Medical Journal of the
Islamic Republic of Iran

Volume 2
Number 4
Zemestan 1367
Jamadiolawwal 1408

A SURVEY OF 200 DCR OPERATIONS

H. RAZMJOO, M.D.

From the Department of Ophthalmology, Faculty of Medicine, Isfahan University of Medical Sciences, Isfahan, Islamic Republic of Iran.

ABSTRACT

In a prospective survey, 200 cases of operated chronic dacryocystitis were divided into three groups according to the kind of operation, and the respective results are as follows:

Group I includes 100 cases in whom the lacrimal bone was removed (8mm× 8mm) and a 6mm diameter catheter was used (as a duct between the lacrimal sac and nasal cavity). The recurrence rate within one year was 24%.

Group II consists of 50 patients in whom a hole about 17mm × 17mm was made (in the lacrimal sac area at the orbit), an 8mm diameter catheter was installed and anterior mucosal flaps were repaired. This technique led to 95% recovery.

Group III consists of 50 cases who underwent the same technique as group II without using the catheter and by repairing both anterior and posterior mucosal flaps. The result was 98% successful. In conclusion, the following are suggested as the major factors determining successfulness of DCR operations.

1. Removing the bone around the lacrimal sac about 17 × 17mm,
2. Releasing the lacrimal sac from the adjacent bone,
3. Making an incision at the third inferior part of the lacrimal sac,
4. Identifying the lacrimal sac exactly, and
5. Making free direct communication between the nasal cavity and the lacrimal sac.

MJIRI, Vol.2, No.4, 265-267,

INTRODUCTION

As it is well known, chronic dacryocystitis occurs secondary to obstruction of the nasolacrimal canal and is common in childhood and middle age adults. The important signs of this disease are tearing (epiphora) and regurgitation of mucus or pus from the punctum by pressure on the lacrimal sac. In some cases, cellulitis is also observed. Dacryocystitis is one of the common causes of referring to ophthalmic centers and eye clinics.

PATIENTS AND METHODS

In this prospective evaluation, 200 patients were operated on, 127 of whom were female and 73 were

Table I. Age distribution of the patients.

AGE GROUP	NUMBER OF PATIENTS
Under one year with skin fistula	2
3-9	14
10-19	10
20-29	71
30-39	32
40-49	39
50-59	24
60-69	8

Table II. Classification of patients, procedure performed, and results.

GROUP	NO	PROCEDURE				SUCCESS RATE
		OPENING SIZE	TUBE INSTALLATION	ANTERIOR MUCOSAL FLAP SUTURING	POSTERIOR MUCOSAL FLAP SUTURING	
I	100	8×8 mm	all had tube installation	No	NO	76%
II	50	17×17 mm	" " "	YES	NO	95%
III	50	17×17 mm	No tube installation	YES	YES	98%

male (F/M ratio = 1.73).

The patients were between 1 to 70 years old, while the majority were in the third decade of life (Table I). They were under direct observation for 1 to 7 years postoperatively.

Underlying causes:

The causes of this disease can be summarized as follows:

1. 173 cases had unknown etiology.
2. Nine cases had occurred after trauma.
3. In 18 cases, the causes of disease was nasal pathology as follows:
   a) Squamous cell carcinoma in a 35 year old female,
   b) Polyps in 11 cases,
   c) Septal deviation in 6 cases.

Table II shows the classification of patients, respective operational techniques, and results.

It should be mentioned that from 200 operated patients, the right eye was involved in 110 cases and the left eye was involved in 90 cases.

Procedure:

1. All patients were treated by probing and local and systemic antibiotics two to three times before operation.
2. All children and those adults who preferred systemic anesthesia were given an injection of 3-5cc xylocaine with adrenaline at the site of operation to prevent hemorrhage.
3. The nasal cavity in the operation site was packed by packs soaked in 4% xylocaine and adrenaline in most patients.
4. In all cases, an incision about 3cm long was made, 2mm below the middle canthus, and was continued around the orbital rim.
5. After retracting the muscles, the periosteum will become apparent and is retracted as well. The lacrimal sac which is located adjacent to and below the middle canthus is identified and released from the orbit.
6. A 17mm diameter area of bone around the sac is removed in group II and III, while in group I, the bone and nasal mucosa were removed about 8mm × 8mm.
7. An incision is made in the third inferior part of the medial wall of the sac and nasal mucosa.
8. The posterior mucosal flaps of lacrimal sac and nasal mucosa were sutured in some of the patients, and anterior mucosal flaps repaired by two (5-0) catgut chromic sutures in all patients. Of course, suturing the posterior flaps did not have any effect in the outcome.
9. The operation site was washed with normal saline.
10. Skin was sutured with 6-0 silk, continuously or separately.
11. Operation time was between 30-45 minutes.

RESULTS

To get the best results, the following suggestions are made.

a) Removing about 17 × 17mm of bone in such a way that the adjacent bone is not abraided, while nothing is left between the lacrimal sac and nasal cavity; that is, direct communication between the nasal cavity and sac is established.

b) The place of incision of the sac is important and should be made in the third inferior part.

c) Identification of the sac is of considerable importance.

d) Careful attention should be paid to the nasal mucosa in order to prevent damage as far as possible.

Thus the best results are obtained when enough bone is removed (around 17 × 17mm) without damaging the sac and the sac wall is held in direct contact with the nasal cavity.

The recurrence rate in group I is 24% after 2-3 months, while in groups II and III, the recurrence rate is 2-5%.

DISCUSSION

Generally speaking, the problem of chronic dac-

ryocystitis is approached in children differently from adults. In children, treatment begins with probing and if it is done one or two times using correct technique, the disease will be treated completely in most patients and surgery is not needed.

In adults, the patency of the duct will rarely be established by probing, and DCR operation should be done; however, it is better to attempt probing two or three times in order to utilize the chance of probable permanent recovery by this noninvasive procedure.

Generally, the most important cause of chronic dacryocystitis is obstruction of the nasolacrimal canal. As presented in statistics, this disease is very common in women during the third decade.

The etiology of dacryocystitis is as follows:

1. Unknown origin 80%,
2. Trauma,
3. Infections, especially mycogenic (*Candida albicans, Actinomyces*) and other pathologic agents e.g. *Staphylococcus, S.pneumoniae,*
4. Tumors (squamous cell carcinoma),
5. Polyps, septal deviation, allergic problems.

As it is shown in this survey, DCR operation in adults is successful in 98% of cases if the above suggestions are observed in the operation.

REFERENCES

1- Cassady JV: Developmental anatomy of nasolacrimal ducts. Arch Ophthalmol 47:141, 1952.

2- Duke-Elder: System of Ophthalmology, Vol. XIII, The Ocular Adenexa.

3- Jones LT, Linn M: Rate of Lacrimal Exretism. Am J Ophthalmol 65:76, 1978.

4- Korchmaros I: Spontaneous Opening rate of Congenitally blocked nasolacrimal ducts. In: Yamaguechi, M. (ed) Recent Advances on the Lacrimal System. Tokyo, Asahi, 30-35, 1978.

5- Milder B, Weil B A : The Lacrimal System, 1983.

6- Putterman AM, Epstein G: Combined Jones Tubecanalicular Intubation and Conjunctival Dacryocystorrhinostomy, Am J Ophthalmol 91: 513-521, 1981.

7- Riddle PJ: Silica Granuloma of Eyelid and Ocular Adnexa. Arch Ophthalmol 99: 683-687, 1981.