



COMPARISON OF EXTERNAL AND ENDONASAL ENDOSCOPIC DACRYOCYSTORHINOSOTOMY FOR ACQUIRED NASOLACRIMAL DUCT BLOCKAGE

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KEYWORDS :

INTRODUCTION :

Acquired nasolacrimal duct (NLD) obstruction is one of the most important causes of epiphora for which patients seek ophthalmic consultation. NLD blockage can be congenital or acquired. Treatment of NLD obstruction is surgical and dacryocystorhinostomy (DCR) is the standard surgical procedure performed.

So far external dacryocystorhinostomy (EX-DCR) is considered as the gold standard treatment of NLD obstruction. The reported success rate of this surgery ranges from 80% to 95%.

With the advent of laser and endoscopic technique permitting better visualization, the endonasal dacryocystorhinostomy (EN-DCR) is becoming popular now a days. All the methods have reported a success rate varying from 60% to 97% but have the advantage of no skin scar, less operating time, more patient satisfaction and less disruption of medial canthal anatomy and lacrimal pump function.

AIMS AND OBJECTIVE:

This study aims to compare the surgical outcome of two methods of treatment of NLD obstruction viz: traditional external dacryocystorhinostomy and endonasal endoscopic dacryocystorhinostomy in terms of

- 1: Patency of the duct and improvement in symptoms.
- 2: Rate of complications and satisfaction of the patients.

MATERIAL AND METHODS:

This study was carried out at the department of Ophthalmology and department of ENT Mata Gujri Memorial Medical College, Kishanganj, Bihar from October 2011 to October 2013.

STUDY DESIGN:

prospective randomized interventional study.

Inclusion criteria:

- Symptoms of epiphora and/or chronic dacrocystitis.
- NLD obstruction with patent canaliculi on probing and syringing.

Exclusion criteria:

- Co-existing eyelids or punctal pathology.
- Having Lacrimal sac or nasal pathology.
- Age less than 18 years.

Sampling Technique:

- Group A: Included patients who underwent endonasal endoscopic dacryocystorhinostomy (En-DCR).
- Group B: Included patients who underwent conventional external dacryocystorhinostomy (Ex-DCR).

OPERATIVE PROCEDURES :

ENDOSCOPIC ENDONASAL DCR-

EN-DCR was performed under local anesthesia. With the help of endoscope the sac area which is transilluminated by the light pipe is identified in the middle meatus. The lacrimal sac flaps are incised, everted, and adjusted to accurately appose the nasal mucosa. A small

gel foam patch is packed lightly in the exposed sac to keep the flap anastomosis in position throughout the initial healing period. A silicone bicanalicular tube was positioned. Post-operatively, Irrigation and spray of the nasal cavity with saline are performed to prevent crust formation.

EXTERNAL DCR

Surgery was performed under local anaesthesia with or without sedation. A straight incision is made medially to the angular vein at the level of the medial canthal ligament. Anterior lacrimal crest is exposed and periosteum is separated along with the lacrimal sac. A 15 mm x 10 mm bony osteum is made and nasal mucosa opened to form anterior and posterior flaps, then flaps sutured with 6-0 vicryl sutures and skin is closed with 6-0 silk sutures.

OBSERVATIONS AND RESULTS:

A total 53 patients were included in the study out of which 23 were in group A and 30 were in group B. But 3 patents from group A and 2 patients from group B were lost to follow up and so excluded from the study. Finally 20 patients underwent Endonasal DCR (EN-DCR) ie Group A and 28 patients underwent External DCR (EX-DCR) ie Group B.

Age-

The mean age was 48 years in group A (range 23 -72 years) and in group B it 46 years (range 20 to 74).

Sex-

In group A, 8 patients were male (40%) while 12 were females (60%). In group B, 12 patients were male (42.85%) and 16 patients were female (57.14%).

Table 1- Demographic characteristics- Age & Sex

		Group A	Group B	Total	
Mean age (In years)		48	46	47	
Sex	Male	8 (40%)	12 (42.85%)	20 (41.66%)	$\chi^2=0.04$ p=0.841
	Female	12 (60%)	16 (57.14%)	28 (58.33%)	

Results-

In group A ie EN-DCR group, 4 (20%) patient had failure while surgery was labelled successful in 16 (80%) patients according to study parameters. In group B ie EX-DCR, surgery was successful in 25 (89.28%) and failed in 3 (10.71%) as per study guidelines.

Table 2- Results following surgical procedures

	Success	Failure	Test of Significance
Group A	17 (85%)	3 (15%)	Fisher exact
Group B	25 (89.28%)	3 (10.71%)	p=0.683

Complications-

Complications were assessed in terms of excessive bleeding during or early post-operative period. Intra-operative bleeding was assessed by operating surgeon as normal and expected or abnormal and excessive. Assessment was done by the number of gauge piece used but it was

mainly the subjective assessment by surgeon only. In group A, 2 (10%) patients had excessive bleeding while in group B, 6 (21.43%) showed abnormal bleeding. But none of the patients in either group received blood transfusion for excessive bleeding.

Abnormal pain was defined as need of analgesic more than twice daily for more than 3 days.

Patient satisfaction-

Patient satisfaction was assessed on the basis of post-operative pain and need for analgesics. But it was mostly a subjective assessment and no objective questionnaire was used for assessment. In group A patients were more satisfied with cosmetic outcome as compared to group B and all 17 (successful) patients were willing to undergo same procedure for other eye if needed. In group B only 16 out of 25 (successful) patient said yes to the same procedure if needed in future.

DISCUSSION:-

Till date EX-DCR is the gold standard surgical treatment of choice for chronic dacryocystitis. But in the era of minimally invasive surgery, alternative surgical techniques have constantly being tried and explored. Endonasal DCR can be a good surgical alternative for the management of chronic dacryocystitis. The obvious advantage of avoiding an external incision is attractive to many patients. This seems to gain even more importance because involuntal stenosis, the most common etiology of nasolacrimal duct obstruction, occurs more frequently in women and women tend to place greater importance in avoiding facial incisions. Although external incisions usually heal well, the scar may occasionally persist, interfere with spectacles, or produce canthal webbing. Additional advantage of EN-DCR over standard DCR also relate to the patient satisfaction. Decreased recuperation is very attractive to patients eager to return to work or social life.

The success of EN-DCR and EX-DCR are comparable, around 80%-90%³⁴. In our study also we have a success rate of 85% in EN-DCR as compared to 89.28% in EX-DCR group.

The relatively high success rate of EX-DCR does not detract the limitations of the procedure. The presence of a cutaneous scar, the potential of injury to medial canthal structures, cerebrospinal fluid rhinorrhoea and functional interference with the physiological action of the lacrimal pump are but a few of the disadvantages of this procedure. Post-Operative bruising, epistaxis and late DCR failure have led to the search for a less invasive approach of this procedure.

CONCLUSION :

Minimally invasive surgical technique is the need of present era. The classical treatment of chronic dacryocystitis has been external dacryocystorhinostomy (EX-DCR). But with the advent of endoscopes and laser, newer routes, transnasal and transcanalicular. The most important is the avoidance of skin scar, priority in young adults especially women. Since it is minimally invasive technique, it respects natural lacrimal pump mechanism, with lesser operative time, faster patient recovery and lesser morbidity as compared to EX-DCR. These features make it suitable for old frail patients.

The intra-operative pain and complications like excessive haemorrhage are less as compared to Ex DCR. This is of advantage in patients with hypertension or patients having bleeding tendency.

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