ISSN NO. 2320-5407

Journal homepage: http://www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH

RESEARCH ARTICLE

Scarless Transconjunctival dacryocystorhinostomy with anterior flaps in management of acquired nasolacrimal duct obstruction.

Mahmoud Ahmed El-samkary MD
Ophthalmology department- Ain Shams University, Cairo, Egypt.

Manuscript Info

Manuscript History:

Received: 12 February 2015
Final Accepted: 22 March 2015
Published Online: April 2015

Key words:

Scarless transconjunctival dacrocystorhinostomy

Corresponding Author

Azza A. Y. Megahed

Abstract

Purpose: assessment of the success's rate in management of acquired nasolacrimal duct obstruction (ANLDO) without skin incision through the conjunctiva with anterior flap formation.

Methods and Materials: prospective non randomized study of 41 eyes of 35 patients complaining of acquired nasolacrimal duct obstruction; in period of March 2013 to March 2014; diagnosed preoperative by; dye disappearance test (DDT) and irrigation of nasolacrimal duct. Excluded patients with punctual stenosis, canalicular obstruction and recurrent nasolacrimal duct obstruction .Operative; all patients had lacrimal sac connected to the nose through inferomedial conjunctival wound in lower eye lid without skin scar formation. Postoperative; follow up after one day, 1 weak ,3 months,6 months then removal of silicon tube and assisted by subjective improvement of the patient ,DDT and at 9 months assisted by DDT ,and irrigation of nasolacrimal duct .

Statistical analysis used: Based on IBM SPSS Statistics (version 22, SPSS, Inc.).

Results: In 35 eyes of patients (85.4%), after complete follow up, the operation had been done successfully with complete absence of epiphera, during following up 6 eyes of patients (14.6%) had granuloma formation on the conjunctiva wound produced more epiphora. 6 eyes of patients (14.6%) showed; recurrent of epiphora. they are treated by external dacryocystorhinostomy and the symptoms are improved.

Discussion: the success rate of transconjunctival technique of dacrocystorhinostomy in management of ANLDO is considered high 85.4%, in comparable to external and endoscopic DCR but without facial scar and without laser or endoscope assessment

INTRODUCTION

DCR is an operation whereby the lacrimal sac is drained into the nose, and the surgical goal is to make an epithelium-lined tract between the sac and the nasal mucosa (Yanoff et al, 2004). It was first described via an external approach by Toti in 1904 (Toti , 1904) and was subsequently modified by addition of suturing the nasal and lacrimal mucosal flaps in order to form an epithelium –lined fistula (Dupuy-Dutemps et al ,1921) . Several studies have estimated that the success rate is between 85% and 95% (Tarbet and Custer, 1995). First endonasal approach was described by Caldwell in 1893 (Caldwell, 1893) and after following the introduction of nasal endoscope (Stammberger, 1986) the interest in endonasal DCR is increased. While the procedure, in its present form, was introduced by McDonough and Meiring (McDonough and Meiring, 1989) and several reports have estimated that the success rate is between 63%to 90% (Sham and Van Hasselt, 2000) A number of modifications

using laser have also been described as useful tool in endoscopic DCR. All these techniques have their advantages and disadvantages .In this study we use technique which our prospective would give better results with least number of complications for the patients.

Subjects and Methods

This prospective, non-randomized, and non-comparative study of 41eyes of 35 patients, complaining of epiphera, watery discharge and mass behind medial canthal ligament (mucocele) and diagnosed with dye disappearing test (DDT), irrigation of nasolacrimal duct .Exclusion criteria including patients with punctual stenosis, canalicular obstruction and recurrent nasolacrimal duct obstruction.

