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CLINICAL PRESENTATION, MANAGEMENT AND OUTCOME OF 100 CONSECUTIVE CASES OF CONGENITAL NASOLACRIMAL DUCT OBSTRUCTION SEEN IN A REGIONAL INSTITUTE OF OPHTHALMOLOGY

Garima Agrawal[1], Swati Ravani[2]

[1]Assistant Professor in Ophthalmology, M&J Institute of Ophthalmology, BJ Medical College, Civil Hospital, Asarwa, 380016; [2]Associate Professor in Ophthalmology and Head of Unit of Oculoplasty, M&J Institute of Ophthalmology, BJ Medical College, Civil Hospital, Asarwa, 380016.

ABSTRACT

Introduction: 2-6 % of full term newborn children manifest symptoms of congenital nasolacrimal duct obstruction. The most frequent presentation is tearing associated with mattering of the eyelashes and recurrent infection. We designed a study to document the clinical presentation, management and outcome of 100 consecutive cases of congenital nasolacrimal duct obstruction seen in a regional institute of ophthalmology.

Aim: Clinical presentation, management and outcome of 100 consecutive cases of congenital nasolacrimal duct obstruction seen in a regional Institute of Ophthalmology.

Material and Methods: 100 consecutive cases of congenital nasolacrimal duct obstruction, seen in our regional institute of ophthalmology were enrolled from June 2011 to June 2015. Patients of age less than 6 months were treated with massage four times a day and topical moxifloxacin 0.5% as and when discharge was seen. Probing was reserved for patients with acute infection or acute dacryocystitis in children aged 6 months to one year. Probing was the treatment of choice for children between one year and four years. Silicone intubation was done in patients who failed probing. Dacryocystorhinostomy was the procedure of choice for patients who failed probing or silicone intubation and as the primary procedure in children greater than four years.

Observations and Results: Massage with topical antibiotics were given to all patients. Probing was done in 37 children. Repeat probing was required in nine children. Two out of these nine children required probing with silicone intubation with inferior turbinate in fracture. Four children were managed with dacryocystorhinostomy. The success rate of various procedures were 60% for conservative management, 70.3% for probing, 77.8% for repeat probing, 50% for probing with silicone intubation with inferior turbinate in fracture and 75% for dacryocystorhinostomy.

Conclusion: Children with congenital nasolacrimal duct obstruction can be successfully managed with good outcomes.

Key Words: Congenital nasolacrimal duct obstruction, Clinical presentation, Management and outcome

INTRODUCTION

30% infants have an obstructed nasolacrimal duct at birth. [1] Only 2-6% of full term newborn children manifest symptoms of congenital nasolacrimal duct obstruction. The most frequent presentation is tearing associated with mattering of the eyelashes and recurrent infection. The most common cause of obstruction is incomplete canalization of the nasolacrimal duct with a vestigial membrane at its distal end.[1] Conservative management of the child with massage and topical antibiotics is recommended. More definitive treatment in the form of probing may be required for cases that fail to canalize or early in cases with recurrent infection, acute dacryocystitis or the presence of congenital dacrocystocele.[1] We designed a study to document the clinical presentation, management and outcome of 100 consecutive cases of congenital nasolacrimal duct obstruction presenting to a regional Institute of ophthalmology.

Corresponding Author:
Dr. Garima Agrawal, Bunglow No. 11, Bopal 444, 200 feet S.P. Ring Road, Next to sun City, Bopal, Ahmedabad, 380058.
Email: garima.g.agrawal@gmail.com, garimagr@yahoo.co.in

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AIM:

Clinical presentation, management and outcome of 100 consecutive cases of congenital nasolacrimal duct obstruction seen in a regional Institute of Ophthalmology

MATERIAL AND METHODS:

