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MANAGEMENT MODALITIES OF CONGENITAL NASOLACRIMAL DUCT OBSTRUCTION AT A TERTIARY CARE CENTRE

Ophthalmology

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ABSTRACT

Background: Congenital nasolacrimal duct obstruction (CNLDO) is a common ophthalmological problem faced routinely. Incomplete canalisation of the valve of Hasner is the major cause.
Objective: To study the various treatment modalities of CNLDO.
Methods: A prospective study was done in patients of age group 0-4 years. All cases were subjected to topical antibiotic drops (Tobramycin 0.3%) and massage of the lacrimal sac. Probing and syringing of the nasolacrimal duct was done in failed cases after 1 year of age under general anaesthesia.
Results: A total of 59 cases were evaluated in this study. 89.8% cases got cured with massage and tobramycin (0.3%) eye drops and remaining 6 cases underwent probing.
Conclusion: Conservative medical management is highly successful in the initial treatment of congenital nasolacrimal duct obstruction.

KEYWORDS

Congenital, Nasolacrimal duct, Massage, Probing, CNLDO

Introduction

Congenital nasolacrimal duct obstruction is a common problem that ophthalmologists routinely face in their practice. The nasolacrimal duct begins to develop during the fifth week of embryogenesis.[1] Congenital nasolacrimal duct obstruction is due to incomplete canalisation of the valve of Hasner at the distal part opening in vast majority of cases.[2] Around 90% of cases gain patency no longer than a year. Several studies have been done to estimate the incidence of congenital nasolacrimal obstruction (CNLDO) which yielded a varied range of results between 1.2% and 30%; probably the most widely accepted incidence to be 6%.[3] The reported incidence of anatomic nasolacrimal duct obstruction in stillborn infants is higher at 73%.[4] The obstruction can be unilateral or bilateral with no reported sex or genetic predilection.

Congenital dacryocystitis needs aggressive therapy as its spread can lead to orbital cellulitis and further leading to meningitis. Because most infants with CNLDO spontaneously improve, the initial treatment should be conservative. Massage of the lacrimal sac can lead to a quicker resolution which will occur spontaneously in 90% of children by the age of one year.[5] Beyond this lacrimal probing is recommended to clear stenosis. Success rate is 90% in opening congenital nasolacrimal duct obstruction. If symptoms persist, a second probing is performed after a month and placement of silicone tubing may be indicated. Dortzbach et al reported a 48% complication rate in their Silicone tube implant study.[6] If silicone tubing fail and child still be tearing, a Dacryocystorhinostomy (DCR) can be performed at a later date.

Objective of the study:

To study the various treatment modalities of CNLDO.

Materials and methods:

This study was conducted in Regional institute of ophthalmology (RIO), Rajendra Institute of Medical Sciences (RIMS), Ranchi during August 2016 to July 2018, after taking proper approval from Institutional Ethics Committee. This study was conducted under the aegis of declaration of Helsinki. A prospective study was done which included 59 patients in the age group 0-4 years, who attended the outpatient department (OPD) during the study period. Each patient was subjected to detailed history taking, followed by ocular and adnexal examination as per predesigned proforma.

Clinical examination included the examination of nature of discharge, fullness in lacrimal sac area and other ocular examination were done. Nature of regurgitation on pressure over the lacrimal sac was examined. ENT opinion was taken to rule out any nasal pathology if any. An informed written consent was taken for procedure/surgery under general anaesthesia. All pateints received initial conservative medical treatment which consisted of use of topical antibiotic drops (Tobramycin 0.3%) and massage of the lacrimal sac. Cases which failed to respond to the above strategy was subjected to probing and syringing of the nasolacrimal duct with normal saline. Probing was done after 1 year of age under general anaesthesia.

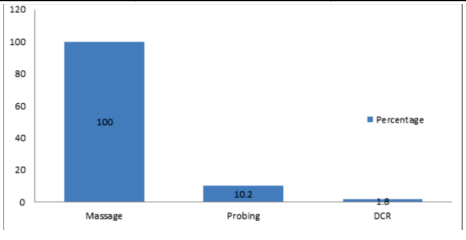
After treatment follow up of all cases were done on next day, after 1 week, 1 month, 3 months and 6 months.

RESULTS:

In our series, in 59(100%) cases out of 59 were advised for massage and in amongst them 53 (89.8%) got cured with massage and tobramycin (0.3%) eye drops and remaining 6 cases underwent probing. Out of those 6, only 1 case was not cured by probing. Remaining 4 out of 5 cases advised for probing got cured with 1st set of probing and only 1 case needed 2nd set of probing. 1 case underwent for Dacryocystorhinostomy (DCR) and got cured with External DCR.

Table 1: Treatment procedure for CNLDO.

Advice	No of cases	Percentage
Massage	59	100
Probing	06	10.2
DCR	01	1.8



Graph 1: Treatment protocol for CNLDO

Table 2: Overall results of Nasolacrimal massage

Results	No of cases	Percentage
Cured	53	89.8
Failed	06	10.2
Total	59	100

Table 3: Outcome

Management	No of cases	Cured	Massage vs Probing vs DCR
Massage	59	53 (89.8%)	
Probing	06	05 (83.3%)	P < 0.05 Non significant
DCR	01	01 (100%)	

Average age of infants with CNLDO was 3.2 ± 2.7 months and the average age (± SD) of resolution was 9.1 ± 5.7 months.

DISCUSSION:

In our study CNLDO resolution with conservative management was 89.8% (53/59). Remaining 6 cases which did not get relief from massage were posted for probing, 4 cases got cured in one sitting of probing and 1 in second sitting probing. Remaining 1 case which was not cured by probing was advised External Dacryocystorhinostomy (DCR).

Nelson et al report a 94.7% response to massage and topical antibiotic drops within 8 months of treatment initiation.[7] Peterson and Robb reported 85% response to massage with fewer resolution after 9 months of age.[8] Nucci et al report 93.3% resolution in children upto 12 months of age.[9]

A prospective observational study of congenital 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 age.[10]

According to Robb, success rate in probing in congenital nasolacrimal duct obstruction was 92% if done after 12 months of age.[8] According to Clark success rate with 1st probing was 92%.[11]

Hakin et al describes 130 DCRS for congenital nasolacrimal duct obstruction and the success rate in these unintubated patients was 96%.[12]

Our results are almost similar to the results obtained by most of the authors mentioned above that conservative management includes nasolacrimal massage and antibiotic drops are highly successful procedures in treating a case of congenital nasolacrimal duct obstruction.

CONCLUSION:

Congenital nasolacrimal duct obstruction usually presents in early age with epiphora and many a times with purulent discharge. Nasolacrimal obstructions is the initiating event in establishing infection. Most of cases get resolved with conservative management, and should wait till the age of 1 year for spontaneous resolution before going for probing. Very few patients with CNLDO needs probing.

The parents may worry about the ocular health of the child and may seek multiple consultations from different doctors. It is the duty of ophthalmic surgeon who diagnoses the condition, to educate the parents about the condition to address their fears and get maximum cooperation during management.

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