DOI: 10.18410/jebmh/2015/918

ORIGINAL ARTICLE

ENDOSCOPIC DACRYOCYSTORHINOSTOMY: ROLE OF STENT

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HOW TO CITE THIS ARTICLE:
Ramagiri Vijay Kumar, Naveen Kumar Korivipati, N. Radha Krishna, S. Indira Devi. "Endoscopic Dacryocystorhinostomy: Role of Stent". Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 40, October 05, 2015; Page: 6725-6730, DOI: 10.18410/jebmh/2015/918

ABSTRACT: Chronic Dacryocystitis is a disease characterized by excessive watering from the eyes. We present a study conducted between June 2012 to June 2014, on 60 patients of chronic Dacryocystitis at tertiary care center, who were subjected to endoscopic DCR. Of the 60 patients, 30 randomly selected patients were operated with stent kept and remaining 30 without stent. We tried to compare if there was any benefit in maintaining the patency of the neosotium and also difference in the relief of symptoms by keeping the stent in place during surgery for a period of 6 weeks. Though there was better relief in Epiphora among patients with stent than those without stent in the immediate post-operative period but on the final outcome we found that there was no difference either in the patency maintenance or relief of symptoms in the post-operative end result between either groups.

KEYWORDS: Endoscopic DCR, Post-Operative period, Stent.
MESHTERMS: Dacryocystorhinostomy, Endoscopic, DCR stent.

INTRODUCTION: Chronic Dacryocystitis is characterized by excessive watering from the eyes.[1] The excess flow of tears might be because of excessive production or due to obstruction to the drainage pathway. Normally tears are produced by the lacrimal gland as a protective cover to the ocular surface. The tears then drain out through the puncta into the canaliculi, then the lacrimal sac and finally pass through the nasolacrimal duct into the nose in the inferior meatus.[2] In dacryocystorhinostomy, we remove the crest of bone over the lacrimal sac, open the sac and create a new opening just anterior to the middle turbinate. If bone is properly removed and sac opened failure rates are low. Failures usually are due to inadequate removal of bone, closure of newly created ostium with granulations, synechiae. To maintain the patency of ostium we tried to see if there was any use of placing the silastic stent during the surgery and keeping it in place for a period of 6 weeks. Endoscopic DCR is now gaining importance because of the ease of performing the surgery as well as absence of scar as in external DCR which gives it a cosmetic advantage. The present study was conducted to analyze if there was any difference in post-operative outcome of surgery with and without placing the stent.

MATERIALS AND METHODS: A prospective study was conducted among the 60 patients of chronic dacryocystitis who attended the ENT OPD during the period of June 2012 to June 2014 after obtaining the written informed consent. After thorough evaluation, which includes history, and clinical examination and investigations, the patients were subjected to lacrimal syringing at the Ophtalmology department of the institute.

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History: Most of the patients are came with following complaints, watering from the eyes, Nasal obstruction, swelling at medial canthus (Mucocele), Nasal discharge, Visual disturbances, Allergic symptoms like sneezing, itching of eyes, nose, palate.

Clinical Examination: Routine anterior Rhinoscopy examination and Diagnostic Nasal Endoscopy were done, which showing the deviation of the septum, in some cases inferior turbinate hypertrophy were present. Mucocele was found in some cases.

Investigations: X-ray of the para nasal sinuses was done, in some cases CT scan was done to evaluate sinusitis.

All the patients underwent endoscopic DCR and were divided randomly into two groups (group 1 and 2). Group 1 includes 30 patients who were kept on stent postoperatively and group 2 includes remaining 30 patients who were operated without placing the stent. We tried to analyze if there was any difference in post-operative outcome of surgery, if stent was placed.

Operative Procedure: Endoscopic DCR was done by using 0^{o}, 30^{o} rigid nasal endoscopes, camera with monitor (karl storz), whenever necessary micro debrider was used.

Steps of Surgery: The nose is packed with 4% xylocaine with adrenaline (To decongest the nasal mucosa), nose is infiltrated with 1% xylocaine and 1 in10000 adrenalin. After routine DNE, incision is made with 15 no. blade on the lateral nasal wall just in front of the neck of the middle turbinate, posteriorly based mucousal flap elevated, lacrimal bone identified and partly removed for the creation of window on the lacrimal sac and upper naso lacrimal duct. Using 15 no. blade vertical incision made in the lacrimal sac and contents aspirated, and silicon tubes inserted in some cases.

Inclusion Criteria: Patients who underwent endoscopic DCR during study period. No obstruction at the level of canaliculus.

Exclusion Criteria: Patients who have not given written informed consent for surgery, post traumatic, previous surgery to lacrimal apparatus, either by external or internal approach to the same eye, surgery already done for one eye at our centre and has been included already in the study, obstruction in the canaliculus or canalicular duct.

All patients were followed up postoperatively for assessment of symptomatic control and evaluation of any postoperative complications. Stent was removed after period of 6 weeks, and patients were reviewed at regular intervals of 3 months.

