

Endoscopic Dacryocystorhinostomy: Our Experience

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ABSTRACT

Introduction: Dacryocystorhinostomy is a surgical procedure for epiphora caused by obstruction of the nasolacrimal duct. Either an external or endonasal surgical approach can be used for dacryocystorhinostomy. Study Objective were to study the result of endoscopic dacryocystorhinostomy in our RIMS general hospital srikakulam.

Material and Methods: This was a Prospective Study, 32 patients with chronic dacryocystitis with nasolacrimal duct obstruction, over a period of 2 years from January, 2015 to December, 2017 who attended in ENT outpatient department and referred from ophthalmology outpatient of RIMS medical college and Hospital were included in this study.

Results: Most of the patients are in the age group of 30 to 50 years, Females are more affected than male. After 6 months follow up, in 27 patients lacrimal sac stoma was completely patent. 3 patients presented with partial stenosis of lacrimal sac stoma, 2 patients presented with complete stenosis of lacrimal sac opening, and the Complications include synechiae inside nasal cavity and stenosis of the sac stoma, postoperative peri orbital edema, intra operative bleeding, granulation tissue around the stoma.

Conclusion: Endoscopic dacryocystorhinostomy gives good results without any external scar so it is preferred method in treatment of chronic dacryocystitis due to nasolacrimal duct block.

Keywords: Dacryocystorhinostomy, Nasolacrimal Duct, Epiphora, Lacrimal Sac.

INTRODUCTION

Dacryocystorhinostomy is a surgical procedure for epiphora caused by obstruction of the nasolacrimal duct. Either an external or endonasal surgical approach can be used for dacryocystorhinostomy.

Dacryocystorhinostomy is a gold standard procedure for primary acquired nasolacrimal duct obstruction. Most of the ophthalmology surgeons will do external DCR, which is a safe and standardized procedure. Endoscopic endonasal DCR is presently gaining grounds because of comparable success rate, no skin scar, minimal tissue dissection, minimal intraoperative hemorrhage, and decreased postoperative morbidity.¹⁻⁴

In 1904 Adeo Toti described the traditional external approach for Dacryocystorhinostomy.⁵ In 1883 Caldwell described the original intranasal approach.⁶ In 1989 McDonogh and Meiring⁷ described the initial modern endonasal dacryocystorhinostomy procedure. Endoscopic dacryocystorhinostomy has been gaining recognition, largely due to technological advances in endoscopes and other modern instruments of rhinologic surgery.

MATERIAL AND METHODS

This was a Prospective Study, where 32 patients with chronic dacryocystitis with nasolacrimal duct obstruction over a period of 3 years from January, 2015 to December, 2017 who attended in ENT outpatient department and referred from ophthalmology outpatient of RIMS medical college and Hospital were included in this study.

The patients with history of epiphora more than three months were subjected for lacrimal syringing. Lacrimal syringing done in all patients to identify the level of obstruction of lacrimal drainage pathway. Diagnostic nasal endoscopy was done in all cases preoperatively to exclude any nasal pathology and need for additional surgery like septoplasty etc.

Inclusion criteria

- Patients with chronic dacryocystitis with nasolacrimal duct obstruction
- Patients aged 20 to 60 years of age
- Both males and females

Exclusion criteria

- Chronic dacryocystitis with obstruction proximal to the lacrimal sac
- Any pathology inside nasal cavity other than deviated nasal septum
- Medical unfit patients
- Patients not followed up for 6 months

Surgical procedure

All the cases done were under local anesthesia with premedication (1CC Pentazocine + 1CC Promethazine intra muscular injection 30 minutes before surgery). Nasal cavity was packed with cotton pledges soaked in 4% lignocaine with 1:10,000 adrenaline 10 minutes before the starting the procedure. Patients kept in supine position with head elevated 15° up. 4 mm diameter 18 cm long 0° Hopkins rod endoscope with camera and monitor was used in all cases. The mucosa of the lateral nasal wall in the region in front of the anterior end of middle turbinate, over the axilla and the anterior face of middle turbinate were infiltrated with 1% lignocaine with adrenaline (1:1,00,000). 1x1 cm sized posteriorly base

