



IJCRR  
Section: Healthcare  
Sci. Journal  
Impact Factor  
4.016  
ICV: 71.54

# Clinical Outcome and Complications of Therapeutic Nasolacrimal Duct Probing in Adult Cases of Chronic Dacryocystitis

**Garima Agrawal**

Assistant Professor in Ophthalmology, Institution: M&J Institute of Ophthalmology, BJ medical College, Civil Hospital, Asarwa, 380016.

## ABSTRACT

**Introduction:** Chronic dacryocystitis is a common presentation in our out patient department. We explored the possibility of an effective and minimally invasive procedure for the treatment of this disease. The underlying pathophysiology of chronic dacryocystitis is nasolacrimal duct obstruction. We designed a study to evaluate the clinical outcome and complications of nasolacrimal duct probing as a therapeutic procedure for the treatment of chronic dacryocystitis in adults. Nasolacrimal duct probing is effective in the treatment of congenital nasolacrimal duct obstruction. We report the results of nasolacrimal duct probing in adults.

**Aim:** Clinical outcome and complications of nasolacrimal duct probing in adult cases of chronic dacryocystitis seen at a regional Institute of Ophthalmology.

**Methodology:** 100 consecutive cases of chronic dacryocystitis fitting into the study criteria were enrolled. The patients were subjected to a thorough preoperative examination and subsequent nasolacrimal duct probing under standard conditions. The patients were subjected to a strict post operative regime and were followed up for three months.

**Result:** Naso lacrimal duct probing was successful (both subjectively and objectively) in 98 out of 100 patients with chronic dacryocystitis.

**Discussion:** We report successful treatment of adult cases of chronic dacryocystitis by nasolacrimal duct probing.

**Conclusion:** We conclude that adults with chronic dacryocystitis can be managed successfully with nasolacrimal duct probing.

**Key Words:** Therapeutic nasolacrimal duct probing, Chronic dacryocystitis in adults

## INTRODUCTION

Chronic dacryocystitis and acquired nasolacrimal duct obstruction are a very common presentation in our Out Patient Department in the adult age group. The standard treatment of chronic dacryocystitis in ages above 18 years is a dacryocystorhinostomy either external or endoscopic<sup>1</sup>. The procedure is a major operation with a post operative facial scar. The success rates are encouraging though recurrences are not uncommon. The repeat procedure is difficult with varying results. The pathophysiology of chronic dacryocystitis is an obstruction of the nasolacrimal duct. Probing of the nasolacrimal duct with a lacrimal probe restores patency of the nasolacrimal duct. This study was designed to observe the clinical outcome and complications of nasolacrimal duct probing in adult cases of chronic dacryocystitis.

## AIM

Clinical outcome and complications of nasolacrimal duct probing in adult cases of chronic dacryocystitis seen at a regional Institute of Ophthalmology.

## METHODOLOGY

The study was carried out at our Regional Institute of Ophthalmology from November 2016 to April 2017. All patients of chronic dacryocystitis above 18 years of age were enrolled. Patients with acute dacryocystitis and /or abscess were excluded from the study. Patients with active infection as evidenced by purulent regurgitation on pressure over the lacrimal sac or syringing were started on topical antibiotics (moxifloxacin 0.5% four times a day after sac emptying).

### Corresponding Author:

**Dr. Garima Agrawal**, Bunglow No. 11, Bopal 444, 200 feet S.P. Ring Road, Next to sun City, Bopal, Ahmedabad, 380058.  
Email: garima.g.agrawal@gmail.com, garimagr@yahoo.co.in

**ISSN:** 2231-2196 (Print)

**ISSN:** 0975-5241 (Online)

**DOI:** 10.7324/IJCRR.2017.9186

**Received:** 03.07.2017

**Revised:** 24.07.2017

**Accepted:** 18.08.2017

Once the regurgitant from the sac on pressure over the lacrimal sac or syringing was non-purulent, mucoid or watery then only the patient was included in the study. The diagnostic criteria for chronic dacryocystitis without active infection included a history of constant watering from the eye, regurgitation of nonpurulent, mucoid or watery fluid on pressure over the lacrimal sac, absence of tenderness, a hard stop on probing and a non patent nasolacrimal duct on lacrimal syringing. The patients were subjected to a thorough clinical work up including blood pressure measurement. Blood and urine investigations including random blood sugar, bleeding time and clotting time were carried out. Uncontrolled diabetes and hypertension were controlled by medication before enrolment. A plain X ray of paranasal sinuses and a thorough nasal examination in collaboration with ENT consultant were done to rule out nasal causes of obstruction at the meatal opening of the nasolacrimal duct.

Written consent of the procedure was taken from all patients. The standard preoperative workup was done as for all surgeries. A course of oral Amoxicillin and Cloxacillin as per dose and topical moxifloxacin eye drops four times a day after sac emptying were prescribed for one week prior to the procedure. In the operation theatre painting and draping of the eye were done. The lacrimal sac was then emptied completely by pressing against the bony lacrimal fossa. After cleaning the lower punctum was dilated with a punctum dilator. A lacrimal probe was passed first vertically into the lower punctum, the lower lid was then pulled laterally and the probe was subsequently made horizontal. Once a hard stop was felt the probe was made vertical and directed into the nasolacrimal duct. The direction of the probe as documented is downwards, backwards and laterally. Gentle force is used to break any fibrous bands/ adhesions/ membranes at any point in the nasolacrimal duct including its lower end. The probe is allowed to remain in the nasolacrimal duct for one minute and then it is removed. The whole procedure is repeated three times from the lower punctum and once from the upper punctum.

