy is a safe, simple procedure with better success rates and less recurrence with fewer complications along with review of literature.

KEYWORDS :

INTRODUCTION:

The Lacrimal system is essentially a system of fluid pools and channels connecting them. The eye is one pool, lacrimal sac is another pool, and nose is the final pool. The lacrimal secretion first flows into the eye pool, from there a channel system called the canalicular system carries the tears to the lacrimal sac pool. A second channel called the nasolacrimal duct (NLD) carries the tear from the lacrimal sac to the nose, where they are swallowed.

Chronic Dacryocystitis is the commonest cause of Epiphora. It is a chronic low grade infection of the lacrimal sac, which ultimately leads to nasolacrimal duct obstruction (NLDO). The disease presents as watering of eyes or purulent discharge from eyes with disturbance in vision due to presence of a continuous tear film. It is 4-5 times more common in females¹. The commonest cause of the disease is Chronic inflammation². Other causes can be local trauma & iatrogenic injury².

Dacryocystorhinostomy (DCR) is a surgical procedure by which the lacrimal flow is diverted into the nasal cavity proximal to the ductal block, by making an opening in the lacrimal sac if and when the Nasolacrimal Duct is blocked. The operation can be carried out by either an external or an endonasal surgical approach. An external approach was used, in which an incision is made on the skin.

The Intranasal Approach was largely abandoned owing to problems with proper visualisation. But with the modern endoscopes and rhinology instruments the operation has regained huge interest over past 10 years. Mc Donough and Meiring³ described the first modern endonasal Dacryocystorhinostomy procedure in 1989 with Massaro et al⁴ in 1990. Endoscopic Dacryocystorhinostomy was first performed by RICE in 1998^{5,6}. The endoscopy-assisted endonasal approach follows the inverse pathway. Success rate of Endoscopic Dacryocystorhinostomy varies from 82 to 95%⁷. The advantages of the endoscopic approach are minor traumatization, preservation of lacrimal pump function, and reduction of surgical time.

MATERIALS AND METHODS:

The present study (Cross Sectional Study) was undertaken to the surgical results and outcome e.g. cures, partial improvement and failure. Total 20 patients with epiphora who underwent endoscopic DCR in the Dept of ENT at Tripura Medical College between 1st June 2018 to 30th November 2018 were included in the study.

Criteria of inclusion-

- ASA grade I and II patients.
- Both males and females.
- Adult patients aged 20 to 60 years of age.
- Patients with chronic dacryocystitis with unilateral nasolacrimal duct obstruction.

Criteria of exclusion-

- Patients with bleeding and clotting disorder.

- Any pathology inside nasal cavity other than deviated nasal septum.
- Chronic dacryocystitis with obstruction proximal to the lachrymal sac.
- Bilateral chronic dacryocystitis.
- Uncontrolled medical disease.

All patients underwent standard procedure of endoscopic DCR. The selected patients were evaluated by syringing and patients fulfilling the inclusion criteria are operated by standard Endo-DCR procedure without placement of stent. Patient were discharged on 2nd post operative day and syringing started on the same day. Thereafter follow-up was done every 3 day for 15 days and then after 1 month & 2 months.

Operative Procedure:

The surgical procedure was similar in all patients. All procedures were performed by the same surgeon under general anaesthesia. Topical vasoconstriction of the nasal cavity was done with a solution of 2% lidocaine with epinephrine 1:2000. A 4mm, 0 degree endoscope (Hopkins-Karl Storz) was used in the procedure.

A mucosal flap was created endoscopically, with its posterior base adjacent to the middle nasal concha using a sickle knife, an electrocautery, and an aspirator-detacher. The flap was positioned posteriorly during the procedure, protected. After exposing the lacrimal bone and the frontal process of the maxilla, we created an anterior window to expose the width of the lacrimal sac. The osteotomy was made with a diamond bur.

The lacrimal sac was identified and the entire medial wall of the lacrimal sac was removed. Finally, we repositioned the previously-made mucosal flap, covering the posterior region of lacrimal sac's opening.

RESULTS: All the 20 patients (100%) had epiphora as the main complaint, lacrimal abscess was present in 5 patients (25%), no patient had lacrimal fistula (Table 1).

The study group had 8 male patients (40%) and 12 female patients (60%). Mean age of the group was 37.5 with the age range between 25 years to 50 years. Duct block was seen right sided in 8 patients (40%) and left sided in 12 patients (60%).