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mucoperiostial flap elevated over frontal process of maxilla and lacrimal bone in front of anterior end of middle turbinate. Lacrimal bone and frontal process of maxilla overlying the lacrimal sac was removed using a 2 mm Kerrison's punch. Entire medial surface of lacrimal sac was properly exposed. Then the periosteum over the sac was removed carefully. The medial wall of the lacrimal sac was tented with the Bowman's lacrimal probe and vertical incision was given in the sac wall from superior to inferior, superiorly until the common canalicular opening easily seen. Lacrimal syringing done to confirm the lacrimal patency, the lacrimal sac opened like a book by creating anterior and posterior flaps of the medial wall of the lacrimal sac with the help of a right angle pick. Where anterior and posterior flaps repositioned with nasal mucosa for good healing. Mucoperiostial flap was cut in the center where the upper and lower flaps cover the exposed bone. Anterior nasal pack was done carefully to keep the mucosal flap in position and to achieve good haemostasis. Nasal pack was removed after 1 day.

Systemic antibiotics were given for one week. Xylometazoline nasal drops given for five days, saline nasal drops given for 2 weeks, moxifloxacin eye drops given for two weeks.

All the patients were followed on 1st week 2nd week 4th week 3rd month and 6th month. Lacrimal sac syringing was done in every visit to see the lacrimal patency for each follow-up nasal endoscopic examinations was performed to assess the wound healing and to remove crusts and granulations if present.

RESULTS

32 patients were taken up for endoscopic dacryocystorhinostomy during the period of January, 2015 to December, 2017 in the dept. of ENT, RIMS Medical College and Hospital, Srikakulam. Our observations and results were as follows.

Age: All patients were adult with age range between 20 to 60

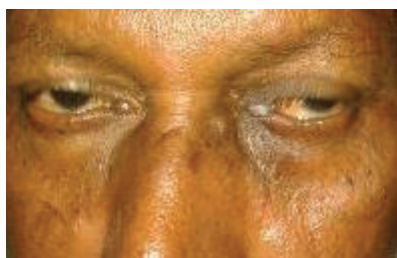


Figure-1: Mucopurulent discharge in medial canthas

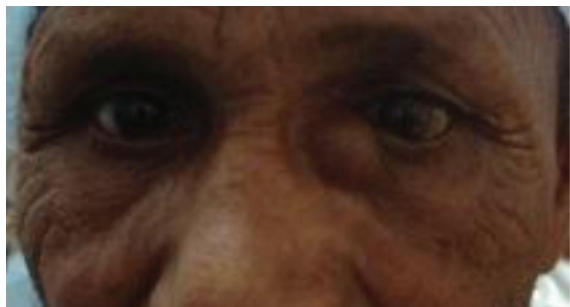


Figure-2: Mucocoele

years, most of the patients were in age group between 31 to 50 years (table-1).

Sex: Out of these patients, 12 patients were male and 20 patients were female (table-2).

Side: In our study most of cases effected on left side [18 cases], 9 cases on right side, 5 cases on both sides (table-3).

Presenting clinical features: Epiphora was presenting symptom in all 32 cases, 8 patients presented with mucocoele

Age distribution[in years]	No.of cases
21-30	5
31-40	11
41-50	12
51-60	4
Table-1:	

Sex	Number of Cases
Male	12
Female	20
Total	32
Table-2:	

Side	Number of Cases
Right	9
Left	18
Bothsides	5
Table-3:	

Clinicalfeature	Number of Cases
Epiphora	32
Mucocoele	8
Sac fistula	2
Table-4:	

Duration of symptoms	Number of Cases
3 To 6 months	23
Months to 1 year	6
1 Year	3
Table-5: Symptoms duration	

Result after 6 months	Number of Cases	Percentage
Lacrimal sac stoma was completely patent	27	85
Partial stenosis of lacrimal sac stoma	3	9
Complete stenosis of lacrimal sac opening	2	6
Table-6: Result after 6 months		

Complication in endoscopic DCR	Number of cases
Syniche formation	4
Granulations around the SAC	3
Intra operative heamarrage	3
Peri orbital edema	1
Table-7: Complication	

