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Outcome of Syringing and Probing In Congenital Nasolacrimal Duct Obstruction in Children above Two Years of Age: A Prospective Study.

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ABSTRACT

Background: Congenital Nasolacrimal duct obstruction (CNLDO) is one of the most common problems in the pediatric age group. It is the commonest cause of childhood epiphora. In most cases it is caused by incomplete canalisation of the nasolacrimal duct (NLD). Aim: The present study was conducted to determine the success rate of primary nasolacrimal duct probing in children older than two years of age. **Methods:** The present prospective study was conducted in the post graduate department of ophthalmology, Sher-i-Kashmir Institute of Medical Sciences and hospital Bemina. Fifty two eyes of forty two children underwent probing and syringing for nasolacrimal duct obstruction under general anaesthesia. Follow up was done at first week, fourth week and three months. Success was defined as complete absence of sign and symptoms. Statistical analysis was performed using SPSS version 17.0. P value of less then 0.05 was considered significant. **Results:** Success rate of S&P in our study was found to be 94.23 %. Simple obstruction was encountered in 44 (84.61 %) eyes and all resolved successfully post S&P. Complex obstruction was encountered in 8 (15.39%) eyes and only five resolved successfully post S&P giving a success rate of 62.5 % only. **Conclusion:** late probing should be performed as an initial surgical step in the management of every case of CNLDO presenting late in the course of the disease (> 2 years), before more invasive procedures are attempted.

Keywords: Congenital Nasolacrimal duct obstruction, epiphora, probing.

INTRODUCTION

Congenital nasolacrimal duct obstruction is a very common problem in pediatric age group. It is present in up to 30 % of newborn infants.[1,2] The cause of obstruction in most cases is incomplete canalisation of the NLD at the level of valve of hasner.[3] The optimum age of syringing and probing as a treatment modality for persistent CNLDO is between 12 to 18 months,[4] as spontaneous resolution occurs in 80 to 96 % of affected infants by one year of age.[2,5]
However in our clinical practice we found that many children present late in the course of the disease (> 2 years) with symptoms of CNLDO. This could be attributed to lack of proper treatment received, wrong method of sac message, poor patient Compliance, illiteracy and poverty. The present study was conducted to evaluate the success rate of primary nasolacrimal duct probing in children greater than 2 years of age where many authors believe the procedure has a low success rate.[6,7]

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MATERIALS AND METHODS

The present hospital based prospective study was conducted in the post graduate department of ophthalmology Sher-i- Kashmir institute of medical sciences and hospital Bemina which is a tertiary care hospital .The study was undertaken after obtaining approval from ethical committee. Informed consent was obtained from all parents before enrolling their children for study. The study was carried out in accordance with the code of ethics of the world medical association (Declaration of Helsinki) for experiments involving humans. 52 eyes of 42 children underwent probing and syringing under general anaesthesia.

Exclusion Criteria included:-
Age < 2 Years.
Past history of lacrimal Duct Surgery or any other invasive procedure

Craniofacial abnormalities.
Abnormalities of the eye lids.
Diagnosis of CNLDO was based on history of watering and discharge from eye since birth or first few weeks of life. Clinically regurgitation of fluid or pus on pressing the sac area with or without swelling was considered confirmatory.

Procedure:

Probing was done under General Anaesthesia, after dilatation of the upper punctum with nettle ship punctum dilator [Figure 1] a bowmans probe was introduced in to the canaliculi until medial wall of the lacrimal fossa was felt [Figure 2]. The probe was then slightly withdrawn and rotated upwards 90 degrees in the same plane and advanced down the NLD and inferior meatus. The probe was left in place for one minute and then removed .This was followed by syringing [Figure 3] and detection of flourescein stained fluid in the nasal orifice.
A simple CNLDO was defined as a membranous obstruction at the end of NLD that was overcome without much obstruction or absence of resistance during probing. In complex CNLDO a gritty sensation (sand paper like) was felt while passing the probe through the NLD.
Follow up was done on one week, fourth week and three months. Success was defined as complete absence of sign and symptoms. . Statistical analysis was performed using SPSS version 17.0. P value of less than 0.05 was considered significant.

