

DACRYOCYSTORHINOSTOMY – A COMPARATIVE STUDY WITH & WITHOUT TUBE INTUBATIONSamba Siva Reddy Pujala¹, Suaik Mohammed Pervaiz Hussain², Superna Mahendra³, Srihari Atti⁴¹Assistant Professor, Department of Ophthalmology, Osmania Medical College, Hyderabad.²Assistant Professor, Department of Ophthalmology, Osmania Medical College, Hyderabad.³Assistant Professor, Department of Ophthalmology, Osmania Medical College, Hyderabad.⁴Associate Professor, Department of Ophthalmology, Osmania Medical College, Hyderabad.**ABSTRACT****BACKGROUND**

The aim is to study the success rate of dacryocystorhinostomy with and without intubation.

MATERIALS AND METHODS

A prospective study was done to compare the results in dacryocystorhinostomy, 50 cases with age group of 10-70 years were included in this study and randomised into two groups. There were 38 female patients, 12 male patients. 22 cases underwent DCR surgery in the right eye and 28 patients underwent DCR surgery in the left eye. Group A consists of 25 cases which underwent DCR with tube intubation. Group B consists of 25 cases which underwent DCR without tube intubation. Group A showed higher success rate in terms of nasolacrimal duct patency.

RESULTS

After one year of followup in group A, out of 25 cases who had DCR with tube intubation, in 24 cases there was patency, there was no patency in 1 case. Success rate was 98%.

CONCLUSION

The cases of DCR with tube intubation had high success rate compared to those without tube intubation.

KEYWORDS

Dacryocystitis, Dacryocystorhinostomy, Tube Intubation, Followup and Results.

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BACKGROUND

Anatomy of the lacrimal drainage system includes the puncta, canaliculi, lacrimal sac, and nasolacrimal duct.¹ Nasolacrimal duct obstruction (NLDO) can result in watering of eyes. The obstruction of the nasolacrimal obstruction can occur as a congenital or acquired disease.² Acquired causes can occur in the proximal puncta, canaliculi, common canaliculus, or more distally within the lacrimal sac or nasolacrimal duct.² Acquired NLDO may develop for a variety of reasons, including secondary to facial trauma, chronic environmental allergies, toxicity from chemotherapeutic drugs or topical medications,³ neoplasms, long-standing sinus disease, or following sinonasal surgery.³

A detailed history is crucial to distinguishing NLDO as the cause of tearing as opposed to reflexive tearing from other causes. A complete patient history should include assessment of symptoms, medications used (including sinus decongestants and nasal sprays, topical eye drops such as phospholine iodide⁴), and other risk factors (e.g. facial or nasal trauma, sinus disease, environmental allergies, systemic chemotherapeutic drugs such as Taxotere, history of sinus or nasal surgery, periorbital radiation).

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**Sample Size**

A sample of 50 consecutive patients were selected for the study.

MATERIALS AND METHODS

This was a prospective randomised interventional study conducted at Sarojini Devi Eye Hospital which was a tertiary eye care hospital during the period January 2015 to January 2016. 50 cases of chronic dacryocystitis were selected and randomly divided into two groups of 25 each. The inclusion criteria were cases with chronic dacryocystitis. Exclusion criteria were cases with failed DCR, medial ectropion, common canalicular block, atrophic rhinitis, deviated nasal septum, marked turbinate enlargement, concha bullosa.

In Group A DCR was performed with intubation and in Group B DCR was performed without intubation tubes. Postoperatively, cases were followed up on 1st POD, after a week, 3 months and 6 months. Every visit syringing was done to ascertain the patency.

The study of 50 patients with age group of 10-70 were enrolled for the study. More number of cases were observed between ages of 30 to 50 years.

Age Group	Number of Patients
10-20	3
21-30	4
31-40	16
41-50	17
50-70	10
Total	50

Table 1. Age Distribution

There were 38 female patients, 12 male patients. (Table 2)

Gender	Number of Patients
Males	12
Females	38

Table 2. Gender Distribution

Among 50 cases, there were 22 cases who underwent DCR surgery in the right eye and 28 patients underwent DCR surgery in the left eye.

Eye	Number of Patients
Right eye	22
Left eye	28

Table 3. Distribution of the Eyes

Anesthesia

Local anaesthesia was obtained by infiltration over the sac with 2% Xylocaine and adrenaline. This blocked supraorbital, supratrochlear, infratrochlear, anterior ethmoidal, infraorbital nerves. Nasal packing was done with gauze piece soaked with 4% Xylocaine with adrenaline introduced into the middle meatus. Pre-anaesthetic medication was given 1 cc Fortwin and 2 cc Phenergan given intramuscularly.

Procedure

The skin was incised in a crescent manner 5 mm medial to medial canthus for about 1 cm in size. The skin fascia separated, medial canthus ligament was incised at its medial attachment. The medial wall of the sac was separated and periosteum was reflected exposing the lacrimal fossa. Lacrimal bone was perforated and enlarged about 1.5 cm x 1 cm. A probe was passed through the lower punctum, with this guide U-shaped incision made on the sac wall. Similar incision, reverse (∩) shape made on the nasal mucosa. Anterior and posterior flaps were made. Posterior flaps were excised.

