CONGENITAL NASOLACRIMAL DUCT OBSTRUCTION AT AGENCY HEADQUARTER HOSPITAL BATKHELA NWFP

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ABSTRACT

Objective: To find out the frequency of congenital nasolacrimal duct obstruction (CNLDO) and the results of its management.

Material and Methods: A prospective study of 160 consecutive patients with congenital nasolacrimal duct obstruction, conducted from January 1999 to December 1999 at the Department of Ophthalmology Agency Head Quarter Hospital Batkhela, NWFP. Only patients below the age of twelve months were included the study. Diagnosis was made by history of epiphora beginning early in life with obstruction clinically confirmed on examination. Antibiotic drops and massage of the lacrimal sac was advised. Probing was carried out for the nonresolving cases at the age of one year.

Results: A total of 160 patients CNLDO were included in the study. Seventy Two (45%) of these infants presented within the first two months of life. Out of these 160 patients 18 patients were lost to followup. Out of remaining 142, 132(93%) of the patients resolved spontaneously with conservative treatment using topical antibiotics within one year. Only 10 (7%) of the patients required probing.

Conclusion: Parents of CNLDO patients should be counseled about the disease and advised them to wait for spontaneous improvement. Probing for unresponsive cases is recommended.

Key words: Congenital epiphora, Congenital nasolacrimal duct obstruction, Massage, Probing.

INTRODUCTION

Tears are a vital component of the visual system. They provide lubrication, oxygen and antibacterial materials, thus protecting the eyes from injurious substances[1]. The lacrimal system consists of 2 puncti, an upper and a lower which drain into upper and lower canaliculi separately. Each canaliculus runs 2 mm vertically and 8 mm medially and horizontally, most often both of them join to form a common canaliculus which pierces the lateral wall of the lacrimal sac. The tears drain from the lacrimal sac, which lie in the lacrimal fossa of lacrimal bone, into the nasolacrimal duct. The nasolacrimal duct runs through the maxillary bone and opens into inferior meatus of the nose. The distal part of the nasolacrimal duct may be covered by a membrane and this may be the cause of prolong nasolacrimal duct obstruction.

An intact lacrimal system including the production of the tears in the lacrimal gland, the flow of it across the front surface of the eye until their drainage into the nose is essential for the health of the eye and the preservation of vision.

Nasolacrimal duct obstruction may be congenital or acquired. The congenital nasolacrimal duct obstruction is due to the failure of canalization or persistence of membrane at the lower end of the nasolacrimal duct. While the causes of acquired NLDO are trauma, growths and inflammatory conditions like orbital cellulitis[2,3] symptomatic NLDO occurs in approximately 5-6% of infants. A sticky and watery eye with positive regurgitation on pressure over the lacrimal sac confirms the diagnosis. Other diagnostic measures such as probing or dacryoscytography (DCG) may be combined with treatment under general anaesthesia.

CNLDO results in watering and or sticky eyes, which can be distressing for both the child and the parents.The standard management is probing of the duct but the timing and requirement for such probing has been challenged by emerging evidence of a high rate of spontaneous resolution during the first year of life[4]. All children regardless of their age should receive massage and topical antibiotics initially before surgical intervention[5].

More than 90% of the CNLDO resolve spontaneously and only 4 - 10% need active surgical management[6].

MATERIAL AND METHODS

This prospective study was conducted at AHQ Hospital, Batkhela, Malakand Agency from January 1999 to December 1999. One hundred and sixty patients were included in this study having epiphora and stickiness of the eyes. Only those patients were included in this study that were below the age of 12 months as some patients spontaneously resolve within a year. The exclusion criteria were age above 12 months, lacrimal sac fistula and congenital absence of lacrimal puncti.

The family history was taken from the parents and these children were examined clinically. Conservative treatment in the form of topical antibiotic as drops at daytime and ointment for night was started The parents were guided and advised on massage of the lacrimal sac 4 times a day. They were followed on monthly basis. In the study group 18 patients were lost to follow up. Of the remaining 142 only 10 patients did not resolve spontaneously at 12th month, that underwent probing procedure under short acting general anaesthesia. The punctum was dilated by punctum dilator and lacrimal probe No. 0 (smallest size) was introduced into the punctum passed through canaliculus, lacrymal sac and nasolacrimal duct. Only one patient failed primary probing who underwent repeat successful probing after a

AGE AT PRESENTATION

Age (months)	Number of patients	%age
1-2	72	45
2-3	26	16.25
3-4	20	12.5
4-5	14	8.75
5-6	12	7.5
6-7	6	3.75
7-8	3	1.87
8-9	3	1.87
9-10	2	1.25
10-11	2	1.25

TABLE-1

month. The success was judged by reduction in watering of the eyes[7].

