

Original Research Article

To study the role of conservative management and to evaluate effectiveness of syringing and probing in children with congenital nasolacrimal duct obstruction in a tertiary care institution of Kashmir.

ABSTRACT

The study aimed to find the role of conservative management and to evaluate effectiveness of syringing and probing in children with congenital nasolacrimal duct obstruction in a tertiary care institution of Kashmir. The prospective study was carried on 150 cases of congenital nasolacrimal duct obstruction to rationalize the treatment of congenital nasolacrimal duct obstruction by observing the response to Criggler's massage in infants and by syringing and probing in children above 1 year of age. It was observed that the success rate of conservative management in infants is 78.16%. The success rates of syringing and probing is observed to decrease with increasing age of patient with highest success rate was in the age group of 13-18 months. Criggler's massage is highly successful during first year of life therefore the infants presenting with congenital NLDO should be managed conservatively and observed. In children presenting after 1 year of age Probing is highly successful procedure when done early after 1 year of life.

Keywords: age; congenital nasolacrimal duct obstruction; probing; NLD massage;

Introduction

Congenital nasolacrimal duct obstruction (CNLDO) is the most common cause of epiphora in infant occurring in about 20% of infants (1). It is usually due to failure of canalization of nasolacrimal duct at the lower end. Canalization of nasolacrimal duct usually takes place at the end of 6 months of intrauterine life. It may be delayed for several weeks or months after birth (2).

Many other developmental abnormalities affecting the lacrimal system can cause epiphora. More common among these are absence or stenosis of puncta, absence or stenosis of canaliculi, atresia of nasolacrimal duct. Infants with NLDO present with epiphora and recurrent purulent discharge. Many reports have confirmed high frequency of spontaneous resolution of symptoms during first year of life. Epiphora due to congenital nasolacrimal duct obstruction is commonly seen in day to day practice in India. The study was conducted to evaluate the effectiveness of conservative management and to evaluate the efficiency of syringing and probing.

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Material and Methods:

Subjects: A prospective study was conducted from January 2014 to February 2016 in Department of Ophthalmology Government Medical College Srinagar. Patients presenting with symptoms of epiphora and discharge were enrolled based on the following inclusion and exclusion criteria:

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Inclusion criteria:

- 1) Confirmed diagnosis of CNLDO.
- 2) No Prior intervention done.
- 3) Absence of other nasolacrimal malformations or disorders.
- 4) Age younger than 4 years.
- 5) Consent for participation.

Exclusion criterion:

- 1) Patients with secondary causes for epiphora.
- 2) Patients more than 4 years of age.

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Patients less than 1 year of age were put on conservative management by demonstrating massaging of sac area using Crigglar's technique. Patients presenting above 1 year of age and in cases, more conservative

management failed, probing was done. Both upper and lower puncta were dilated with punctum dilator. Syringing with normal saline through lower punctum was done to confirm the nasolacrimal duct obstruction.

Probing was done using Bowman's probe 00 00 to size 1. Bowman's probe was inserted into the upper canaliculus and passed till the hard feel of the medial wall of lacrimal fossa was felt. At this point the probe was turned and passed into the nasolacrimal duct and gently advanced till resistance was felt. Attempt was made to break the resistance by applying firm pressure till the 'giving way' of resistance was felt. The patency of nasolacrimal duct system was checked by syringing through upper punctum and the fluid drained from nasopharynx by a pediatric size suction catheter. The probing was considered successful if at 3 months follow up the patient was free of symptoms. Sometimes antibiotic eye drops to be instilled four times a day were prescribed for obvious infective conjunctivitis.

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79 Results

The prospective study was carried on 190 eyes of 150 cases in cases of congenital nasolacrimal duct obstruction to study the mode of clinical presentation and evaluate the success rate of conservative treatment and probing in different age groups.

Out of 150 cases 64 (42.67%) were male 110 cases (73.33%) were unilateral. The mean age of the patients was (14.20 months) ranging from one month to 44 months.

The patients were divided into six age groups including;

Group 1 ≤ 6 months old, 13 eyes (6.85%) , **Group 2** from 7-12 months , 74 eyes (38.95%), **Group 3** from 13 -18 months , 47 eyes (24.75%) , **Group 4** from 19-24 months 31 eyes (16.32%), **Group 5** from 25 -36 months 21 eyes (11%), **Group 6** from 37- 48 months 4 eyes 2.11%.

