

## A Study of Outcome And Follow Up of Endonasal Dacryocystorhinostomy for Cases of Acquired Nasolacrimal Duct Obstruction



### Medical Science

**KEYWORDS :** Acquired, Dacryocystorhinostomy, Nasolacrimal duct, Silastic stent.

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### ABSTRACT

**BACKGROUND/ INTRODUCTION:** Endoscopic Dacryocystorhinostomy (DCR) is a procedure to create an artificial lacrimal drainage into the nasal cavity proximal to the ductal block. Endoscopic DCR has many advantages as compared to external DCR.

**OBJECTIVES:** To evaluate the safety and efficacy of endoscopic dacryocystorhinostomy (DCR) for acquired nasolacrimal duct obstruction cases and to evaluate the outcome.

**MATERIALS AND METHODS:** A Retrospective study of 50 cases that have undergone endoscopic DCR from January 2011 to December 2015 were considered for the study. Cases were operated under GA/LA depending on the age and indication for surgery. Patient was followed up at 1 week, 2weeks, 4 weeks and at six months postoperatively. The follow up data was collected from the medical records of the patients. Results were analyzed by lacrimal sac syringing and tabulated. The results of lacrimal sac syringing were collected from the data present in the records.

**RESULTS:** Out of 50 cases operated free flow of saline on lacrimal sac syringing was noticed in 44 cases and in 6 cases there was obstruction for free flow of saline. The causes of failure of Endo DCR in our cases was high deviated nasal septum, oedema, synchia and allergic rhinitis

**CONCLUSION:** Endoscopic DCR is effective surgery for acquired nasolacrimal duct obstruction without any complications. Regular lacrimal sac syringing till the stoma forms is necessary to get good outcome. In our series success rate was found to be 88% on par with other studies

### INTRODUCTION

Dacryocystorhinostomy (DCR) is an oculoplastic surgery commonly performed for chronic dacryocystitis, wherein an anastomosis is created between the nasal mucosa and the lacrimal sac. It can be performed endonasally as well externally<sup>1</sup>. The advent of high resolution endoscopes has increased the otorhinolaryngologist's knowledge about nasal anatomy & hence endoscopic DCR has emerged as a commonly performed surgery .Endoscopic DCR has many advantages as compared to external DCR. The most important of which is there is no skin scar.

Causes for nasolacrimal duct (NLD) obstruction include 1) Idiopathic obstruction ( more common with increasing age and shows a female preponderance) 2)congenital lacrimal duct obstruction 3) surgical trauma 4)Midface fractures 5) malignancy and 6)granulomatous conditions such as Wegener's granulomatosis and sarcoidosis<sup>2</sup> . In most of the cases, no cause is detected for nasolacrimal duct obstruction. Since females have higher incidence of dacryocystitis, nasolacrimal duct obstruction is more commonly seen with them.

### AIM OF STUDY

To evaluate the safety and efficacy of endoscopic Dacryocystorhinostomy (DCR) for acquired nasolacrimal duct ob-

struction cases and to evaluate the outcome.

### MATERIALS & METHODS

A Retrospective study of 50 cases that have undergone endoscopic DCR from January 2011 to December 2015 were considered for the study. The following cases were included in the study : chronic epiphora , lacrimal abscess ,lacrimal fistula, trauma to face leading to NLD obstruction in the age group of 10 to 60 yrs .Those cases having sinonasal polyps, malignancy, age of less than 10yrs or more than 60 yrs were excluded from the study. All patients underwent diagnostic nasal endoscopy (DNE), lacrimal syringing and probing .Those cases who had hard stop on probing and regurgitation of fluid after syringing were selected for Dacryocystorhinostomy.

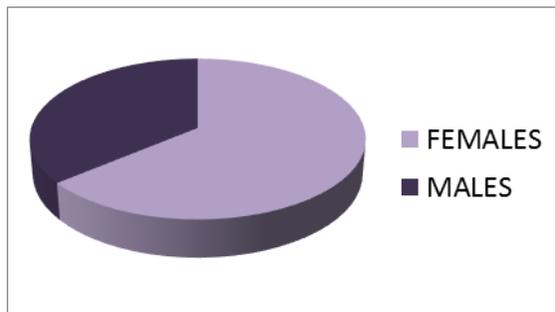
### SURGICAL PROCEDURE

Under GA/LA .Most of the cases were operated under local anaesthesia. After local infiltration, using 0 degree endoscope mucosal flap based posteriorly was created. Flap was raised anterior to the middle meatus on the lateral wall of nasal cavity. This exposed the maxillary line formed by frontal process of maxilla. Frontal process of maxilla & lacrimal bone were punched out & medial wall of lacrimal sac excised. Superior & inferior flaps of mucosa covered the raw bone which was exposed.Patency was achieved & confirmed by lacrimal sac syringing on table.

