A STUDY OF 272 CASES OF ENDOSCOPIC DACRYOCYSTORHINOSTOMY

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ABSTRACT: 272 Patients with obstruction in nasolacrimal duct were treated by endoscopic Dacryocystorhinostomy (DCR). The results were compared with that of external DCR and Endoscopic DCR without stent. In our study Endoscopic DCR with stenting had better results. Endoscopic DCR with stenting has several advantages over the more conventional external approach and Endoscopic DCR without stenting. Results at 4 years of follow up have been good that is 98.6% patients were relieved of symptoms completely.

Keywords: Endoscopic Dacryocystorhinostomy, External DCR, Nasolacrimal Duct Obstruction.

INTRODUCTION
DCR is currently the mainstay of treatment of nasolacrimal duct obstruction. The advent of rigid endoscope has awakened interest in endonasal endoscopic DCR. Endoscopic DCR is a simple procedure well tolerated by patients with good success rate. The evolution of lacrimal surgery is a fascinating story. It began thousands of years ago. Around 2250 BC, the code of Hamurabi made first reference to surgical treatment of lacrimal fistula or abscess. Then came the Greeks of Alexandrian time, Celasus from Rome (25 BC-50AD), treated lacrimal fistula with excision, cautery and burning. During the Roman empire, lacrimal punctum of animals were probed by hair. With decline of the Roman empire, Arabs made little advances. In 18th century Platner in 1724, described the technique of treating chronic dacryocystitis. Toti made major contribution for external DCR in 1904. Caldwell described in 1893 the first intranasal DCR. Mc Donogh and Meiring described the endoscopic Transnasal DCR. Since then many modifications have been described as an useful tool for endoscopic DCR by lasers such as Holmium: YAG, Argon, CO₂. Many techniques advocate the use of silicone stent which is placed as a loop in the superior and inferior canaliculi, through the common canaliculus and lacrimal sac into the nose by an endoscope. Endoscopic DCR with stent has several advantages over the classical method. The aim of this study is to evaluate the role of wide marsupialisation of whole medial wall of the sac into the nose by Endonasal Endoscopic DCR alongwith insertion of stent in nose in patients with epiphora who have failed medical treatment and external DCR.

MATERIAL AND METHODS
A prospective study was conducted from Jan 1996 to Jan 2004 in 272 patients. All patients were assessed by complete ophthalmic and ENT examinations. In evaluating patients with dacryocystitis, it is important to take a good history and carefully observe the patient. A complete eye examination was carried out with emphasis on lacrimal sac and punctum, eyelid, conjunctiva and cornea status. Finger

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palpation of lacrimal fossa of enlarged lacrimal sac is essential. Mucoid or mucopurulent reflux on gentle pressure on lacrimal sac establishes the diagnosis of dacryocystitis. Patients with nasolacrimal duct obstruction were selected for this study. 34 patients, who didn't come for follow up were excluded from this study. The patients were subjected to nasal endoscopic examination for rhinitis, polyp, deviated nasal septum, tumor. It is necessary to screen sinuses with plain X-rays or CT (PNS) to rule out any eroding lesion or sinusitis. Endoscopic DCR was performed by the procedure described below and in 23.2% of patients, we performed PJ Wormald technique. Follow-up period ranged from 6 months to 4 years. Patency of stoma was checked by inspection of stoma endoscopically and sac syringing technique.

Any predisposing nasal conditions are treated either before hand or simultaneously at the time of surgery. All the cases were carried out in local anaesthesia. The nasal cavity were packed with gauze strips in 4% lignocaine with adrenaline (1:100,000) half an hour prior to the procedure. This helps in vasoconstriction, gives mucosal anaesthesia and bloodless field.

During surgery, patient was kept supine with head turned towards right. Infected eye of the patient was not draped. Anterior ethmoidal nerve block is given. The area of lateral wall of nose, anterior and above the anterior attachment of middle turbinate was infiltrated with 2% lignocaine with 1:100,000 adrenaline. 0°, 30° endoscopes were used for surgery. Vertical incision was made with the sickle knife in front of anterior attachment of middle turbinate. Mucosal flap was raised with Freer elevator and frontal process of maxilla, lacrimal crest, lacrimal bone exposed. The junction between lacrimal bone and crest is identified and disconnected. Lacrimal crest is punched or drilled to expose the medial wall of lacrimal sac. In 48.4% of cases defect was made by diamond burr by electric drilling as used in ear surgery or microdebrider with DCR blade.

The bony defect is widened circumferentially and lacrimal sac exposed adequately. The punctum are dilated using punctum dilator. Lacrimal probe is negotiated through the punctum and endoscopically sac is confirmed by pressure effect of probe on sac (TENTING effect on lacrimal sac). Then vertical incision is kept on sac, usually pus or mucus flows out. Perpendicular cuts are made over both ends of vertical incision and two flaps of medial wall of sac are made or medial wall is marsupialised completely. Then through the superior and inferior canaliculi, metal ends of lacrimal intubation set are passed and ends of silicon tube are tied in nose. Neomycin ointment is applied. A small neomycin wick is kept in nose for few hrs. It is important to remind the patient to stop Aspirin or NSAID, 2 weeks prior to surgery. In postoperative period, antibiotic eye drops are given. Follow up was done after 1 week of surgery and then 15 days for next 2 months, then monthly for 6 months and then yearly follow up.

RESULTS

In this study following observations are made. There were more female patients - 199 (73.2%) than male 73 (26.8%). Most of these cases were in the age group of 31-50 yrs. (68.7%) (Table-I). There were 71.6% of fresh cases as compared to 28.3% of revision cases. Revision cases included previous external DCR (16.2%), our own revision of endoscopic DCR without stenting (10.4%) and of Endoscopic DCR with stent (1.7%) (Table-II). Dacryocystitis was more common on left side than right and stenting with Lacrimal Intubation Set was done in 72.4% and in 27.5% of cases stenting was not done (Table-III). 11 of these patients had atrophic rhinitis, which was preoperatively controlled by appropriate medical treatment.

Table I: Age distribution of cases

<table>
<thead>
<tr>
<th>Age</th>
<th>10-20</th>
<th>20-30</th>
<th>30-40</th>
<th>40-50</th>
<th>50-60</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of cases</td>
<td>18</td>
<td>35</td>
<td>110</td>
<td>77</td>
<td>32</td>
</tr>
<tr>
<td>%</td>
<td>6.6%</td>
<td>12.8%</td>
<td>40.4%</td>
<td>28.3%</td>
<td>11.7%</td>
</tr>
</tbody>
</table>

23.2% of patients had deviated nasal septum in which 11.4% had undergone correction simultaneously. In our own revision cases of Endoscopic DCR with stent the common cause of revision was synechiae formations. Simultaneous septoplasty was performed in these cases. Regular follow-up was maintained for 4 years and complications like