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SIMPLIFIED DACRYOCYSTORHINOSTOMY (DCR) WITH SUTURING OF ANTERIOR FLAPS ONLY

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ABSTRACT:

Objective: To determine the efficacy of external DCR, suturing of anterior flaps with excision of posterior flaps and intubation.
Design: Quasi Experimental.
Materials and Methods: This study was conducted at Department of Ophthalmology Unit-1 Dow University of Health Sciences, Civil Hospital Karachi and a private clinic. 110 patients of chronic dacryocystitis with nasolacrimal duct block (NLD) were operated over a period of $3_{1/2}$ years from Feb 2009 to June 2012. All patients were operated under general anesthesia by a single surgeon. Only the anterior mucosal flap of lacrimal sac and nasal mucosa were sutured together with excision of posterior flaps and silicone intubation was done. Tube was removed after a period of 3 months. Patients were followed postoperatively every month for a period of 6 month.
Results: A success rate of 95.45% was achieved with symptomatic relief of epiphora.
Conclusion: External DCR with suturing of anterior flaps with excision of posterior flaps and intubation is a highly successful procedure with 95.45% success rate and is relatively an easy procedure as compared to suturing of both anterior and posterior flaps.

Keywords: Dacryocystorhinostomy (DCR), Epiphora, Probing.

INTRODUCTION

Dacryo**c**ystitis is infection of the lacrimal sac usually secondary to nasolacrimal duct obstruction. It may be acute or chronic. Chronic dacryocystitis presents with epiphora which may be associated with chronic conjunctivitis.

External DCR is the most popular operation, aim is to make an epithelium lined tract between the sac and the nasal mucosa and this is done by suturing together the anterior and posterior flaps of lacrimal sac and the nasal mucosa. Avoiding intubation as much as possible. A French Ophthalmologist Toti described Dacryocystorhinostomy in 1965[1]. His classic procedure has undergone many modifications but the basic procedure remains same. The success rate of procedure ranges between 93-95%[1] .He proposed that after creating an external approach to the larimal sac its portion near the canaliculi should be preserved and absorbed into the nose by creating a window in the lateral wall of the nose. Dupuy-Dutemps and Bourguet in France and Ohm in Germany independently published what became the basis of truly modern DCR in the 1920's [2]. Suturing of anterior and posterior flaps of lacrimal sac with nasal mucosal flaps was suggested by Ohm [3]. Suturing a rubber catheter into the sac was suggested by Iliff[4]. Older introduced routine use of silicone tube in external dacryocystorhinostomy[5].

Suturing of the posterior flap is quite difficult. We tried a simple form of External DCR with suturing of anterior flaps only with excision of posteriorflaps and intubation of fistula for 3 months with the same results.

MATERIAL AND METHODS

This study was carried out at Department of Ophthalmology Unit-1 Dow University of Health Sciences, Civil Hospital Karachi and at a private clinic, over a period of 3 years and 6 months from February 2009 to June 2012. Inclusion criteria were the patients suffering from chronic Epiphora due to partial and total acquired nasolacrimal duct obstruction above 18 years of age. Exclusion criteria were the patients who were suffering from watering due to other causes like conjunctivitis, corneal lesions, glaucoma, previous pre-orbital or lacrimal surgery ,orbital radiation, congenital nasolacrimal duct obstruction, canalicular obstruction, lacrimal pump failure ,trauma with facial fractures, drug reaction, pregnancy, lactation, nasal pathology and patients who were not fit for general anaesthesia. All patients underwent for slit lamp examination, Dye dissappearance test and Syringing Probing. Post probing patient were started topical antibiotics for one week and first follow up was done after 1 month. Nasal examination was done by an ENT Specialist. Patient counseling regarding procedure and possible postoperative complications like bleeding, nasal bone fracture and failure of procedure were explained. A written consent was taken from all patients. All surgeries were performed under General Anesthesia by a single surgeon. Patients were discharged after removing nasal pack on first postoperative day.

SURGICAL METHOD

Nasal packing was done with Xylocaine 2% and adrenaline 1:100,000. An 8 mm vertical incision 10 mm medial to the inner canthus was made avoiding injury to angular vein. Blunt dissection was done down to the bone. Medial palpebral ligament was separated to expose lacrimal sac. Anterior and posterior flaps of the sac were made and the system was intubated. Lacrimal bone was removed and an opening was made 1cm in size possibly round or oval in shape with n sharp edges. Nasal mucosa was cut and anterior and posterior flap were made and excision both posterior flaps was done. Both anterior lacrimal and nasal mucosal flaps were sutured together after passing the tube through the fistula. Using 6-0 Vicryl suture, muscles and skin were sutured. Nasal packing was done to prevent post-operative bleeding.

