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## **Study the quality of life post endoscopic dacryocystorhinostomy**

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**Abstract**---Background & Method: Aim of this study is to Study the quality of life post Endoscopic Dacryocystorhinostomy. The records of patients who underwent Endoscopic DCR in the last five years were retrieved from the archival records of Department of Otorhinolaryngology and Head-Neck Surgery, K.G.M.U and were reviewed for demographic data, laterality, pre-operative complaints, co-morbidities, clinical and surgical profiles, adjunctive procedures, complications, and success rates at the last follow up. Result: On comparing pre to post op swelling around eye status, it was found that at pre op the mean swelling score was  $2.90 \pm 2.33$  which was reduced to  $0.50 \pm 1.03$  at post op. So a mean reduction of  $2.40 \pm 0.14$  was observed which was significant statistically ( $p < 0.001$ ). On comparing pre to post op general condition status, it was found that at pre op the mean condition score was  $0.08 \pm 0.48$  which was unchanged at post op. Conclusion: Endoscopic DCR has improved the treatment of Nasolacrimal duct obstruction, with outcome as comparable to external DCR. Thus the present study state Endoscopic DCR as an effective and safe alternative to external DCR with improved patient satisfaction. Endoscopic DCR overall improves the quality of life as measured by the GBI. The NLDO-SS correlated with the GBI and provide more knowledge about the benefits after Endoscopic DCR than GBI alone by it shelf. The NLDO-SS improve to be promising tool to assess lacrimal obstructions and EN-DCR benefits. In the end patients are not impacted with functional or anatomical outcome, but how procedure help improve the quality of their life. Our study shows

that EN -DCR gives an improvement of general health status, as assessed by a validated questionnaire. This information should be made available to all patients before deciding their management options.

**Keywords**---quality, life, post endoscopic, dacryocystorhinostomy.

## **Introduction**

Endoscopic dacryocystorhinostomy (DCR) can be defined as a surgical intervention for epiphora which is caused by obstruction of the nasolacrimal duct<sup>1</sup>. DCR is generally indicated when there is a symptomatic distal obstruction of the nasolacrimal duct that is not relieved by either syringing probing or. It is not normally indicated when the site of obstruction is in the canaliculi or puncti as this technique will not bypass these areas. A better understanding of the endonasal anatomy, wide endoscopic marsupialisation of the lacrimal sac, and meticulous care of the nasal mucosa are pertinent to achieve good results<sup>2</sup>.

The two different approaches for DCR area a) external, via skin incision, and b) endoscopic approach (Endoscopic -DCR). In the last few years, Endoscopic -DCR has become the procedure of choice, owing to its numerous advantages, including good aesthetic result, lack of external scars, preservation of the pumping mechanism of the orbicularis oculi muscle, and shorter operative time, with an overall success rate ranging between 87 and 95%. In cases where NLD obstruction affects the lacrimal drainage systems both eyes, it has been an established approach to perform two DCRs in separate settings to relieve one single obstruction at a time.<sup>3</sup> In place of that, a simultaneous procedure has been considered by some surgeons to correct both sides in a single setting.<sup>4</sup>

The Glasgow Benefit Inventory (GBI) questionnaire is generally used postoperatively to measure improvement in the quality of life.<sup>5</sup> The GBI is considered to be a validated tool to measure quality of life of patients post interventions/surgeries, and has been found to be sensitive to otolaryngology interventions as well, and thus is applicable to DCR surgeries. The questionnaire consists of 18 items: 12 are related to general improvement; 3 are related to social improvement; and 3 to physical improvement. Each question has a numeric rating scale for responses, which are further analyzed statistically.<sup>6</sup> The satisfaction of the patients with the procedure is assessed using a questionnaire similar to those used in a number of other studies, which comprises of reasons of the patients for choosing the Endoscopic-DCR technique, concerns regarding surgery, postoperative discomfort, and whether the patient would recommend DCR surgery to neighbors or relatives.<sup>7</sup> In this study, we have reviewed the demographic, clinical and surgical outcomes and quality of life post Endoscopic Dacryocystorhinostomy (Endoscopic -DCR) for NLD obstruction at our tertiary care center.