Operative techniques: All operations were done under general anesthesia, local hemostatic anesthesia, Mepivacaine HCL2% plus Levonordervin 1/20000, is infiltered in conjunctiva incision and in medial canthal area. A nasal pack moistened with Oxymetazoline Hydrochloride 0.05% Plus Dimetindeni maleas 0.25mg and Phenylephrinum 2.5mg to produce nasal mucosal vasoconstriction. An inferiomedial transconjunctiva incision 2-3cm in length and 4mm below caruncle was done associated with retraction of lower lid by suture retractors and dissection up to reach to anterior lacrimal crest. The periosteum is dissected, removal of nasal pack, and cutting of lacrimal bone, frontal process of maxilla by bone nibbling. Lacrimal sac is identified by a Bowman probe, sac and nasal mucosa were incised in u -shape by11- blade with removal of posterior flap to prevent more fibrosis with tissue. The fistula is roofed by suturing the anterior mucosal flap with the nasal mucosa by 6 \ 0 polyglactin sutures , silicon tube inserted from the punctum and conjunctiva wound was approximated without suture.

Patients were followed up one day, one weak, 3 months up to 6 months by DDT and subjective symptoms .At 6th month silicon tube is removed and followed 3 months of observation by DDT and irrigation of new drainage ostium .The success rate depends on patency of new drainage ostium and complete absent of epiphora.

Results

Based on IBM SPSS Statistics (version 22, SPSS, Inc.). Mean age for the patients 43.15 (SD ± 8.996) [table: 1]

Statically, female patients had more incidence than male patients as female 23 patients (56.1 %) and male 8 patients (43.9 %) and this matches with physiological and hormonal changes in females. Insignificant, Patients with unilateral eye are 33 patients (80.5 %) and bilateral eyes 8 patients (19.5 %) , and all patients had anterior flap .DDT are negative in 35 patients (85.4%) and positive in 6 patients (14.6%) and patency of drainage system the same results as DDT. Difficulty during surgery and complications are shown in [table: 2] and [table: 3]

Bleeding and fat prolapse are common difficulty during surgery, control of bleeding by good hemostasis, good illumination had managed this difficulties, 24 patients of total 41 had no difficulty with good management to ANLDO. Ecchymosis are very common complications and were treated by cold fomentation for 24 hours then hot fomentation for one weak associated with medical treatment .Granuloma is seen in 6 patients in the site of conjunctival wound , 2 patients of them improved with local steroid and other patients with granuloma are excised under local anesthesia .

The incidence of recurrent are shown in [table: 4]

Transconjunctival DCR was completed successfully in 35 patients of total 41 patients complaining of ANLDO, 6 eyes of patients (14.6%) showed recurrent of epiphora after follow up and the patients treated by external DCR with improvement of symptoms.

Tablets

ᵏDescriptive Statistics (table 1)

	N	Minimum	Maximum	Mean	Std. Deviation
age	41	25	57	43.15	8.996

Difficulty (table 2)	Frequency	Percent
atrophic mucosa	3	7.3
bleeding	7	17.1
fat prolapse	6	14.6
mucosa not well exposed	1	2.4
No difficulty	24	58.5
Total	41	100.0

† Difficulty during surgery [table: 2]

Complication (table 3)	Frequency	Percent
ecchymosis	13	31.7
granuloma	6	14.6
lower lid laceration	3	7.3
No complications	19	46.3
Total	41	100.0

‡ complications are shown in [table: 3]

Recurrent (table 4)	Frequency	Percent
Non recurrent	35	85.4
recurrent	6	14.6
Total	41	100.0

§Incidence of recurrent are shown in [table: 4]

Discussion

Transconjunctival DCR_s are technique through the conjunctival incision whereas the instruments used as same as in external DCR but the only difference is using retracted sutures to lower lid. In transconjunctval DCR, the anterior flaps were done by suturing the anterior flap of sac and nasal mucosa for smooth tract. Although Becker(Becker , 1988) reported that the success rate 92.5% in patient underwent external DCR without flaps, whereas in our study the success rate was 85.4 % underwent anterior flaps, while Kaynak and Yilmaz reported that the success rate 76% with formations of anterior and posterior flaps (Kaynak and Yilmaz ,2011).

The total number of patients in our study are 41 eyes while in the Kaynak and Yilmaz (Kaynak and Yilmaz ,2011) total number of patients are 25 eyes and this also more than the total number of patients that reported in Kaynak et al (Kaynak et al 2014) of 33 eyes. Kaynak (Kaynak etal,2014) reported that patient resolved from epiphora 92.7% by the same technique, and this pointed for steep learning curve especially for familial with the surgical anatomy of the medial canthal area and lacrimal fossa.

