

Syringing and Probing Results for Congenital Nasolacrimal Duct Obstruction

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ABSTRACT

Objective: The study was conducted to study the results of syringing and probing technique for treatment of congenital nasolacrimal duct obstruction from the data collection, recorded at Eye Operation Theater and clinics for the patients treated by the said technique.

Study Design: Retrospective Cross-sectional study technique was used.

Period: From January 2003 to December 2005.

Subjects and Methods: In the study 90 respondents

were included with age from six months to five years of both sexes, observed at DHQ Hospital Faisalabad and authors clinics and the data were analyzed by using SPSS package, version 12.

Results: Almost 93% of the cases were found to be symptom free at the end of follow up, showing the technique used was one of the best techniques for the said clinical problem.

Keywords: syringing & probing, congenital, nasolacrimal duct (NLD), obstruction.

INTRODUCTION

Nasolacrimal duct is the anatomical passage for drainage of physiological lacrimal secretions from eye to nasal cavity, for which we are least aware of in routine. The process of its canalization is complete by the time of birth or just after it [1]. However 20-30% of newborns have obstruction of Nasolacrimal duct [2,3]. Out of these spontaneous resolution occurs in 80-90% between age of 2 months to 1 year [4,5] but obstruction persists in 2-4% of these infants after even 2 years of age [6,7]. The timing for Probing and Syringing of Nasolacrimal Duct has remained under discussion [1,4]. It is advocated that Probing and Syringing should be performed under G/A, through the upper punctum and between 6 months to 1 year [8]. In case of failure of meticulous canalization leading to partial or complete obstruction of proximal or distal end of the duct results into infection of the lacrimal passages proximal to obstruction. This results into initially epiphora, with watery discharge leading to sticky and purulent discharge. These are most common complaints for the baby by the parents [13]. Initially the conservative management is preferred and the parents are taught to massage the lacrimal sac area along with some local ophthalmic antibiotic eye drops to treat infection until the discharge disappears or becomes watery [13]. This conservative treatment is

carried on until spontaneous canalization of the NLD [10] to avoid the complications i.e. acute dacryocystitis, recurrent dacryocystitis or canaliculitis leading to obstruction of NLD and surgical intervention [12]. Syringing and probing has to be considered when spontaneous canalization of NLD does not occur after the age of nine month to one year. The age of the infant for surgical intervention should not be less than six months [11].

METHODS AND SUBJECTS

Retrospective Cross-sectional study technique was used and data were collected from the concerned cases recorded in operation theater registers at DHQ Hospital Faisalabad and researchers clinics from January 2003 to December 2005. The diagnosis of Congenital Nasolacrimal Duct obstruction was based on history of watering from eye(s) since birth or during first few weeks of life, with or without discharge, and clinical examination as regurgitation from sac with or without obvious swelling in lacrimal sac area. Also detailed ocular examination was performed with special reference to abnormalities of lids, or face, lacrimal puncta, ruling out causes of lacrimation like infections and allergic conjunctivitis, Ophthalmia Neonatorum, Keratitis, Buphthalmos etc. Strict criteria, for selection of patients, was observed. Infants were

not less than 6 months of age as spontaneous resolution is possible. Below 6 months conservative management consisting of topical antibiotics and lacrimal massage was done. The procedure was performed, after written informed consent of parents, under General Anaesthesia. Dilatation of punctum was done by Nettleship punctum dilator. Syringing was performed from upper punctum with diluted pyodine solution. The Bowman's probe was introduced through upper punctum first vertically, then horizontally till the hard stop at medial wall of lacrimal sac was felt. Then it was further pushed downward, backward and laterally into nasolacrimal duct gently and firmly till it got engaged in bony canal. After removing the probe, syringing with diluted Pyodine solution was repeated to confirm the patency of the drainage system. The patient was sent home after fully recovered. The study was comprised of 90 cases, undergone for syringing and probing of NLD.

Table-1
Distribution of the patients according to their age.

Age category	Frequency	Percentage
6 -12 months	42	46.7
1-2 years	27	30.0
2-3 years	15	16.7
3-5 years	6	6.7
Total	90	100.0

Age of the patient at the time of probing was noted, 42 (46.7%) were infants, 27 (30.0%) were 1-2 years old, 15 (16.7%) were 2-3 years old and 06 (6.7%) patients were 3-5 years old i.e. all subjects were falling in age category of six month to five years irrespective to their sex, the parents were advised to visit the OPD with their infant or child for follow up after one week with usage of local antibiotic eye drops (Tobramycin), one drop thrice a day along with oral antibiotics (Erythromycin) in case of eye with purulent discharge. The use of topical antibiotic eye drops was continued for three to four weeks after the surgical intervention, the first follow up visit was advised after first week of the procedure performed, the second visit was advised after one month, the third visit after three months and the fourth and last follow up visit, after one year

therefore, follow up was completed with cooperation of the parents.

RESULTS

Feedback from the parents visiting for follow up as post operative cases in OPD was recorded and presented in tabular form in Table-2.

Table-2
Distribution of the patients according to their recovery rate.