Table 1: various symptoms in patients

Symptoms	Cases	Percentage(%)
Epiphora	20	100
Lacrimal Abscess	05	25
Lacrimal Fistula	00	00

Table 2: Complications

Complications	Cases	Percentage(%)
Haemorrhage(primary)	02	10
Echymosis/cellulitis	00	00
Granulations	01	05
Synechia	02	10

Table 3: Results

Results	Cases	Percentage(%)
Cure	17	85
Partial Improvement	02	10
Failure	01	5

Endoscopic DCR was done in 20 patients (100%). As shown in Table 2, 2 patients (10%) had excessive intraoperative haemorrhage but proper haemostasis was achieved at the end of the surgery. No patient suffered from ecchymosis or cellulitis of eyelid post operatively. One patient had granulations (05%), and 2 patients (12%) developed synechia between middle turbinate and lateral wall, which were removed in endoscopic follow up. 17 patient (85%) showed complete cure by demonstrating clear flow of saline into nasal cavity on sac syringing, 2 patient (10%) had partial regurgitation indicating partial improvement and only 1 patient (5%) had complete regurgitation and no flow of saline into nasal cavity resulting in failure of the surgery as shown in Table.3.

DISCUSSION:

Among the pts attending eye clinic, 3 to 4% complaint of excessive tearing⁸ Chronic dacryocystitis is the commonest cause of chronic excessive tearing. External DCR has failure rate ranging from 3 to 15%⁹ after advances in endoscopic surgeries, endonasal endoscopic DCR gained popularity.

Endoscopic Dacryocystorhinostomy is the most favourable and preferred over conventional method because of the following reasons :

- It is less Traumatic
- No external incision so no external facial scar
- No angular facial vessel Trauma
- Does not involve disruption of medial palpebral ligament
- It preserves the lacrimal pump.

Current endonasal approaches can be divided into this categories-

- Endonasal laser assisted DCR [ENLDCR]^{10,11}
- Endocanalicular laser assisted DCR [ECLDCR]^{12,13,14}
- Powered mechanical endonasal DCR [MENDCR] on "cold steel" DCR with¹⁵ or without drills^{16,17}

Our study showed the condition is more common among females (60%), which is similar to other studies¹.

Umer et al.¹⁸ performed 256 endonasal non-laser endoscopic DCR between 1994 & 2002, out of which 21.5% (55cases) required additional endonasal procedures. Where in our study, no case required any additional procedure.

Smirnov et al¹⁹ stated that the overall success rate at primary endoscopic DCR with 42 patients was 89%; with silicon tube 78%, without silicon tube 100%. Our study has comparable success rate of 85% without stent.

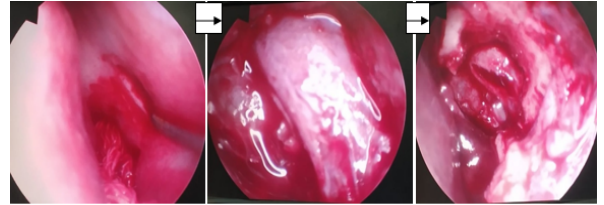
Maini et al²⁰ demonstrated success rate of 82% at 3months & 68% at 12months in laser assisted endoscopic DCR, where 76% at 3months & 74% at 12months in conventional non-laser endoscopic DCR, concluding that conventional non-laser endoscopic DCR has better long term results. This is also in accordance with the result of our study.

The success rate of endoscopic DCR has been reported very high and as good as or better than external DCR method.

The complications like haemorrhage, adhesions, stomal stenosis and ecchymosis were minimal in our study which is comparable with previous endonasal studies²¹ & external DCR studies²²

CONCLUSION: For the past decade many types of endonasal techniques have been tried. In the present study Endoscopic dacryocystorhinostomy (without stenting) is a safe and successful procedure for the treatment of nasolacrimal duct obstruction with a success rate of 85%. The associated complications are very minimal.

Regular follow up is necessary in post operative period. Good anatomical knowledge of intranasal structures allows accurate mucosa preserving surgery. Endoscopic skills are necessary to ensure accurate and reproducible surgery. In this procedure coexisting sinonasal diseases also can be managed simultaneously. Hence we recommend Endoscopic DCR without stent as one of the safest & economically



4Fig-1-Incision over the maxillary line ->After elevation of posterior base flap ->incision over the lacrimal sac after removal of overlying bone.

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