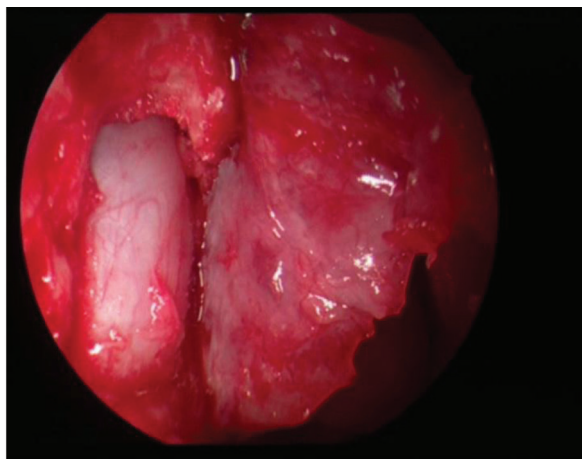


Figure-3: Medial wall of lacrimal sac exposed with posteriorly based mucoperiosteal flap

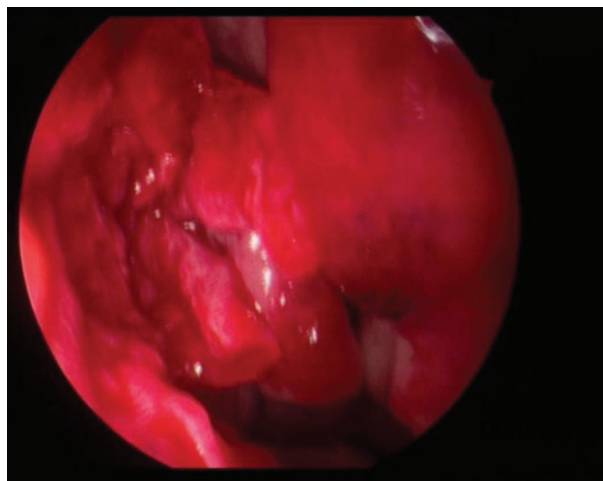


Figure-6: Mucoperiosteal flap divided into upper and lower flaps

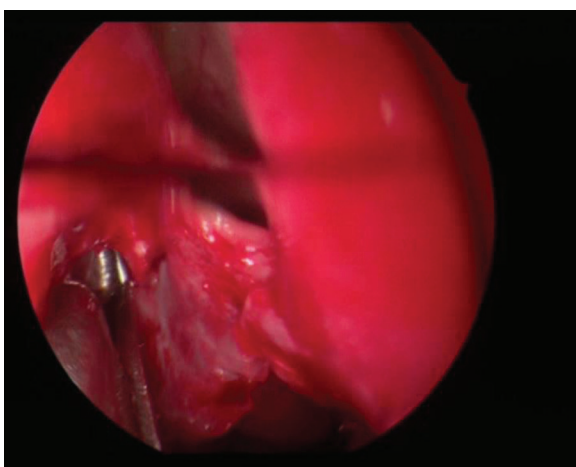


Figure-4: Frontal process of maxillary bone removed with Kerrison's punch

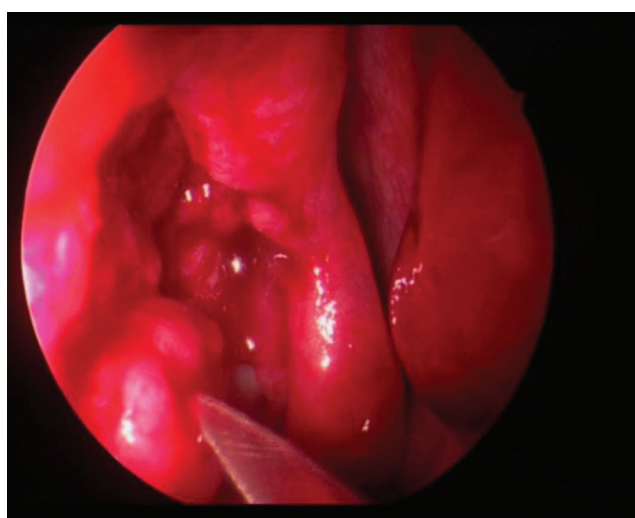


Figure-7: Upper and lower mucoperiosteal flaps covering the bare bone

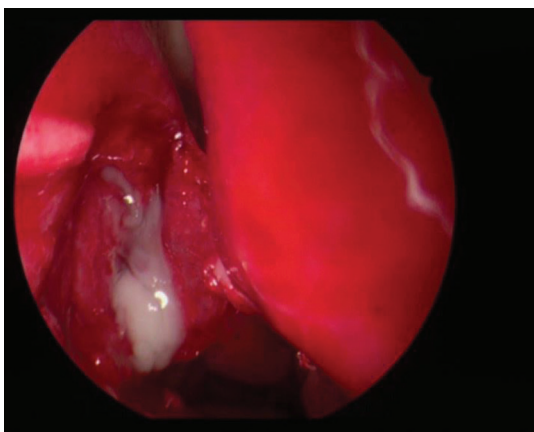


Figure-5: Mucopurulent pus seen after giving incision over medial wall of lacrimal sac

also, 2 patients had lacrimal sac fistula (table-4). Symptoms duration are shown in table 5.

In our study, 27 patients (85%) sac stoma was completely patent, in 3 patients (9%) presented with partial stenosis and in 2 patients (6%) presented with complete stenosis (table-6).

Complications: 4 patients (12.5%) presented with synechia inside nasal cavity which was resected during followup, 3

patients (9%) had intraoperative bleeding, 3 patients (9%) developed granulation tissue around the stoma which was removed during the follow-up endoscopic cleaning, 1 patient (3%) presented with postoperative periorbital edema of the lower eye lid which was also responded with oral antibiotics and anti-inflammatory agents.

DISCUSSION

Chronic dacryocystitis is one of the commonest cause to attending the ophthalmology OP, complaint of epiphora.⁸ In most of times Chronic infection of lachrymal sac was due to obstruction of nasolacrimal duct. External dacryocystorhinostomy was the goldstandard surgical procedure which gives good results but with external skin scar and loss of lacrimal pumping action. Since the start of endoscopic dacryocystorhinostomy, the popularity of external dacryocystorhinostomy is dramatically reduced as there are certain definite advantage are there in endoscopic dacryocystorhinostomy. Endoscopic dacryocystorhinostomy gives similar results of external dacryocystorhinostomy. But the advantage of endoscopic dacryocystorhinostomy are as it straightly access to the sac through the lacrimal

