Research Article

Efficacy of anterior flap technique of dacryocystorhinostomy

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Abstract

Introduction: Dacryocystitis means inflammations of lacrimal sac and duct and occurs in acute or chronic form. The chronic dacryocystitis is more common. External dacryocystorhinostomy (DCR) remains the gold standard surgical treatment for epiphora due to lacrimal passage obstruction beyond common canaliculus for more than hundreds of years. **Aims and Objective:** To study the efficacy of anterior flap technique of dacryocystorhinostomy used in the management of chronic dacryocystitis. **Materials and Method:** In the present study total 100 patients of chronic dacryocystitis were selected from those attending the ophthalmic OPD. All patients undergone modified dacryocystorhinostomy with anterior flap technique under local anesthesia. General anesthesia was used wherever required. Details of all the patients were recorded in proforma. The intra operative and post operative complications were also recorded. Patients were 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 6 months for recurrence of symptoms. **Results:** Majority of the patients were in the age group of 21 to 40 years. It was also seen that female (79%) were affected more commonly as compared to male. Majority of the cases were of chronic simple dacryocystitis (75) followed by chronic dacryocystitis with mucocele (15). Intra-operative complications found in this study were excessive bleeding in two cases and opening of anterior ethamoidal air cell in 1 case only. Out of the total 75 cases of chronic simple dacryocystitis, canalicular stricture was noted in two cases, infection in one case and unsightly scar in one case. The overall success rate of the procedure was 96% in the present study. **Conclusion:** Thus we conclude that Dacryocystorhinostomy with the anterior flap method is a simple and safe procedure to perform, with less complication rate and high success rate of 96%. And it can be performed in all types of chronic dacryocystitis cases.
Keywords: Dacryocystorhinostomy, success rate, anterior flap technique.

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INTRODUCTION

Dacryocystitis means inflammations of lacrimal sac and duct and occurs in acute or chronic form. The chronic dacryocystitis is more common. It usually occurs because of inadequately treated cases of acute dacryocystitis or because of less virulent organisms. Bacteriologically common organisms found are staphylococci, pneumococci, streptococci etc. out of which pneumococcus is very common. External dacryocystorhinostomy (DCR) remains the gold standard surgical treatment for epiphora due to lacrimal passage obstruction beyond common canaliculus for more than hundreds of years[1]. External DCR was first described by Toti (1904)[2]. Since then DCR has been modified as per the need to prevent failure, relieve patient's symptoms and make the surgery simpler. The conventional external DCR remains the surgical treatment of choice to relieve obstruction beyond common canaliculus, because it is easy to master with a short learning curve and does not require any special setup[3,4,5] The basic principle in surgery is making a new drainage channel from conjuctival sac in to the nasal cavity, or if it is not

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possible at all removal of sac. The conventional and worldwide accepted method of dacryocystorhinostomy is the making flaps, anterior and posterior in nasal mucosa as well as sac and suturing them.[6] The present study deals with new methods called as "modified dacryocystorhinostomy with anterior flap technique". This method substitute the preparation and suturing of mucosal flaps. As the nasal mocosa is removed totally along with bone while doing ostium, medial wall of sac is cut into anterior and posterior flaps. Posterior flap is cut and anterior lacrimal crest. Lastly orbiular muscle and skin sutured. This study further needs evaluation. During selection of cases, on pressure over sac area, if regurgitation through either punctum is present were selected. This is further confirmed by sac syringing and by DCG in selective cases. Nasal examination was done to reveal any pathology. Dacryocystorhinostomy operations with above procedure were done. The patients were followed with repeated sac syringing for seeing patency. In unsuccessful cases of failure was tried to be established.

AIMS AND OBJECTIVE

To study the efficacy of anterior flap technique of dacryocystorhinostomy used in the management of chronic dacryocystis.

MATERIALS AND METHOD

The present study was carried out in the department of ophthalmology of Government Medical College, Aurangabad. The patients were selected from those attending the ophthalmic Out Patient Department. Patients irrespective of age and sex and different socio-economic status who were complaining of watering were investigated for the evidence of chronic dacryocystis. Following selection criteria was used to select the study subjects.

1. There was no canalicular block.
2. There was no problem related to ear, nose and throat.
3. Cases with functional block were also included.
4. Bleeding and clotting time were within normal limits.
5. Patients having diabetes excluded and with hypertension were taken for surgery after control of Blood Pressure.