The study was carried out at our regional Institute of ophthalmology.100 consecutive cases of congenital nasolacrimal duct obstruction presenting to our Institute were enrolled. The study period was June 2011 to June 2015. The study was a prospective interventional study. Ethical approval was taken from the institutional review board. The diagnosis was made on the basis of clinical presentation of constant watering , mattering of eyelashes ,regurgitation of fluid , mucus or exudate on pressure over the lacrimal sac. Other causes of epiphora pertaining to the eyelids, ocular surface and congenital glaucoma were ruled out. Cases of punctal, canalicular or common canalicular block on probing were excluded from our study. The patients of age less than 6 months were treated with massage four times a day and topical moxifloxacin 0.5% as and when discharge was seen. Probing was reserved for patients with recurrent infection or acute dacryocystitis in children between 6 months to 1 year of age . Probing was the treatment of choice for children between one year and four years. Informed consent was taken from the parents of the patient. Probing was performed under general anesthesia. Patients were followed at 1 week, 3 weeks, 3 months and 6 months after the procedure. Outcome was defined as resolution of symptoms and signs of nasolacrimal duct obstruction within 3 weeks of the procedure and continued remission for 6 months post procedure. Probing was done twice before the procedure was declared a failure. [2]Silicone intubation without intranasal fixation was done in patients who failed probing. The silicone tubes were kept in place for 6 weeks. Inferior turbinate in fracture was done in all cases of silicone intubation. In children greater than 4 years dacryocystorhinostomy was the treatment of choice. Dacryocystorhinostomy was also the procedure of choice in cases who failed probing/silicone intubation.

RESULTS AND OBSERVATIONS

Table I shows the patient demographics. Majority of the patients were less than6 months of age (51 out of 100). 33 patients were between 6 months to 1 year. 13 cases were between one to four years of age. Only three patients presented after four years of age. Many patients were treated elsewhere initially and then referred to our regional institute of ophthalmology for management.

Table II shows the clinical presentation of congenital nasolacrimal duct obstruction. Watering, regurgitation on pressure over the lacrimal sac, mattering of the eyelashes and increased tear lake were seen in all patients. Discharge at some point in the history of nasolacrimal duct obstruction was seen in 46 patients. 15 patients had acute dacryocystitis and 22 had persistent dacryocystitis. Recurrent conjunctivitis was seen in 35 patients. We did not come across a case of congenital dacryocystocele.

Table III shows the management of congenital nasolacrimal duct obstruction. The observed results were similar in both eyes in cases of bilateral affection and thus have not been presented separately. Massage with topical antibiotics were given to all patients. Probing was done in 37 children. This included those who presented after one year plus those who presented within one year but failed conservative management. Repeat probing was required in 9 children out of 37. Two out of these nine children required probing with silicone intubation with inferior turbinate in fracture. Three children who presented after four years of age were managed with dacryocystorhinostomy. One more child who failed probing with stenting was also managed with daryocystorhinostomy.

Table IV shows the outcome of all procedures. Massage with topical antibiotics was successful in 60 out of 100 patients (60%). Probing was successful in 26 out of 37 children(70.3%). 9 children required repeat probing. Repeat probing was successful in 7 out of 9 children (77.8%). 2 children were subjected to probing with silicone intubation and inferior turbinate in fracture. It was successful in one child. Four children underwent dacryocystorhinostomy. It was successful in three children with only one child requiring a repeat procedure.

DISCUSSION

In our institute probing was successful in 26 out of 37 children (70.3%) between one to four years of age. Repeat procedure was required in nine children. This resulted in resolution in 7 out of 9 children (77.8%). The overall success rate of probing in children between 1 to 4 years of age was 89.2%.These results are comparable with those in other studies.

Hanover SG et al reported the outcome of probing for congenital nasolacrimal duct obstruction for children 2 years and older. 73.3% patients (44 of 60) had resolution after one attempt of probing. 16 patients needed a repeat procedure. Overall success rate was 80% (48 of 60). Factors predictive of poor prognosis were identified.[2]

MacEwena CJ et al reported that the use of nasal endoscope facilitated the success of probing in children with congenital epiphora.[3]

Maheshwari R reported the results of probing in children aged 13 months and above. The success rate in group 1 (13-24 months) was 88.1% and in group 2 (> 24 months) was 80.9%. [4]

Deok Sun Cha et al reported that the success rate of initial probing in patients aged 6 – 71 months was 80%. The success rate of second probing was 61% for all patients. [5]

The Paediatric Eye Disease Investigator Group concluded that probing is a successful primary treatment of nasolacrimal duct obstruction in about three/fourth cases in children aged 6 to < 36 months old.[6]

Kushner BJ reported the results of simple probing in children aged 18 months to 4 years. 70% children had a good outcome. 100% children with simple membrane at valve of Hasner had a good outcome. Only 36% of those with complicated obstruction had a good outcome. [7]

Katowitz JA et al reported 97% success rate of initial probing in children under 13 months of age. Only 54.7 % success rate is reported in children over 13 months of age. They concluded that initial probing should be done prior to 13 months of age depending on severity of symptoms and parent compliance with medical management. [8]

Hirohiko K et al reported that congenital nasolacrimal duct obstruction in Japanese infants had a 82.9 % resolution rate with conservative management before the first year of age. [9]

In our institute dacryocystorhinostomy was safe and successful in three out of four children with only one child requiring a repeat procedure. This result is comparable to that of other studies.