RESULTS

Out of these 160 patients, 106(66.25%) were male and 54(33.75%) female. Age ranged from 1 month to11 months. Nineteen (11.8%) of the patients had positive family history of nasolacrimal duct obstruction. The majority 72 (45%) were presented within the first 2 months of life as shown in table 1.

Left side was involved in 71 (44.375%) of patients, right side in 67 (41.875%) and 22 (13.75%) patients had bilateral nasolacrimal duct obstruction as appears in table 2.

LATERALITY OF NASOLACRIMAL DUCT OBSTRUCTION

Side	Number n = 160	%
Left	71	44.375
Right	67	41.875
Bilateral	22	13.75

TABLE-2

TYPE OF TREATMENT REQUIRED

Type of treatment	Number N = 142	%age
Spontaneous recovery with conservative treatment	132	92.96
Cured with 1st Probing	09	6.34
Cured with 2nd Probing	01	0.70

TABLE-3

Eighteen patients were lost during follow up. Of the remaining 142 patients 132 (92.96%) resolved spontaneously with conservative treatment, while 10 (7.04%) required probing. Nine patients were cured by 1st probing and only one needed 2nd probing. (table 3).

DISCUSSION

CNLDO is not an uncommon condition in our setting. The presenting features are watering and stickiness of the eyes. Eye infections are also common. Early medical management with topical antibiotics and massage of the lacrimal sac reduces the need for surgical manipulation[8]. We received 160 patients in one year duration from population of 0.5 million. The masses are aware of the problem and that is the reason that majority (45%) of the patients presented in first 2 months of life.

According to MacEwen and Young (1991) in a cohort study of 4,792 infants the evidence of defective lacrimal drainage was present in 964 (20%) at some time during the year. 95% became symptomatic during the first month of life. Spontaneous resolution occurred throughout the year and 96% had resolved before the age of one. They concluded not to perform probing before the age of one year[9]. In our study males were affected more than females in a ratio of 1.96:1. Only 19 (11.8%) patients had a positive family history suggestive of naso-

lacrimal duct obstruction. Left side was involved in 71 (44.375%) of patients, right side in 67 (41.875%) and 22 (13.75%) patients had bilateral nasolacrimal duct obstruction. Robb observed bilateral involvement in 15.4% of patients[10]. In this study 92.96% of the patients resolved spontaneously with conservative treatment with topical antibiotics and massage. According to Paul,out of the 55 nasolacrimal ducts obstructions that opened spontaneously, 8 (15%) were open at three months, 25 (45%) at six months, 39 (71%) at nine months, and 51 (93%) were open at one year[11].

In our patients only 7.05% required active surgical management with probing. Alternate procedures are bicanalicular silicone intubation with the Ritleng intubation system and balloon catheter dilatation for treatment of congenital nasolacrimal duct obstruction[12,13,14,15]. Probing reduces the symptom rate to a level close to normal for the age group concerned16. Supraorbital notch or foramen is used to localize the nasolacrimal duct[17]. The postponement of probing and irrigation for congenital NLD obstruction beyond the age of 1 year did not result in an increased rate of failures or complications[18]. However Katowitz and Welsh (1987) observed the success rate of initial probing to be 97% under 13 months of age.

Over 13 months, the mean success rate was 54.7%[19].

In this study first probing was successful in 90% of the patients and only 1 (10%) needed 2nd probing. Robb observed relief of tearing and discharge in 90% of patients with the first probing, and an additional 6% were cured after a second probing. Altered nasolacrimal duct anatomy seemed to account for probing failures[20]. According to Clark success rate with 1st probing is 92%[21]. The management of failed probing for congenital nasolacrimal duct obstruction, is done by repeat probing, inferiorturbinate infracture, closed lacrimal intubation and dacryocystorhinostomy. There is considerable variation as to the timing of these interventional techniques[22].

CONCLUSION

Congenital nasolacrimal duct obstruction is not an uncommon entity in our society. Spontaneous resolution is very common and surgical intervention in a few cases which is very successful mostly in the first attempt.

Parents education about the disease, its proper massage, wait for spontaneous resolution and probing for the unsuccessful cases are recommended.

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