

Management and Presentation of Congenital Nasolacrimal Duct Obstruction

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ABSTRACT

Aim: To review the presentation of congenital nasolacrimal duct obstruction and the results of probing and conservative treatment.

Study design: A Prospective observational and comparative study.

Place and duration: In the Ophthalmology Unit-I of Bahawal Victoria Hospital, Bahawalpur for one year duration from January 2018 to December 2018.

Methods: 100 eyes of 80 children were examined. Into two groups, the children were divided. Group 1 included children up to 6 months. Initially, they were managed conservatively with topical antibiotics and massage. In the second group, children from six months to 3 years were selected. All were treated conservatively, but did not respond, so they were done with probing.

Results: In the first group, 83% of 25 patients with affected 30 eyes recovered with conservative treatment. In the second group, 87% of the 70 affected children responded to the first probing, 9% responded to the second probing, 4% did not respond despite the third time of probing. Overall success ratio was 97% in both conservative and catheter treatment.

Conclusion: Most children with congenital nasolacrimal duct obstruction relieved with conservative treatment. In the remainder of the cases that are unsuccessful, most of the children are done with probing successfully.

Keywords: Conservative treatment, congenital nasolacrimal duct obstruction, probing.

INTRODUCTION

Congenital obstruction of the nasolacrimal duct (NLD) is found in 5-7% of healthy neonates. It is because of canalization failure or the membrane persistence at the nasolacrimal duct in the lower end. The epiphora and sticky discharge come under pressure on the lacrimal sac or pussy discharge on lacrimal sac compression confirms the diagnosis¹. However, congenital glaucoma and other causes of epiphora should be excluded in neonates. Although congenital NLD obstruction may cause distress to both the parents and child, fortunately, there is a high spontaneous resolution rate in the first months of life. Most of the cases who do not settle down respond to conservative treatment with topical antibiotic drops and lacrimal sac massage². In most of the cases, the reason for the conservative treatment failure is an improper lacrimal sac massage technique. NLD probing is required for non-responders. Under GA, the Probing was done and it is beneficial to do research at the highest point in order to avoid unintentional damage to the lowest point of NLD and the canaliculus³. In dacryocystitis with acute phase, the probing is contraindicated because it can damage the inflamed and edematous mucosa and cause fibrosis and stenosis⁴. In a very small number of cases, the probing may not even provide a permanent NLD obstruction relieve. In such cases, the lacrimal passage is intubated with silicone tube of necessary to relieve obstruction permanently⁵. The purpose of this analysis was to demonstrate the nasolacrimal duct obstruction presentation and the results after conservative treatment and probing.

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MATERIALS AND METHODS

This prospective observational and comparative study was held in the Ophthalmology Unit-I of Bahawal Victoria Hospital, Bahawalpur for one year duration from January 2018 to December 2018. The approval of the study was taken from ethical and institutional review boards. In 80 patients, 100 total eyes were treated. Into two groups, children were divided in terms of management depending on the presentation age. The patients were conservatively managed in Group 1. In Group 2 subjects, under general anesthesia probing was opted as treatment. The inclusion criteria in the first group patients were children who did not have major comorbidity or systemic disease and who were of 1 to 6 months of age and their NLD obstructed. In the second group, the inclusion criteria for patients was age limit of between 6 months and 3 years, not received any conservative and preventive treatment, without systemic pathology or accompanying major comorbidity but only NLD obstruction. A careful and detailed history of the complaints presented was received. The previous treatment history and family history of disease were recorded. A detailed examination was made to exclude the systemic and ophthalmological causes of watering. The children in Group 1 were conservatively treated with topical antibiotics and proper lacrimal massage. For minimum 3 months, follow-up and observation and was continued. The probing was done in patients who did not settle down with conservative management after 6 months. In Group 2 patients, conservative treatment was given elsewhere. The probing was done under general anesthesia in all of these affected eyes. The probing was made from superior canaliculus and was confirmed by another metal probe in

the inferior meatus of the nose. On the same day, all patients were discharged and were followed up after the 15th, 45th and 90th days of management in both groups. Parents were instructed to continue with lacrimal massage and topical antibiotics drops (tobramycin) even after the successful test until the next visit.