Lacrimal syringing is done to confirm patency. The patient is asked to report feeling of water in nose or throat. Alternatively we also watched for deglutition at the time of lacrimal syringing. Nasal bleeding occurred in many patients at the time of the procedure or afterwards which was controlled by asking the patients to pinch their nose for two minutes post procedure.

The patients were followed on day one, one week, six weeks and three months. Postoperatively the patients were advised emptying of the lacrimal sac by pressing it against the bony lacrimal fossa. Thereafter the eye was to be cleaned with sterile wet cotton swab. One drop of moxifloxacin eye drop to be subsequently instilled in the lower conjunctival de sac. This post operative regime was to be followed four times per day for six weeks religiously.

The clinical outcome was determined by symptomatic relief of watering, no regurgitation on pressure over the lacrimal sac, patent syringing 6 weeks post procedure.

## RESULT

95 out of the 100 patients were observed to have a patent nasolacrimal duct six weeks post procedure. The five patients who did not have a patent nasolacrimal duct, three were observed to be non compliant of the postoperative regime. Once compliance was ensured there was a return of patency in four weeks. Two patients had pseudomonas isolated from the conjunctival de sac which responded to the sensitive antibiotic after culture sensitivity with return of patency in subsequent four weeks. The only complication observed included nasal bleeding which could be effectively controlled by pinching the nose two minutes post procedure.

## DISCUSSION

We report successful treatment of adult chronic dacryocystitis due to nasolacrimal duct obstruction by nasolacrimal duct probing.

LiH, HeZ have reported an article on treatment for chronic dacryocystitis by probing through nasolacrimal duct under endoscopy. They report successful treatment of 28 out of 30 eyes with chronic dacryocystitis by nasolacrimal duct probing under endoscopic /rhinoscope control. Two eyes were successful after a second surgery.<sup>2</sup>

Tsai C et al reported good long term results (overall patency rate of 94%) for probing with adjunctive topical Mitomycin C for cases of adult epiphora caused by obstruction of the nasolacrimal duct followed by repeat procedure if necessary.<sup>3</sup>

Perry J et al reported balloon dacryocystoplasty as a satisfactory primary treatment for adults with acquired nasolacrimal duct obstruction who exhibit no clinical signs of chronic infection.<sup>4</sup>

Lee JS et al reported successful (93.2% success rates) of polyurethane stenting without fluoroscopic guidance for primary management of nasolacrimal duct obstruction.<sup>5</sup>

## CONCLUSION

We conclude that adults with chronic dacryocystitis can be managed successfully with nasolacrimal duct probing. This is a simple and atraumatic procedure. We recommend an initial trial of nasolacrimal duct probing in all cases of chronic dacryocystitis without active infection as evidenced by a nonpurulent regurgitant from the lacrimal sac. The current standard of treatment of chronic dacryocystitis is a dacryo-

cystorhinostomy either external or endoscopic . Balloon dacryocystoplasty or stenting of the nasolacrimal duct are newer procedures for the treatment of acquired nasolacrimal duct obstruction in adults. Few studies have reported the efficacy of probing for the treatment of chronic dacryocystitis with nasolacrimal duct obstruction in adults. More long term and multicentre studies are needed to document the efficacy of nasolacrimal duct probing as a definitive procedure for the treatment of chronic dacryocystitis.

### **ACKNOWLEDGEMENT**

Authors acknowledge the immense help received from the scholars whose articles are cited and included in references of this manuscript. The authors are also grateful to authors/editors/publishers of all those articles journals and books from where the literature for this article has been reviewed and discussed.

**Ethical Clearance:** Taken

**Informed Consent:** Taken

**Source of funding :** None

**Conflict of Interest:** None

### **REFERENCES**

1. Hurwitz JJ. The lacrimal drainage system. In: Yanoff M, Duker JS, editors. *Ophthalmology*. 4th Ed. China: Elsevier Saunders; 2009. p 1346-1351.
2. Li H, He Z. Treatment for chronic dacryocystitis by probing through naso-lacrimal duct under endoscopy. *Lin Chuang Er Bi Yan Hou Ki Za Zhi* 1999;13(5):200-201.
3. Tsai C, Kau H, Kao S, Hsu W, Liu J et al. Efficacy of probing the nasolacrimal duct with adjunctive Mitomycin C for epiphora in adults. *Ophthalmology*. 2002 ; 109(1): 172-174.
4. Perry JD, Maus M, Nowinski TS, Penne RB. Balloon catheter dilation for treatment of adults with partial nasolacrimal duct obstruction : A preliminary report. *Am J Ophthalmol* 1998 ; 126(6) : 811-816.
5. Lee JS, Jung G, Oum BS, Lee SH, Roh HJ. Clinical efficacy of the polyurethane stent without fluoroscopic guidance in the treatment of nasolacrimal duct obstruction. *Ophthalmology*. 2000; 107(9): 1666-1667.