## **Material & Method**

After obtaining approval from medical ethical committee(Ref code 97th ECM II B-Thesis/p79) of King George Medical University, the study was conducted in the Department of Otorhinolaryngology and Head-Neck Surgery, King George's Medical University, Lucknow for One Year.

### **Inclusion Criteria**

- All operated patients of chronic dacryocystitis who had undergone Endoscopic DCR.

### **Exclusion Criteria**

- Patients not willing to take part in study.

### **Study Sample**

All the cases of chronic dacryocystitis who were admitted and operated via Endoscopic DCR in the last five years (2015-2019). A total of 315 Endoscopic DCR cases were performed in our institution in the last five years, and out of which 226 patients consented to participate in the study.

### **Methodology**

The records of patients who underwent Endoscopic DCR in the last five years were retrieved from the archival records of Department of Otorhinolaryngology and Head-Neck Surgery, K.G.M.U and were reviewed for demographic data, laterality, pre-operative complaints, co-morbidities, clinical and surgical profiles, adjunctive procedures, complications, and success rates at the last follow up. Anatomical success was defined as patent ostium on irrigation and functional success as free flow of normal saline into theostium on lacrimal syringing (per op and post op) and resolution of epiphora. These patients were contacted telephonically and called for follow-up on OPD basis. Those who agreed to visit OPD were presented with questionnaires (GBI questionnaires and NLDO-SS) and the data was recorded and further analyzed and compared. As for the remaining patients who were unwilling for an OPD visit, questionnaires were presented telephonically and the answers recorded for further analysis.

The symptoms of the patients were evaluated using the Nasolacrimal Duct Obstruction Symptom Score (NLDO-SS) questionnaire. The NLDO-SS questionnaire is a suitable and validated tool for subjective postoperative outcome assessment after an Endo-DCR procedure. It consists of eight items: five items focused on the common ocular symptoms of NLD obstruction; two items describing the conditions in the nasal cavity; and one general condition. The symptoms were graded using an 11-point numeric rating scale (from 0 being for Nosymptom to 10 being for worst imaginable symptom). The total score for the NLDO-SS ranges from 0 to 80 points.

## Results

Table – 01: Sex Distribution of Cases

SEX	No.	%
Male	111	49.1
Female	115	50.9
Total	226	100.0

The sex distribution of cases is shown in table-2. Among the cases, males and females were almost in equal proportion. There were 111 (49.1%) males and 115 (50.9%) were females.

Table – 02: Pre to Post Op Comparison of Discharge in the Eye

DISCHARGE IN THE EYE	Mean	SD	Mean Diff.	SE (Diff.)	t-value	p-value
Pre Op.	3.69	2.62	3.11	0.16	19.67	<0.001
Post Op.	0.58	1.07				

On comparing pre to post op discharge in the eye status, it was found that at pre op the mean discharge score was  $3.69 \pm 2.62$  which was reduced to  $0.58 \pm 1.07$  at post op. So a mean reduction of  $3.11 \pm 0.16$  was observed which was significant statistically ( $p < 0.001$ ).

Table – 03: Pre to Post Op Comparison of Swelling around eye

SWELLING IN THE EYE	Mean	SD	Mean Diff.	SE (Diff.)	t-value	p-value
Pre Op.	2.90	2.33	2.40	0.14	17.43	<0.001
Post Op.	0.50	1.03				

On comparing pre to post op swelling around eye status, it was found that at pre op the mean swelling score was  $2.90 \pm 2.33$  which was reduced to  $0.50 \pm 1.03$  at post op. So a mean reduction of  $2.40 \pm 0.14$  was observed which was significant statistically ( $p < 0.001$ ).

Table – 04: Pre to Post Op Comparison of General Condition

GENERAL CONDITION	Mean	SD	Mean Diff.	SE (Diff.)	t-value	p-value
Pre Op.	0.08	0.48	0.00	0.00	NA	NA
Post Op.	0.08	0.48				

On comparing pre to post op general condition status, it was found that at pre op the mean condition score was  $0.08 \pm 0.48$  which was unchanged at post op.