RESULTS

52 eyes of 42 patients were included in our study. Most of the cases (80.77 %) were unilateral. 52.38 % were boys and 47.62 % were girls. Mean age of the study group was found to be 2.62 years range 2 to 3 years. Success rate of syringing and probing in our study was found to be 94.23 %. Simple obstruction was encountered in 44 (84.6 %) eyes and all resolved successfully post syringing and probing .Complex obstruction was encountered in 8 (15.39%) eyes and only five resolved successfully post syringing and probing giving a success rate of 62.5 % only [Table I]. The cure rate was significantly different (P value < .001) between simple and complex type of obstruction. Sex , bilateral or unilateral, right or left involvement did not have a significant impact on cure rate. Intra operative bleeding occurred in three cases in complicated type of obstruction which resolved spontaneously and did not affect the procedure .There was no significant difference in cure rates at one week follow up and three month follow up.

Table 1: Difference in Success Rates of Simple and Complex CNLDO.

Type Of Obstruction	Success Rate (%)
Simple CNLDO	100 %
Complex CNLDO	62.5 %

Table 2: Comparative Outcome Of Probing In Children Above 2 Years As Quoted By Different Authors.

Authors	Success Rate (%)
Young et al[8]	54.0 %
Sturrock et al[9]	42.0 %
Honavar et al[3]	97.1 %
Mannor et al[6]	80.0 %
Robb[1]	96.4 %
Zwaan[10]	93.0 %
Present study	94.23 %

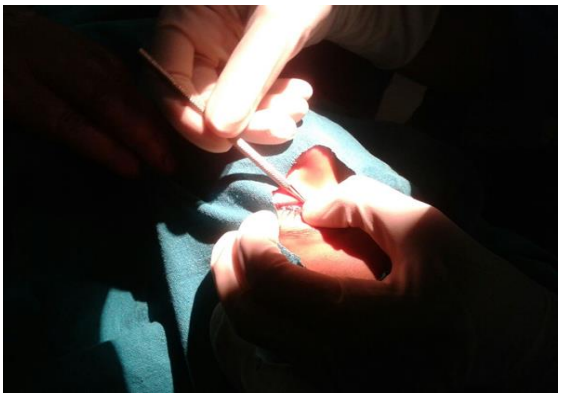

Figure 1: Showing Upper Punctum Dilatation

Figure 2: Showing Bowmans Probe Being Inserted Through Upper Canaliculi

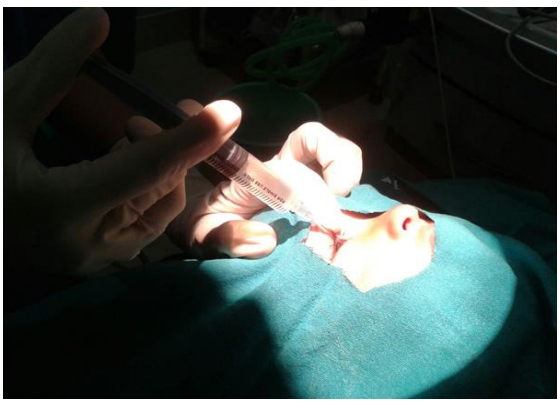

Figure 3: Showing Syringing Being Done At The Completion Of The Procedure.

DISCUSSION

Probing of the NLD is a time proven, standard therapeutic procedure in the management of CNLDO. Controversy however exists regarding the outcome of probing in children > 2 years of age. In our study we decided to do primary probing in these older children as an alternative to more invasive procedures like silicon tube intubation, endoscopic dacryocystorhinostomy (DCR) or external DCR which are more invasive procedures as compared to a simple syringing and probing procedure.

Young and associates stated a cure rate of 54 % in children > 2 years of age and Sturock et al reported a success rate of 42%.[8,9] In sharp contrast to these reports Robb et al (96.4 %),[1] Zwann et al (93 %),[10] Mannor et al (80 %) and Honavar et al (97.1%) success rates in late and very late initial probing.[3,6] Our study tends to agree with the latter group of author. We report a success rate of 94.23% (Table 2). However the success rate was 100 % in simple type obstruction and only 62.5 % in complex type obstruction, the difference being statistically significant (P value < 0.001). This high success rate could also be due to the fact that most of these children never got the proper treatment at the proper time as they presented late in the course of the disease. These patients had not practiced any sound therapeutic treatment before presenting to us. Statistical analysis showed the significance of complex obstruction and insignificance of increasing age in the failure of initial probing in older children. However one of the limitations of our study was that number of patients with complex type obstruction was small so to find out whether patients with complex CNLDO have the same cure rate in early, late and very late probing a multicentre prospective study should be done.

CONCLUSION

Late probing should be performed as an initial surgical step in the management of every case of CNLDO presenting late in the course of the disease (> 2 years), before more invasive procedures are attempted Contrary to conventional teaching it carries an excellent prognosis.

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