



Success Rate After First Probing and Syringing in Infants of Age Between 6-9-Months with Epiphora Due to Congenital Nasolacrimal Duct Obstruction

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Objectives: To evaluate the success rate of probing and syringing in children with epiphora

Study Design: Case series

Materials & Methods: Twenty three infants (15 males and 8 females) with congenital nasolacrimal duct obstruction with ages between 6-9 months were observed for 6 months. They underwent first surgical intervention of probing and syringing with pyodine mixed solution. Procedure was performed under general anesthesia. Immediate success was declared as soaking of gauze packing with pyodine mixed solution. Final outcome was observed after six weeks at which absence of epiphora was considered as success.

Results: Out of 23 patients, there were 12 (65.22%) males and 11 (34.78%) females. After six weeks follow-up, overall success rate was 82.61% (n=19).

Conclusion: Probing and syringing in infants of less than nine months is an effective surgical method to treat epiphora which is not relieved with non surgical measures.

Key Words: Epiphora, Probing and syringing. Nasolacrimal Passage, Congenital Nasolacrimal Duct Obstruction (CNLDO)



Introduction:

Nasolacrimal passage is meant for drainage of tears from eye to nose. It starts from punctum and finally drains into nose under inferior turbinate. The nasolacrimal duct usually canalizes at 8 months of fetal life¹. The delay in this developmental process results in residual membrane or stenosis at any level in the nasolacrimal system^{2,3}. It results in overflow of tears i.e. epiphora. Epiphora (watering eyes) commonly develops within 6 weeks of birth⁴. It is bilateral in a third of cases⁴. The incidence of blockage which results in epiphora has wide disparity by different investigators. Congenital nasolacrimal duct obstruction (CNLDO) is among the most commonly encountered congenital anomalies in pediatric age group, presenting in up to 20-30% of newborn infants^{3,5,6}. According to some authors, it is present up to 70% of neonates⁷. Most of the obstructions open spontaneously. Published series have shown clearing of disease in 50-90% of children during the first six months of life^{7,8,9}. Non surgical management with massage and topical antibiotics is done during the first 6 months of age and half of CNLDO resolves with this conservative management in infants. Initial surgical management is probing and syringing which is usually considered beyond the age of one year. Delay in probing past 13 months of age might be associated with decreased success. Silicone intubation is also an initial surgical procedure for older children (older than 18 month) with CNLDO. The decision to delay the probing and syringing needs continuous surveillance and cooperation of parents. They should perform massage and use different drops regularly. It requires a good cooperation, patience, compliance and follow-up by parents. Most of the parents are very conscious about epiphora and wants to get rid of it as soon as possible. Sometimes, it is quite difficult to convince them about the natural history of disease. The disparate reports in the literature indicate the lack of consensus on the approach for management of CLNDO. Mostly probing and syringing is preferred after one year but reports are present that procedure done before one year has good results too. It not only cures the child from watery and sticky eyes but also gives a sense of relief and satisfaction to parents. The purpose of this study is to determine, the results of nasolacrimal duct probing with syringing in infants before 9 months of age.

Methodology:

The study was conducted at Pediatric department of Eye Unit-III, Mayo Hospital Lahore. Twenty three infants were selected from outpatient department. Both genders between ages of 6-9 months were included in study. Patients below the age of 6 months and above 9 months were excluded. The parents were asked to sign the informed consent. Patients

were divided into three groups according to their age; Group-A (age 6-7 months), Group-B (7-8 months), Group-C (8-9 months). Socioeconomic status was also taken. Past history was taken and only those patients were included who had congenital epiphora and had no other disease or trauma in past history. Detailed anterior and posterior segment examination was performed during examination under anesthesia (EUA). All patients underwent detailed ophthalmic examination including cycloplegic refraction, funduscopy and glaucoma parameters. Other ocular diseases were excluded. All the patients were treated by probing and syringing with pyodine mixed solution under general anesthesia. Postoperatively, all patients were given combination of antibiotics and steroids drop (Tobramycine 0.3% + Dexamethasone 0.1%) four times a day for next six weeks period. There was no withdrawal of any patients from any group during follow up period. Fortnightly visits were advised for each patient. Final visit happened after 6 weeks. Final outcome was considered at the end of 6 weeks at which absence of epiphora was considered as a success. All the data was analyzed through Statistical Package for Social Sciences (SPSS) version 19 and the results were obtained accordingly. The variables analyzed were demography and examination. The quantitative data (age) was presented with simple descriptive statistics like mean and standard deviation. The qualitative data (gender) was presented as frequency and percentage.