Informed written consent was taken from all the enrolled patients. Detail history regarding the current illness and the past illness was recorded on aprestructured proforma. Complete local and systematic examination was done in all patients. The diagnosis of chronic dacryocystitis was established only after positive regurgitation test, sac syringing with saline. Dacryocystography was done in some cases whenever required. The patients were examined for the evidence of local conditions like trachoma, evidence of lacrimal fistula, mucocele etc. If there was an act exacerbation on chronic the acute attack was firstly treated with suitable antibiotics and after control of the condition the patient was treated for chronic dacryocystitis.

OPERATIVE TECHNIQUE

Each patient was given injection for twin (pentazocine) 30 mg + phenargan 25mg and atropine 0.6mg.in half before operation as preoperative medicine. (Dose was adjusted according to age group). Surface anesthesia of conjunctival sac was achieved with 4% lignocaine containing adrenaline 1:1000. Nasal mucosa was anaesthetized with a solution of 4% lignocaine and adrenaline 1:1000. The nasal packing on the side to be operated was done with ribbon gauze soaked in the above solution. Nasal packing was done with the help of nasal packing forceps and nasal speculum. General anesthesia was given to the children up to age of 16 years. Nasal packing was done with Xylocaine 4% and adrenaline 1:1000. 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 6 months for recurrence of symptoms.

RESULTS

Table 1: Distribution of patients according to various characteristics

Variable		No. of patients
Age group in years	≤ 10 years	3
	11 – 20 years	3
	21 – 30 years	25
	31 – 40 years	32
	41 – 50 years	12
	51 – 60 years	15
	61 – 70 years	10
Sex	Male	21
	Female	79
Type of chronic dacryocystitis	Chronic simple dacryocystitis	75
	Chronic dacryocystitis with mucocele	15
	Chronic dacryocystitis with fistula	8
	Atomic sac	2
intra-operative complications	Excessive bleeding during surgery	2
	Opening of anterior ethamoidale	1

It was observed that majority of the patients were in the age group of 21 to 40 years. It was also seen that female (79%) were affected more commonly as compared to male. Majority of the cases were of chronic simple dacryocystitis (75) followed by chronic dacryocystitis with mucocele (15). Intra-operative complications found in this study were excessive bleeding in two cases and opening of anterior ethamoidal air cell in 1 case only.

Table 2: Distribution pf patients according to post operative complication

Types of dacryocytitis	Cases operated	Canalicular block	infection	Unsightly scar
Chronic simple dacryocystitis	75	2	1	1
Chronic simple dacryocystitis +mucocele	15	-	-	-
Chronic simple dacryocystitis+ fisula	8	-	-	1
Chronic simple dacryocystitis+ atonic sac.	2	-	-	-

Out of the total 75 cases of chronic simple dacryocystitis, canalicular stricture was noted in two cases, infection in one case and unsightly scar in one case. No complication was noted in cases of chronic simple dacryocystitis with mucocele or atonic sac.

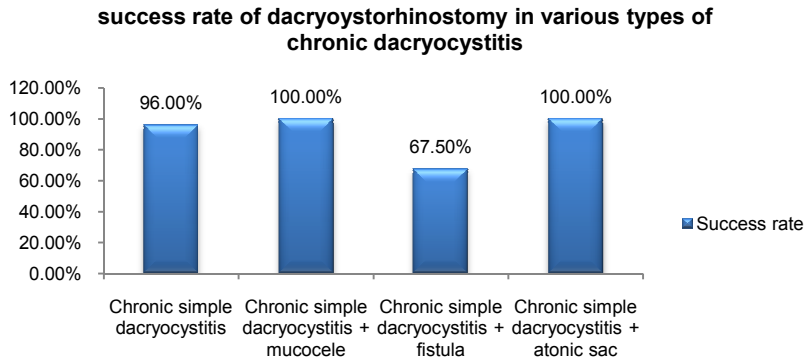
Table 3: Analysis of failure of dacryoystorhinostomy cases

Analysis of failure		No. of cases
Site of obstruction	Canalicular	2
	Ostium	2
Associated findings	Watering	2
	Mucopurulent discharge	2
	acute dacryocystitis	0
Operative findings	Resurgery	2
	sac was not opened	1
	Ostium was insufficiently made	1

It was observed that out of 100 cases operated, 4 cases developed blockage and resurgery was done in 2 cases. Operative findings showed that there was insufficient ostium made in one case which was blocked with fibrosed tissue and in other case sac was not opened as sac walls were having adhesion. Two cases showed blocks due to canalicular stricture post-operatively which was relived with repeated probing.