Hakin K et al concluded that dacryocystorhinostomy in children in experienced hands is a safe procedure achieving relief of symptoms in most cases particularly in absence of canalicular disease. [10]

CONCLUSION

Children with congenital nasolacrimal duct obstruction can be successfully managed with good outcomes. Probing is the treatment of choice for children less than four years of age with great success rates. Children with persistent symptoms after four years of age plus those presenting after four years of age are best treated with dacryocystorhinostomy.

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REFERENCES

1. Yeatts RP. Lacrimal Drainage System Surgery.in Principles and Practice of Ophthalmology Albert DM,JakobiecFA ,Azar DT,Gragoudas ES. 2000 WB Saunders company USA Vol 4,chpt 268, pp3556-3558.
2. Hanover SG. Outcome of probing for congenital nasolacrimal duct obstruction in older children. Am J Ophthalmol ;130(1),2000 :42-48.
3. MacEwena CJ, Younga JDH, Barrasa CW, Ramb B, Whiteb PS. Value of nasal endoscopy and probing in the diagnosis and management of children with congenital epiphora. Br J Ophthalmol 2001; 85: 314-318.
4. Maheshwari R. Results of Probing for Congenital Nasolacrimal Duct Obstruction in Children Older than 13 Months of Age. Indian J Ophthalmol 2005;53:49-51.
5. Deok Sun Cha, Hwa Lee, Min Soo Park, Jong Mi Lee, Se Hyun Baek. Clinical outcomes of initial and repeated nasolacrimal duct office based probing for congenital nasolacrimal duct obstruction. Korean J Ophthalmol 2010; 24(5) :261-266.
6. Paediatric Eye Disease Investigator Group. Primary treatment of nasolacrimal duct obstruction with probing in children younger than 4 years. Ophthalmology 2008 ; 115(3) : 577-584.
7. Kushner BJ. The management of nasolacrimal duct obstruction in children between 18 months and 4 years old. J AAPOS 1998 ; 2(1) : 57-60.
8. Katowitz JA , Welsh MG. Timing of initial probing and irrigation in congenital nasolacrimal duct obstruction .Ophthalmology 1987; 94(6) : 698-705.
9. Hirohiko K, Yasuhiro T, Shinsuki f, Kunihiko S, Masayoshi I. The rate of symptomatic improvement of congenital nasolacrimal duct obstruction in Japanese infants treated with conservative management during the first year of age. Clin Ophthalmol 2008;2 (2) : 291-294.
10. Hakin K, Sullivan T, Sharma A, Welham R. Paediatric dacryocystorhinostomy. Australian and New Zealand Journal of Ophthalmology 1994 ; 22 :231-235.

Table I : Patient Demographics

Age at presentation	Number
<6 months	51
6months-1 year	33
1-4 years	13
>4 years	3
Gender	
Male	47
Female	53
Laterality	
Unilateral	34
Bilateral	66

Table II :Clinical presentation of Congenital Nasolacrimal duct Obstruction

Presentation	Number(percentage)
Watering	100 (100)
Regurgitation on pressure over lacrimal sac	100 (100)
Mattering of the eyelids	100 (100)
Increased tear lake	100 (100)
Discharge	46 (46)
Acute dacryocystitis	15 (15)
Persistent dacryocystitis	22 (22)
Recurrent conjuctivitis	35 (35)
Congenital dacryocystocele	None

Table III: Management of Congenital Nasolacrimal duct Obstruction

Management	Number (percentage)
Massage	100 (100)
Topical antibiotics	100 (100)
Probing	37 (37)
Repeat Probing	9 (9)
Probing with silicone intubation with inferior turbinate infracture	2 (2)
Dacryocystorhinostomy	4(4)

Table IV: Outcome of all procedures

Procedure	Outcome [Successful cases/ all cases (percentage)]
Massage with antibiotics	60/100(60)
Probing	26/37 (70.3)
Repeat probing	7/9 (77.8)
Probing with silicone intubation and inferior turbinate in fracture	1/2 (50)
Dacryocystorhinostomy	3/4 (75)