bone, avoiding double-side dissection of the sac and is less traumatic, thus, it shortens the hospital stay. The facial skin scar is avoided and it preserves the lacrimal pumping function. Even in case of acute dacryocystitis, we can go for endoscopic dacryocystorhinostomy where external dacryocystorhinostomy is contraindicated.

In our study, we have found a females majority with a male female ratio 1: 1.66 which is almost comparable with Kamal S, et al.^{9,10} Our success rate in this study was 85% which can be matched with other studies. Most of the studies shows that the success rate of endoscopic dacryocystorhinostomy varies between 82 to 95%.^{11,12}

Success in endoscopic dacryocystorhinostomy mostly depend on adequate bone work and wide removal of frontal process of maxilla (figure 1-7). Stoma should be wide enough, and common canalicular opening should be visible. Wormald PJ et al investigated the precise location of the sac with computer tomographic dacryocystograms to study the relationship of the lacrimal sac and the axilla of the middle turbinate.¹³ He advocates that mucosal incisions 8 to 10 mm above and anterior to the axilla be made in order that the fundus of the lacrimal sac is exposed for marsupialization and reported 90% successful outcome.¹² Adequate post operative follow-up is also necessary to have good results.

Endoscopic septoplasty is done in 7 patients prior to sac surgery to gain access to the lacrimal sac area.

Complications of endoscopic dacryocystorhinostomy include syniche formation, stenosis of the stoma, intra operative bleeding, peri orbital injury, and There may be formation granulation tissue around the stoma. To prevent granulation tissue formation there should not any bare bone and two anterior and posterior flaps should approximated with nasal mucosa of lateral wall.

CONCLUSION

Endoscopic dacryocystorhinostomy is the preferred treatment in Chronic dacryosystitis with nasolacrimal duct obstruction. As no facial scar and less invasive technique and similar results compare to external dacryocystorhinostomy.

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