Table 4: Success rate of dacryoystorhinostomy in various types of chronic dacryocystitis

Types of dacryocystitis	No. of cases operated	No. of cases successful	Success rate
Chronic simple dacryocystitis	75	72	96.00%
Chronic simple dacryocystitis + mucocele	15	15	100.00%
Chronic simple dacryocystitis + fistula	8	7	67.50%
Chronic simple dacryocystitis + atonic sac	2	2	100.00%
Total	**100**	**96**	**96.00%**



The overall success rate of the procedure was 96% in the present study. Least success rate was observed in chronic simple dacryocystitis with fistula patients.

DISCUSSION

In the present study total 100 patients of various types of chronic dacryocystitis were selected from the out Patient Department of Ophthalmology of Government Medial College and Hospital, Aurangabad. The objective of the study was to find the efficacy of modified dacryocystorhinostomy with anterior flap technique. All the patients were operated under local anesthesia and under general anesthesia wherever required. It is seen that out of 100 cases studied the youngest patients operated was 7 years and the oldest was 70 years old. The majority of patient belonged to fourth decade (32%) followed by third decade (25%) and fifth decade (15%). Our observation was in agreement with observation of other workers. Dayal et al[7] stated that third to fourth decade was commonest for dacryocystitis. Pandey et al[8] got the maximum number of cases in between 26 to 40 years of age. In the present study it was observed that there was marked tendency for dacryocystitis in females. Out of 100 cases, 79 were females whereas only 21 were males. Similar finding were also reported by Dayal et al[7] and Pandey et al[8], who observed 80% and 82.5% females with chronic dacryocystitis respectively. There were 75 cases of chronic simple dacryocystitis. Fifteen cases had chronic dacryocystitis with mucocele, eight had chronic dacryocystitis with fistula and two had atonic sac. From the above findings it can be concluded that chronic simple dacryocystitis is much more common. Pandey et al[8] studied 35 cases of dacryocystitis which shows that out of that 85% were chronic dacryocystitis while other cases with mucocele and fistula were very few.

The complication rate in the present study was very less. Intra-operative complications found in the present study were excessive bleeding in two cases and opening of anterior ethamoidal air cell in one case only. Post-operative complication found were blockage and recurrence of symptoms due to canalicular stricture in two cases, while post operative inflection in one case and unsightly scar in two cases (Bow string contraction). It is said that this is due to site of incision and cutting of medial palpabralligment. Majority of the complications were observed in chronic simple dacryocystitis. Out of total 100 cases operated, 4 cases developed blockage. Resurgery was done in two cases. Operative findings showed that there was insufficient ostium made in one case which was blocked with fibrosed tissue and in other case sac was not opened as sac walls were having adhesion. Two cases showed blocks due to canalicular stricture post-operatively which was relived with repeated probing. The results of this anterior flap technique were most satisfactory in cases with mucocele and in cases with atonic sac. Out of 15 cases of mucocele operated, all were successful showing 100% success rate. Similarly 2 cases of atonic sac operated showed 100% success rate as both were successful. Cases with chronic simple dacryocystitis showed 96% success rate and cases with chronic dacryocystitis with fistula showed 87.5% success rate. The greater success rate was seen in cases with mucocele and atonic sac because of ease in finding the sac. Burn R. A. et al [9] has uniform results irrespective of condition of sac, while Trivedi et al[10] got maximum success in cases with mucocele. The overall success rate in the present study was 96%. Similar findings were also observed by Stallard et al[11] (90%). The criteria for claiming success rate was relief of epiphora and regurgitation. The next criteria were the simplicity of the procedure to be employed so that it is safe even in the hands of juniors. The average time required for this anterior flap technique was up to 45 minutes. It was certainly less the conventional flap dacryocystorhinostomy.

CONCLUSION

Thus we conclude that Dacryocystorhinostomy with the anterior flap method is a simple and safe procedure to perform, with less complication rate and high success rate

of 96%. And it can be performed in all types of chronic dacryocystis cases.

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