Symptoms free patients at different follow up	Frequency	Percentage
First follow up	63	70.0
2 nd follow up	10	11.1
3 rd follow up	5	5.5
4 th follow up	6	6.7
NA*	6	6.7
Total	90	100.0

*NA (Not available for follow up)

Almost 70% (63/90) of the cases were symptom free at the time of their first follow up visit i.e. after one week of syringing and probing procedure, almost 11% (10/90) of the patients were symptom free at the time of second visit, almost 5.5% (5/90) of the patients were free from the sign symptoms at the time of their third visit whereas almost 6.7%(6/90) of the patients were cured at the time of their fourth visit and 6.7% (6/90) patients never returned for follow up. It is depicted from the data that as an aggregate almost 93 % (84/90) of the cases were free from sign symptoms at the end of one year. It was observed that almost 68% of the cases with age 6-12 months were symptom free at first visit of their follow up and 32% of the patients with age group 1-2 year were symptom free at their third visit for follow up, almost 90% of the patients were free from their problem at the time of their third visit for follow up where as 10% of them had to complete their fourth follow up visit.

DISCUSSION

Canalization of NLD is completed at or near the time of birth. Anomalies may occur anywhere along the

course of the system [7,8]. Atresia of NLD is the most common cause of epiphora in infants. The most common site of obstruction is at the entrance into the nose (valve of Hasner) under the inferior turbinate[8]. The probing has been a time proven treatment for Congenital Nasolacrimal Duct obstruction. But there is controversy regarding the time of probing and its outcome in older children [6,8,9,12]. Traditional options include office probing with topical anaesthesia under sedation at the age of 4-6 months [16] or observation and medical management followed by probing under G/A at approximately 12 months [4]. Advocates of early probing suggest that early correction avoids months of morbidity due to epiphora and chronic Dacryocystitis. They also suggest that postponement of the procedure may result in decreased success with simple probing because of chronic inflammation and secondary fibrosis [4,11,15]. Advocates of the late probing comment on large no. of infants in whom spontaneous resolution of the obstruction negates the need for probing at the first place because of spontaneous resolution.

Present study shows that the cure rate of probing and syringing of infants between the age of 6 months to 12 months has been 93% at the end of one year. The success rate decreases with increasing age of the children after one year as shown from the study by Rajat Maheshwari where success rate 88.1% in children between age of one and 2 years and the success rate was further decreased to 80.9% in children above 2 years of age[15]. V K Sharma and others in their study have shown a success rate of 97% after multiple sittings in infants from 5^{1/2} to 7 months of age. mucosal The results of this study are comparable with the previous studies performed and published at national and international forums. It was depicted from the data that syringing and probing technique for treatment of nasolacrimal duct obstruction has the higher frequency of success rate for the age category 6-12 months at single attempt as compared to rest of the categories.

CONCLUSION

Probing and Syringing has remained the best and time tested procedure for the treatment of congenital NLD obstruction, through the upper punctum and under General Anaesthesia. The best time is between 6 months and 1 year of age.

REFERENCES

1. James DH, Mac Ewans CJ. Managing Congenital Nasolacrimal Duct Obstruction in general Practice. *British medical Journal* 1997; 315: 293-6.
2. Arruga H. *Ocular Surgery*. Translated from Spanish Edition. Michael K. Hogan, Lewis Chapparo McGraw Hill, New York 1962. 945.
3. Pollack K., Sommer E. Analysis of congenital dacryostenosis in consideration of mucoceles. *Jahrestagung der DOG*, 2002; 10:10-12.
4. Rob RM. Success rates of nasolacrimal duct probing at time intervals after 1 year of age. *Ophthalmology* 1998; 105: 1307-9.
5. CJ Mac Ewans, JDH Young, CW Barras, B Ram, PS White. Value of nasal endoscopy and probing in the diagnosis and management of children with congenital epiphora. *Br. J Ophthalmol* 2000; 85:314-8.
6. Piest KL, Katowitz JA. Treatment of congenital Nasolacrimal duct obstruction. *Ophthalmology clinics of North America* 1991; 4: 201-9.
7. Kerstein RC. Congenital lacrimal abnormalities In: *Principles and practice of ophthalmic plastic and Reconstructive surgery*. WB Saunders Company 1996; 2: 731-47.
8. Jack J Kanski. *Clinical Ophthalmology* 5th Edition. P-65.
9. Guyton, C. & John E. Hall. *Text Book of Medical Physiology* 11th addition, Reed Elsevier India.2006.
10. Imtiaz Ali Shah, 2006.
11. *Clinical Ophthalmology for Medical Students*, 1st edition Larkana Sindh, Pakistan.
12. Katowitz JA, Welsh MG. Timing of initial probing and irrigation in congenital nasolacrimal duct obstruction. *Ophthalmology* 1987;94:698-705.
13. Nucci P, Capoferri C, Alfarano R, Brancato R. Conservative management of congenital nasolacrimal duct obstruction. *J Paediatric Strabismus* 1989; 26: 39-43.
14. Renu Jogi, 2009. *Basic Ophthalmology*, 4th edition Raipur Chhattisgarh, India.
15. Richard S. Snell. *Clinical Anatomy by Regions* 8th edition Washington, D.C., USA.2007.
16. Rajat Maheshwari: Results of probing for Congenital Nasolacrimal Duct Obstruction in Children Older than 13 Months of Age. *Indian Journal of Ophthalmology*, 2005;53:49-51.

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17. Sharma VK, Vaidya S, Shrivastava S. Syringing and Probing under Local Anaesthesia in Infants. The Internet Journal of Ophthalmology and Visual Science. 2005;3.

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