In our study, fat prolapse 14.6% are the common difficulty during surgery as the fat prolapsed to the lacrimal fossa area and impaired the visualization and the manipulation of lacrimal bone fossa which this increases the failure rate as Goldberg et al (Goldberg et al, 2008) but we managed this by the cauterization of the fat without pull or rip as rough manipulation can lead to retroseptal hemorrhage.

Transconjunctival DCR_s were different from transcaruncular DCR_s as in Adenis and Rebert (Adenis and Rebert, 2003) they used the retrocaruncular approach, which is near to eye ball, and the incision healed with morel's an un-sighted conjunctival scar near caruncle, while in our study the incision healed with negligible scar .If the granuloma formation is occurred it healed and hidden completely by lower lid. Both techniques are similar in avoiding the facial scar, minimize the trauma to medial canthal area and allowing formations of drainage fistula.

The lower lid of 3 patients are lacerated by the force traction of suture, and this was healed completely without scar. But if we avoid the force traction we can avoid this complications.

In transconjunctival DCR_s, patients can quicker return to work, no facial scar, no suture removal, as the same advantages as endoscopic DCR but with higher success rate in transconjunctival DCR with less complications (Yung and Hardman-Lea, 2002) .

Conclusion

The transconjunctiva DCR is a useful new technique in management of ANLDO with high success rate in comparable with external and endoscopic DCR, but with less complications and without endoscope or laser assistance.

References

1- Adenis JP, Robert PY. Retrocaruncular approach to the medial orbit for dacryocystorhinostomy. Graefes Arch Clin Exp Ophthalmol 2003; 241:725-9.

2- Becker BB. Dacryocystorhinostomy without flaps. Ophthalmic Surg 1988; 19:419-27

3- Caldwell GW. Two new operations for obstruction of the nasal duct with preservation of the canaliculi, and an incidental description of a new lachrymal probe. NY Med J 1893; 57-581.

4- Dupuy-Dutemps L, Bourguet J. Procedeplastique de dacrycysto-rhinostomia et ses resultants. Ann Oculist 1921; 158:241-261.

5- Goldberg RA, Samimi DB, Tsirabs A. The hydrogel lacrimal stent for dacryocystorhinostomy : Preliminary experience. Ophthal Plast Reconstr Surg 2008; 24:85-9.

6- Kaynak HP, Oztuker C, Omer F , Karabulut G .Transconjunctival dacryocystorhinostomy : Long term results. Saudi J Ophthalmol 2014;28:61-5.

7- Kaynak HP, Yilmaz OF. Transconjunctival dacryocystorhinostomy: Scarless surgery without endoscopic and laser assistance. Ophthal Plast Reconstr Surg 2011; 27:206-210.

8- McDonogh M, Meiring JH. Endoscopic trannasal dacryocystorhinostomy.JLaryngol Otal 1989; 103:585-7.

9- Sham CL, Van Hasselt CA. Endoscopic terminal dacrocystorhinostomy. Laryngoscope .2000; 110(6):1045-1049.

10-. Stammberger H. Endoscopic endonasal surgery: concepts in treatment of recurring rhinosinusitis. Part Ⅱ .Surgical technique .Otolaryngol Head Neck Surg 1986; 94(2):147-156.

11- Tarbet KJ, Custer PL. External dacrocystorhinostomy: surgical success, patient satisfaction and economic cost. Ophthalmology 1995; 102(7):1065-1070.

12- Toti A. Nuovometodoconservatore di cure radicle dellesuppurazonicroniche delsaccolacrimale (Dacriocistorinostomia). Clin Mod Firenze1904; 10:385-387.

13- Yanoff M, Jeffery J, Jay S. The Lacrimal Drainage System. Ophthalmology 2004; 2: 98-761.

14-Yung MW, Hardman-Lea S. Analysis of the results of surgical Endoscopic dacryocystorhinostomy: effect of the level of obstruction. Br J Ophthalmol 2002; 86:792– 4.