Patient was discharged on the next day after removal of nasal packing and making sure there was no bleeding and the tube was in place. Post-operatively patients were put on topical and oral antibiotics for 1 week

Patients were reviewed after 1 week then on monthly basis for 3 months. On each follow up visit history regarding watering, patency of fistula and position of tube was checked. Tube was removed after 3 months, patient was observed every month for 3 months for recurrence of symptoms .

TABLE – I

AGE GROUPS

Age group	Age‘	No of patients	Percentage
1	18-40	30	27.3%
2	41-60	73	66.36%
3	61 and above	7	6.36%
Total		110	100%

TABLE-II

SEX PREVALENCE

Female	Male	Total patients
71	39	110

TABLE-III

INTRA OPERATIVE COMPLICATIONS

COMPLICATIONS	NO OF PATIENTS	PERCENTAGE
Bleeding	35	31.82%
Nasal bone fracture	2	1.82%
Loss of nasal mucosa	15	13.64%

TABLE-IV

POST OPERATIVE COMPLICATIONS

COMPLICATIONS	NO OF PATIENTS	PERCENTAGE
Post - op bleeding	25	22.73%
Loss of tube	2	1.82%
Infection	11	10%

TABLE-V

CAUSES OF FAILURE

CAUSES OF FAILURE	NO OF PATIENTS	PERCENTAGE
Ostium closure due to		
loss of tube	3	2.72%
Canalicular stenosis	2	1.82%

RESULTS:

A total of 110 patients were operated over a period of 3 years 6 months. Females were 71–Male patients 39. Right side was operated in 60 patients. Majority of patients were from poor socio-economic status. Out of the 110 patients only 5 patients came back with recurrent epiphora after sugery within 3 months, 3 of them had lost their tubes within 1 month of surgery and 2 had previously unidentified canalicular fibrosis. A success rate of 95.45% was achieved.

Complications encountered during surgery was bleeding in 35 patients, hemostasis was achieved with cautery and hot packs. Osteotomy extension with nasal bone fracture occurred in 5 patients which healed within a period of 3 months. Partial loss of nasal mucosa during osteotomy occurred in 15 patients, a small anterior flap was made and remaining mucosa was excised. Postoperative bleeding in 25 patients was managed with nasal packing, injection Transamine and bed rest.

Failure of DCR occurred in 5 patients. Closure of ostium due to early loss of tube occurred in 3 patients. Canalicular stenosis leading to DCR failure occurred in 2 patient.

DISCUSSION.

Watering of eye due to obstruction of lacrimal outflow tract is called epiphora,

It is a common problem about 33% of the complaints in every day of ophthalmological practice [6].The aim of dacryocystorhinostomy (DCR) is to leave the patient with a patent rhinostomy in order to create a low pressure lacrimal bypass system and relieve patient's epiphora, dacryocystitis or mucocele.

In present study external DCR was performed on 110 patients and only the anterior mucosal flaps were sutured after silicone tube intubation. Tube was removed after 3 months and patient was followed monthly for further 3 months. On every visit patient was thoroughly examined for patency of fistula and recurrence of symptoms.

In present study age of the patients ranged between 18 to 70 years. There was a female preponderance 71 females-39 males. Similar female preponderance is also shown by Ali[7] and Ahmed[8] 89.6% and Talpur [9].One of the possible cause is narrow lower nasolcrimal duct and secondly hormonal changes in middle aged females[10].

Patients in our study belonged to lower socio-economic group and in this group.

Use of cheap and adulterated cosmetics on the wrong side of lashes can also be factor in obstruction of nasolacrimal duct. Similar correlation is also reported by Mir Zaman[10].