## Discussion

In our study comparing pre to post op tearing status, it was found that at pre op the mean tearing score was  $5.80 \pm 2.02$  which was reduced to  $1.17 \pm 1.35$  at post op. So a mean reduction of  $4.63 \pm 0.12$  was observed which was significant statistically ( $p < 0.001$ ). On comparing pre to post op discharge in the eye status, it was found that at pre op the mean discharge score was  $3.69 \pm 2.62$  which was reduced to  $0.58 \pm 1.07$  at post op.<sup>8</sup> So a mean reduction of  $3.11 \pm 0.16$  was observed which was significant statistically ( $p < 0.001$ ). On comparing pre to post op swelling in the eye status, it was found that at pre op the mean swelling score was  $2.90 \pm 2.33$  which was reduced to  $0.50 \pm 1.03$  at post op. So a mean reduction of  $2.40 \pm 0.14$  was observed which was significant statistically ( $p < 0.001$ ). On comparing pre to post op pain in the eye status, it was found that at pre op the mean pain score was  $2.49 \pm 2.02$  which was reduced to  $0.35 \pm 0.62$  at post op.<sup>9</sup> So a mean reduction of  $2.14 \pm 0.12$  was observed which was significant statistically ( $p < 0.001$ ). On comparing pre to post op change in visual acuity status, it was found that at pre op the mean change score was  $0.085 \pm 0.56$  which was slightly changed to  $0.080 \pm 0.55$  at post op. So a mean reduction of  $0.004 \pm 0.67$  was observed which was not found to be significant statistically ( $p = 0.318$ ). On comparing pre to post op nasal blockage status, it was found that at pre op the mean blockage score was  $1.11 \pm 1.55$  which was reduced to  $0.16 \pm 0.46$  at post op. So a mean reduction of  $0.95 \pm 0.09$  was observed which was significant statistically ( $p < 0.001$ ). On comparing pre to post op nasal cavity discharge status, it was found that at pre op the mean cavity discharge score was  $1.50 \pm 1.82$  which was reduced to  $0.28 \pm 0.57$  at post op.<sup>10</sup> So a mean reduction of  $1.21 \pm 0.10$  was observed which was significant statistically ( $p < 0.001$ ). On comparing pre to post op general condition status, it was found that at pre op the mean condition score was  $0.08 \pm 0.48$  which was unchanged at post op.<sup>11</sup> It is similar to and supported by the study of Herzallah et al<sup>12</sup> in which the preoperative symptom scores of the patients for each side ranged between 12 and 80 (mean standard deviation [SD]:  $38.23 \pm 15.7$ ), with no significant difference in the symptom score between the right and left sides ( $p < 0.7$ ). The postoperative symptom scores ranged between 0 and 50 due to the presence of one failed case (mean SD:  $5.4 \pm 12.9$ ).

Thus it can be safely concluded that a reduction in the symptom scores of the patients was reported for each of the eight symptoms, with a significant decrease in the total score ( $p < 0.001$ ). Tearing, mucoid/purulent discharge from the eyes, swelling around eyes, pain around eyes, nasal blockage and nasal discharge have a significant effect on assessing the surgical outcomes of endoscopic DCR, whereas changes in visual acuity or general condition of patient have no impact on surgical outcome.<sup>13</sup>

## Conclusion

Endoscopic DCR has improved the treatment of Nasolacrimal duct obstruction, with outcome as comparable to external DCR. Thus the present study state Endoscopic DCR as an effective and safe alternative to external DCR with improved patient satisfaction. Endoscopic DCR overall improves the quality of life as measured by the GBI. The NLDO-SS correlated with the GBI and provide more knowledge about the benefits after Endoscopic DCR than GBI alone by it shelf. The NLDO-SS improve to be promising tool to assess lacrimal obstructions and EN-DCR benefits. In the end patients are not impacted with functional or anatomical outcome, but how procedure help improve the quality of their life. Our study shows that EN -DCR gives an improvement of general health status, as assessed by a validated questionnaire. This information should be made available to all patients before deciding their management options

**Study Designed:** Retrospective Study.

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