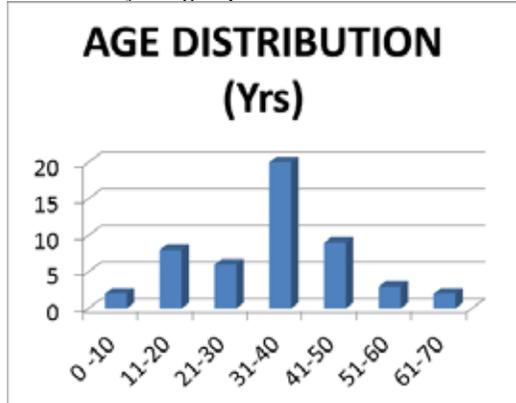
Postoperatively patients were put on systemic and local antibiotics for one week .all patients were regularly followed up at 1 week,2 weeks,4 weeks,6 months interval .During each visit endoscopically the patency of new stoma was checked by syringing and crusts removed.

**OBSERVATIONS**

1) Sex distribution: 32 were females & 18 males



2) Age distribution (Yrs): Most of the patients were in the 20 to 40 years group.



3) Indications for Endo DCR in our study: The most common indication was chronic Dacryocystitis .In 14 cases there were various indications.

Indications	No. of cases	Silastic stent utilized
1.Chronic Dacryocystitis	36	02
2. Lacrimal abscess	07	01
3. Lacrimal fistula	04	01
4. Traumatic	01	00
5. Atrophic rhinitis	02	01

**4) OUTCOME OF SURGERY**

Main outcome measures analyzed were :  
Anatomical success - patent lacrimal passage on irrigation  
Functional success- resolution of epiphora

**Ostium morphology- examined for cicatricial closure, gross narrowing, and mucosal health**

PARAMETER ANALYSED	No. of CASES	PERCENTAGE
ANATOMICAL & FUNCTIONAL SUCCESS	44	88%
FAILURE	06	12%

**5) Probable causes for failure**

In our study the commonest cause for failure was high deviated nasal septum followed by Synichae ,fibrosis ,Allergic rhinitis.

**DISCUSSION**

Nowadays Endo DCR is the commonest surgery being performed for chronic Dacryocystitis. In our study the incidence of NLD obstruction was more with females as in other studies. In females the NLD is said to be narrower and longer making them more vulnerable to obstruction<sup>3</sup> .NLD obstruction was seen more frequently in the 4th decade of life .in 36 of our cases the indication for Endo DCR was idiopathic chronic dacryocystitis. In 14 cases the indications varied. In patients with lacrimal abscess Endo DCR had immediate curative effect<sup>4</sup>.in our study 2 cases of atrophic rhinitis with epiphora underwent Endo DCR. Atrophic rhinitis is no more considered as contraindication for Endo DCR<sup>5</sup>. In fact it is effective in decreasing the crust formation on the operated site. Thus speculating its role in management of atrophic rhinitis patients. Hence the indications for Endoscopic DCR can be extended to include atrophic rhinitis, lacrimal abscess & lacrimal fistula <sup>4</sup> . Silastic stents were used in 5 patients were in the lacrimal sac itself was cicatrized , in these patients new tract was created and stented for 6 to 8 weeks . Its patency was established by repeated syringing. Role of silicone stents in Endo DCR is limited to cases in which the site of obstruction is proximal to NLD<sup>6</sup> . Stenting is not advisable in all cases of DCR since it can cause granulations and lead to failure of DCR. According to certain studies stenting does not alter the result of ENDO DCR<sup>7, 8</sup> .Following DCR there is chance of recurrence of symptoms due to closure of the fistula .To decrease the chance of closure of fistula, Mitomycin-C is being used at the fistula site<sup>9</sup>. In patients who are on anticoagulant therapy, laser assisted ENDO DCR is a safe option<sup>10</sup>. During our study we did not encounter any complication. Although Endo DCR can cause complications like restenosis of the opening, bleeding from the nasal cavity, orbital injury, CSF rhinorhea and injury to cornea or canaliculi due to tight silicone tube placement<sup>11</sup>. Thus Endo DCR is said to be very safe and satisfying surgery for the surgeon as patient is relieved of his/her symptoms (high functional success) during surgery intra-operatively. In our series success rate was found to be 89.48% on par with other studies<sup>8</sup>.

**CONCLUSION**

Endoscopic DCR is effective surgery for acquired nasolacrimal duct obstruction without any complications. The indications for Endo DCR is should include atrophic rhinitis, lacrimal abscess and lacrimal fistula. Regular lacrimal sac syringing till the stoma forms is necessary to get good outcome.

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