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RESULTS:

Variables		Number	Percentage (%)
Age	< 20 years	6	10
	20-40 years	42	70
	> 40 years	12	20
Sex	Male	34	56.67
	Female	26	43.33
Side of surgery	Left	32	53.33
	Right	28	46.67
Type of anesthesia	Local	48	80
	General	12	20
Total		**60**	

Table 1: Baseline characteristics of participants

Table 1 describes the baseline characteristics of the participants. A total of 60 patients were operated and following results were obtained. There were a total of 34 males and 26 females in the study. A total of 32 were left sided while 28 were right sided surgeries. The age group of people operated ranged from 6 to 65 years. The majority, 48 patients (80%) were done under local anaestheisa, while 12 (20%) of cases were done under General anaesthesia. Apart From endoscopic DCR, Septoplasty was necessary in 16 patients, while FESS was done in 6 patients.

Complaints	Group 1 (with stent) Number (%) (Total 30 patients)	Group 2 (without stent) Number (%) (Total 30 patients)
Ephiphora	30 (100%)	30 (100%)
Nasal obstruction	6 (20%)	10 (33.33%)
Mucocele	2 (6.6%)	1 (3.3%)
Visual disturbances	2 (606%)	0 (0%)
Allergic symptoms	6 (10%)	8 (13.3%)

Table 2: Presenting complaints of the participants

The most common complaints were Epiphora, Nasal obstruction, swelling at medial canthus (Mucocele), Nasal discharge, Visual disturbances, Allergic symptoms like sneezing, itching of eyes, nose, palate.

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Fig. 1 Fig. 2

Symptoms	Group 1 (with stent) Number (%)(Total 30)	Group 2 (without stent) Number (%) (Total 30)
Ephiphora	25 (83.33%)	27 (90%)
Nasal obstruction	6(100%)	8 (80%)
Mucocele	2 (100%)	1(100%)
Visual disturbances	2 (100%)	Nil
Allergic symptoms	0 (0%)	0 (0%)

Table 3: Relief of symptoms in the immediate postoperative period

In the immediate Post-operative period, all patients reported a subjective decrease in their symptom of epiphora. 52 of 60 patients had total relief of their symptom of epiphora (86.66%), the remaining experienced partial relief. 14 out of 16 patients who underwent Septoplasty along with Endo DCR were relieved of nasal obstruction. Mucocele disappeared in all patients in both groups. All the patients with visual disturbance were free from symptoms following the surgery. There was no relief of allergic symptoms following surgery.

Stent was removed after period of 6 weeks, and 4 cases of failure was noted among patients with stent and also 4 cases of failure among patients without stent. Causes of failure were evaluated and all the four cases with stent had stenosed ostium one had synechiae along with narrowed ostium. Among the 4 cases of failure without stent all the 4 had granuloma formation.

1 patient had stenosed ostium along with granuloma. 1 patient had synechiaa along with granuloma formation.

Fig. 3: Post-operative opening of lacrimal sac

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DISCUSSION: The majority, 56.67% of our patients were males while 43.33% of patients were females giving us a male to female ratio of 1.3:1. This is in contrast to study done by S Singhal et al,[3] which showed 75.7% males and 25.3% females. Majority of the cases were left sided, this is consistent with that study done by Mohammed Naveed Ahmed et al[1] where the no of patients with left sided Dacryocystitis was more. Probable causes as listed in their study were difference in angulation between lacrimal sac and nasolacrimal duct. Age of the patient in our study ranged from 6 to 65 years with majority in middle age group between 20 to 40 years, this is consistent with findings of Dutton et al[4] that incidence of dacryocysittis decreases with extremities of age. Epiphora was present in almost all the patients and it is consistent with literature.[1]

Success rate after surgery was 83.33% in patients without stent and 90% in patients with stent. This is slightly consistent with study of mortimore et al[4] which showed a success rate of 87% without stent. Another study done by B. PITTORE et al,[5] shows a success rate of 93.7%. Granuloma formation was common among patients without stent, this is consistent with study done by Rajesh vishwakarma et al,[6] their study showed that Granulations, Adhesions and Stoma closure were common among patients in whom stent was not placed during surgery. Study done by Jonathan Liang et al,[7] demonstrates comparable outcomes in endoscopic DCR whether stents are used or not. In both groups we did not encounter any major complications, except recurrence of the symptom in 8 patients 4 in patients with stent and 4 in patients without stent. post-operative adhesions which were formed which were released post operatively.

CONCLUSION: Though studies have shown that stenting during Surgery decresases the chances of granuloma, our current study shows us that there might be better relief in symptoms in immediate post-operative period but there is no remarkable role of intraopearative placement of stent on final outcome of Surgery.

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Date of Submission: 19/09/2015.
Date of Peer Review: 20/09/2015.
Date of Acceptance: 22/09/2015.
Date of Publishing: 01/10/2015.