A rubber catheter tube with appropriate size of inner diameter 2 mm, outer diameter 6 mm, with a length about 4.5 cm was passed through the corresponding nostril and into the bony ostium. The superior end of tube was sutured to the periosteum. Anterior flaps of the nasal mucosa and anterior flaps of sac mucosa were sutured over the tube with 4-0 Vicryl (3 interrupted sutures), subcutaneous tissue was approximated with Vicryl. This skin incision was closed subcutaneously with 4-0 silk suture. This procedure was carried out on 25 patients. In the remaining 25 patients, anterior flap of the nasal mucosa and sac mucosa was sutured with 4-0 Vicryl. Incised skin was sutured with 4-0 black silk.

Irrigation of the lower punctum was performed in all cases at the end of the procedure. Antibiotic ointment and pressure dressing was applied. Patients were kept on oral antibiotics, anti-inflammatory drugs and nasal decongestant drops for 1 week. Skin sutures removed after 1 week and antibiotic drops instilled for 4 weeks. Nasal tube was removed after 4 weeks.

The surgery was considered to be a success if there was good healing and patients were asymptotically relieved from watering. The followup was done at 1 month, 3 months, 6 months and 1 year. The duct was patent at the end of 1 year. The result in terms of patency of the duct at followup visits are shown below. (Shown in the table-4).



Figure 1. Local Infiltration over Sac



Figure 2. Skin Incision. Skin & Fascia Separate

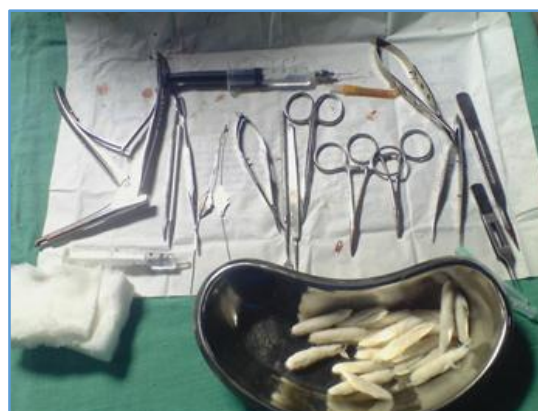


Figure 3. Instruments for DCR



Figure 4. MPL Incised

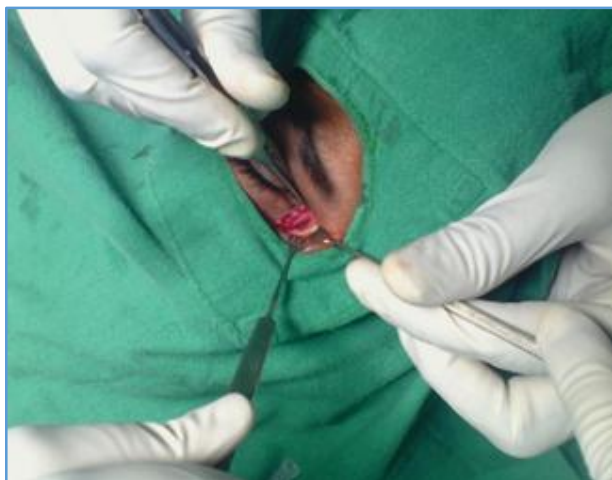


Figure 5 & 6. Nasal Mucosa Incised & Sac Mucosa Incised



Figure 7. Patient with Nasal Tube



Figure 8. Nasal Tube

RESULTS

In Group A (with tube intubation), 24 out of 25 (96%) cases had patency of nasolacrimal passage at the end of one year. In group B (without tube intubation), 23 out of 25 (92%) cases had patency of nasolacrimal passage.

No. of Cases	Type of Procedure	Patent	Not Patent
25	DCR without tube - anterior flap suturing	23	2
25	DCR-tube intubation	24	1

Table 4. Post-operative Results

The operative complications were severe bleeding from bone from 1 case, minimum bleeding was encountered from subcutaneous tissue and nasal mucosa in all cases. There was no wound gap, stich abscess, or postoperative sac abscess in any of the cases.

DISCUSSION

Chronic dacryocystitis, one of the common eye problem, is more common between 40 to 60 years.⁵ The disease is more common in females, low socioeconomic group and in people with poor personal hygiene. Left sac is more common than right sac. Failure of DCR is probably due chronic infection.⁶ The procedure requires meticulous attention on technical details, the details are as follows.

- Careful placement of incision to avoid angular vein damage.
- Atraumatic handling of soft tissue.
- Clean rhinostomy.
- Careful dissection of exposure of the lacrimal sac.
- Nasal intubation tube maintains the patency of the ostium, less chances of closure by granulation tissue and less chances of pseudoflap formation with lacrimal fascia.
- Immediate removal of the gauze piece at the time of surgery while inserting the tube does not lead to profuse nasal bleeding as widely believed.

Results- After one year of followup in group A, 25 had patent DCR and 1 case failed. Whereas in group B, 25 cases had patent DCR and 2 cases failed.

CONCLUSION

The cases undergoing DCR with tube intubation had high success rate compared to those without tube intubation in terms of nasolacrimal patency at the end of one year. Hence, nasolacrimal intubation is a simple and effective technique in DCR.

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