Results:

Twenty three (23) children of age between 6-9 months were examined at pediatric ophthalmology clinic of Eye unit-3, Mayo hospital Lahore. Out of these twenty three cases, 12 (62.22%) were male and 11 (34.74%) were female. As per inclusion criteria, minimum age was 6 months and maximum was 9 months with the mean age of 7.89 months and standard deviation (SD) of ± 0.70 . All parents of included infants were informed as to the nature of study and consented properly to undergo procedure of probing and syringing. All procedures were performed by same surgeon and outcome was noted after 6 weeks.

After the surgical procedure, results were seen as successful or failure of probing and syringing. Overall success rate was 82.61% (n=19). No statistical significant difference was seen in success rate in different groups A, B and C of age ranging from 6-9 months. No separate comparison was calculated in different age groups.

Table 1: Distribution of different age groups

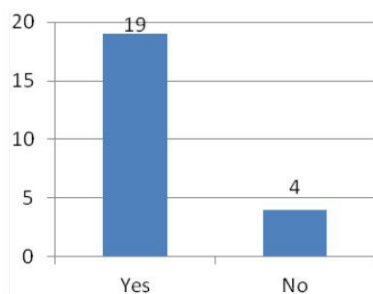
Age (months)	Frequency	Percent
6-7	3	13.0
7-8	8	34.8
8-9	12	52.2
Total	23	100

Table 2: Distribution in different sex

Sex	Frequency	Percent
Male	12	65.22
Female	11	34.78
Total	23	100

Table 3: Success rate of S/P

Success	Frequency	Percent
Yes	19	82.61
No	4	17.19
Total	23	100

Frequency of success after syringing probing**Discussion:**

Traditionally the process of syringing and probing in children with congenital epiphora is deferred till the age of one year. The aim of this study was to determine the success rate of probing and syringing if performed a bit earlier i.e. 6-9 months. The success rate in this study for P/S of children between 6-9 months is 82.61%, which shows that large

number of patients can be cured without a troublesome period of further 3 months. It is considered as a less offensive primary surgical management and had been found successful in range of 70%–97% of cases but most of the reports are with about 90%.^{5,10,11}

An overall success rate of primary probing was declared as 78% in a prospective observational study by the Pediatric Eye Disease Investigator Group in infants 6 to 60 months of age¹². The results of this report were similar beyond 36 months of age¹⁵. The success rate in probing in congenital nasolacrimal duct obstruction is 92% if done after 12 months of age as reported by Rob⁵.

A different method of treatment was adopted by Kushner, who had the idea that lacrimal massage performed with occlusion of the common canaliculus and firm downward pressure on the lacrimal sac was more effective than gentle lacrimal massage or no massage⁸. It is reported that success rate of simple probing is usually decreased slightly with increasing age of the child. Many investigators have reported this fact, particularly after 24 to 36 months.^{13,16-19} The same age group was also investigated by Nucci et al and they claimed that resolution of symptoms was succeeded in 93.3%¹⁶.

A prospective observational study of primary nasolacrimal duct probing in infants 6 to 60 months of age by the Pediatric Eye Disease Investigator Group showed an overall success rate of 78% with no decline in the efficacy of simple nasolacrimal duct probing through 36 months of age²⁰. All this review of literature shows that there is a lot of difference of success of probing and syringing before the usual age group i.e. one year and beyond if this procedure is performed a bit earlier. A further step to this treatment is that failed cases can be treated with repeated P/S within a recommended period of 6 weeks. However, still failed cases may need more advanced and complicated procedures like Dacryocystorhinostomy (DCR). This procedure is generally reserved for children who have failed other procedures. Dacryocystorhinostomy (DCR) is of two types i.e. with external or endoscopic approach. External DCR has much better success rate of 96%²¹ whereas the success rate of endoscopic dacryocystorhinostomy is claimed lesser to that of external DCR in children as 82-94%^{22,23}.

Conclusion:

Probing and syringing in younger children of less than nine months is effective surgical method to treat epiphora which is not relieved with non surgical measures.

Recommendations:

Probing and syringing should be tried before the age of one year as primary intervention to save the time and