Only 5(4.55%) patients developed epiphora and were re-operated, 3 of them came back within 2 months due to early loss of tube and 2 patient came back after removal of tube. Remaining 105 patients became symptom free upto 6 months postoperatively. Serin et al reported a success rate of 96.67% with posterior flap excision[11] . Elwan reported a success rate of 90% with excision of posterior flaps and 85% with suturing. He concludes that excision of the posterior sac mucosa may improve the success rate[12]. Baldeshi et al anastomosed anterior flaps and did not suture posterior flaps and his success rate was of 100%. He believes that this modified technique can be used to simplify and speed up traditional external DCR without decreasing its well known reliability[13].Zaman et al gave a success rate of 98.33% he also sutured only anterior flaps and engaged them in the muscle layer[10]

In our study all patients were intubated. 3 of these patients lost tube in the 1st month post-operatively during bouts of sneezing and coughing resulting in ostium closure. Intubation of the fistula is a useful modified procedure Jliff reported 90% [4], Tarbat and Custer reported 95% [14] and Dolman reported 90.2% success rates with intubation[15]. Hussein et al did a comparative study and mentioned 94.7% success results in intubated and 77.8% success results in nonintubated cases[16]. Advani et al have given a success rate of 95% in intubated and 88% in non intubated cases[17].

Intra operative complication encountered were mainly nasal muscoal bleeding, fracture at osteotomy site and loss of nasal mucosa. Mir Zaman in his study of 120 patients reported bleeding from nasal mucosa in 9 patients and nasal mucosal tearing in 4 patients[10]. Five patients came back with epiphora, 3 of them had lost their tube within the first month of their surgery during bouts of coughing and sneezing. The cause of failure was closure of ostium due to scarring within the rhinostomy. Another cause of failure in 2 patient was canalicular stenosis .The causes of failure cited are previously unidentified canalicular stenosis, fibrous tissue growth, inappropriate size or location of bony ostium, common canalicular obstruction, intervening ethmoidal air cells, sump syndrome and active systemic disease.[18,6]

CONCLUSION:

This study concludes that external DCR with silicone intubation and suturing of anterior flap only is a successful procedure and relatively an easy procedure as compared to suturing of both posterior and anterior flaps.

REFERENCE

1. Girgis Dacryocystorhinostomy" ,1968:J.Laryngol.Otol.,82(2)(1968).p149-152
2. G.Pico,A modified technique of external Dacryocystorhinostomy. Am J.Ophthalmology:72(4)(1971),p.679-690.
3. Ohm J.Nerbesserungen an meinen Nystagmographen.Klin Monatsble Augenheilk 1926; 1: 791-4
4. Jliff CE. A simplified dacryocystorhinostomy. 1954-1970. Arch ophthalmol 1971; 85: 586-91.
5. Older JJ. Routine use of a silicone stent in a dacryocystorhinostomy. Ophthalmic Surgery 1982; 13: 911-5
6. Gillissen JPA, Van Noort B. Epiphora, how to solve a common problem? Orbit 1990; 9:293-4
7. Ali A, Ahmad T. A. Dacryocystorhinostomy- a review of 51 cases. Pak J Ophthalmol 2001; 17(4): 122-8
8. Ahmad MA. Dacryocystorhinostomy with and without intubation.Pak J Ophthalmol1992; 8(2): 39-42
9. Talpur KI Jatoi SM, Khan SA Dacryocystorhinostomy-a clinical report of 54 cases. Pak J Ophthalmol 1998; 14 (4): 169-71
10. Zaman M,Babar TF, Saeed N. A review of 120 cases of dacryocystorhinostomy (Dupuy Dutemps and Bourgett Technique) .JAMC 15(4):Oct-Dec 2003
11. Serin D, Alagoz G, Karsloglu S, et al. External Dacryocystorhinostomy ; Double Flap Anastomosis or Excision of the Posterio Flaps ? Ophthal Plast Reconst Surg 2007;23;28-1
12. Elwan S. A randomized study comparing DCR with and without excision of the posterior mucosal flaps. Orbit.2003;22:7-13.
13. Baldeshi L,Nardi M,Hintschich CR, et al. Anterior suspended flaps: a modified approach for external Dacryocystorhinostomy. Br J Ophthalmol. 1998;82:790-2.
14. Tarbat KJ, Custer PL. External Dacryocystorhinostomy,Surgical success,patient satisfaction, and economic cost. Ophthalmology.1995;102:1065-75
15. Dolman PJ, Comparison of external Dacryocystorhinostomy, Ophthalmology,2003;110:78-4
16. Hussein M,Akhter S,Awan S. DCR(dacryocystorhinostomy) with or Without Intubation.Pak J Med Res 2005;44: 75-8
17. Advani RK, Haleopota FM, Shah SIA,et al. Indications and Results of DCR with Silicone tube intubations. Pak J Ophthalmol.2001;17:60-2
18. Jordan DR, McDoonald H. Failed dacryocystorhinostomy: the sump syndrome. Ophthalmic Surgery 1993; 24: 692-3