The success rate of conservative treatment was high in infants. The cure rate was 76.92% in the age group of ≤ 6months and 78.37% in the age group Of 6-12 months.

The success rate of initial probing was 85.10% when undertaken in the age group of 13-18 months. The success rate in the age groups of 19-24 months, 25-36 months, 37-48 months were successively 77.42%, 61.90% and 50.00% respectively.

The success rate of repeat probing done 12 weeks after first probing in cases of failure was 71.43%, 57.14%, 37.50 and zero% in age groups of 13-18 months, 19-24 months, 25-36 months and 37-48 months respectively.

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104 Patient Characteristics (Table 1)

Age in months	Unilateral		Bilateral	
≤6	5	4.54%	4	10%
7-12	42	38.18%	16	40%
13-18	25	22.73%	11	27.50%
19-24	19	17.27%	6	15.00%
25-36	15	13.65%	3	7.50%
37-48	4	3.63%	0	0%
Total	110	100%	40	100%
Membranous obstruction	93	84.55%	36	90%
Firm obstruction	17	15.45%	4	10%

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Clinical Features at Presentation (Table 2)

Epiphora	Epiphora With Regurgitation	Epiphora With Discharge And Regurgitation	Lacrimal Abscess
72	7	108	3

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Treatment Outcome (Table 3)

Age In Months	No of eyes	Conservative Treatment	Successful (at 13 months)	S&P	Successful	Repeat S&P (after 12 wks)	Successful
≤6	13	13	10(76.92%)			-	-

7-12	74	74	58(78.38%)				
13-18	47	-	-	47	40(85.10%)	7	5(71.43%)
19-24	31	-	-	31	24(77.42%)	7	4(57.14%)
25-36	21	-	-	21	13(61.90%)	8	3(37.50)
37-48	04	-	-	04	2 (50.00%)	2	0

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108 DISCUSSION

109 One hundred fifty patients with congenital nasolacrimal duct obstruction
 110 that were studied to demonstrate Management of Congenital
 111 Nasolacrimal Duct Obstruction at different ages and the success rate of
 112 probing in different age groups. The relief in symptoms for 3 months was
 113 considered as the successful procedure.

114 The success rate of conservative treatment in infants is 78.16%. The
 115 success rate of first Syringing and probing is 76.69% and second
 116 Syringing and probing is 50.00%. The success rates of syringing and
 117 probing is observed to decrease with increasing age of patient with
 118 highest success rate in the age group 13-18months. Bahar also
 119 reported a high success rate in children younger than 18 months at the
 120 time of procedure. He probed 860 eyes with NLDO and only 6% of
 121 treated eyes required a second probing as against 14% in our study
 122 (3).

123 V R MANI reported high success rate of syringing and probing around
 124 one year of age and concluded that with increasing age failure rate
 125 increases which is inference of our study as well (4). Kashkouli et al. in a
 126 prospective interventional study of success rate of initial probing in
 127 children under 5 years concluded 92% cure rate in first year, 85% in
 128 second year, 65% in third year, 63.5% in fourth and fifth year of age
 129 which is consistent with present study (5). Katowitz and Welch studied
 130 427 patients with congenital NLDO involving 572 eyes. After failure of
 131 conservative treatment patients underwent probing. Based on their
 132 observation they suggested that probing should be performed prior to 13
 133 month (6). Manor et al, reported the same results, success of NLDO was
 134 negatively correlated with aging (7). Sturrock et al. (8), Gupta (9), Singh
 135 Bhinder G. et al.(10), all drew inferences drew inferences similar to the
 136 present study based on their observation of probing done at different
 137 ages in children.

However, Zewan J (11), Mehashweri (12), MacEven(13) have concluded from their studies that age does not influence the chance of having a successful probing. In the present study, 78.16% of CNLDO resolved with the conservative management before first year of life. The percentages of conservative management in other studies were 94.7% (Nelson et al 1985)(14), 93.3 (Nucci et al 1989)(15) , 82.9% (Hirohiko et al 2008) (16).

In view of above future studies with larger sample size are paramount to find out the statistical significance between age and successful probing results in children further wait and watch policy for infants on conservative treatment is recommended. In our study late presentation of infants is probably due to social perception that epiphora in new borns is a normal phenomenon so awareness needs to be created.

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