RESULTS

In this study, 100 eyes of 80 patients were evaluated. Of these, male were 50(63.02%) and females were 30(37.08%). In 20 (25.35%) had NLD obstruction on both sides and unilateral obstruction in 60(75.65%) of cases. The epiphora was noted in 10 (14.3) children and purulent discharge in 70 (84.82%) patients. Group I: In this group, 23(29.01%) children were selected. Initially, the patients were treated conservatively in this group with topical antibiotics and proper lacrimal massage. Of these 23 children, 15(64%) were male and female were 8(36%). 19(80%) cases had one sided obstruction and bilateral NLD block in 4(20%). The results of group 1 cases after 90 days of follow-up are given in Table 1.

Table 1:

Procedure	No. of eyes	Successful	Failed
Conservative	29	24(82.99 ^A)	0
Probing (after 6 months of age)	04	4(100%)	0

Group II: In this group children of ages of 6m and 3 yrs were selected with number 57(69.9%). 3(63.93%) were male patients and women were 21(36.71%). The unilateral obstruction was noted in 43(76%) patients and bilateral obstruction in 14(24%). 34(48.6%) of the patients had right eye and 36(51.4%) had left eye involvement. Conservative treatment was performed elsewhere before referring to all patients in this group. They were all sent for probing under GA. The result of the probing treatment at the last follow-up day is shown in Table 2.

Table 2:

1 st probing	No. of eyes	Successful	Failed
1 st probing	67	62(87.65%)	8(13.01%)
2 nd probing	10	5(65.99%)	2(32.95%)
3 rd probing	03	0	03(100%)

Thus, 67 total eyes were improved in the second group. The success rate was found of eyes in which the first probing was 87.1% after a survey and 66.7% after the second survey (Table 3).

Table 3: Age wise results of successful probing:

Age in months	n
06-10	32(45.08%)
11-15	18(27.94%)

Patients were guided to continue with lacrimal massage even after probing, and residual symptoms were settled down in some cases and the probing was performed under GA. In 60(84.23%) cases, while passing probe, resistance was noted with a sudden release sensation due to lower

end of the nasolacrimal duct membrane puncture. In 8(11.4%) patients, continuous resistance to the nasal cavity was observed along the nasolacrimal duct. The test did not show any major complications. During the probing, minimum bleeding was recorded in 19% of the cases.

DISCUSSION

Congenital obstruction of the nasolacrimal duct (CNLDO) is a common disease of the lacrimal system. It is usually caused by failure of sewerage of epithelial cells forming a nasolacrimal duct at the nose (Hasner valve) 6. Characteristic features include excessive tear lake, tear overflow on the eyelids and cheek, and backflow of the mucoid material that occurs in the lacrimal sac. We studied 100 eyes of 80 patients. Twelve (14.8) cases presented with epiphora. The remaining 85.2% showed an increase in the lacrimation with mucopurulent discharge. Of the 80 patients, 50 (63.02%) were male and 30 (37.08%) were female. Sixty-two (76.5%) unilateral obstruction and 19 (23.5%) had bilateral obstruction. In addition, while 71% of the patients were unilaterally and 29% were bilaterally involved. In our study, success rate with conservative treatment was 83%. If done properly, it is slightly less than the spontaneous canalization reported in approximately 95% of patients receiving conservative treatment. In our study, some of the reasons of low success rate for conservative treatment are ignorance, poor compliance, improper massage technique and fear of trauma to the eye during massage⁸. In the second group, the probing was applied because they did not respond to conservative treatment. 61 of the 70 eyes (87.1%) responded to the first probing. Nine (12.9%) cases were considered for second probing⁹. In three of these patients the obstructions was not alleviated by third probing and were included in the group treated with DCR by intubation. In successful cases, most patients are 7-9 months old. In our study, we observed that the success rate of the probing decreased as age increased, especially beyond 14 months. Beyond 2 years, 100% is the failure ratio¹⁰. Stager et al. showed 95% success in patients younger than 10 months of age. The success rate in children older than 9 months has decreased to 84%¹⁰. Other studies have shown that the risk of failure of the probe increases with age. The delay in the survey after 12 months is associated with a drop in success rate, as indicated by Katowitz and Welsh¹¹. The results of the study after 18 months are relatively poor as observed by Havins and Wilkins¹². In contrast, various analysis have shown success in screening in children up to 5 years of age.

CONCLUSION

Congenital obstruction of the nasolacrimal duct is a common pediatric pathology observed in ophthalmologic patients. In these cases, conservative treatment is very effective with topical antibiotics for the eyes and lacrimal sac region massage. We suggest that parents should be guided appropriately for conservative treatment and that lacrimal sac massages should continue in patients who do not improve with proper continuous conservative treatment.

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