

Comparative Study of Results of Probing and Syringing at Different Age Groups

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ABSTRACT

Objectives: Aim of the study was to know the results of primary probing and syringing up to the age of ten years before going to perform other procedures. **Materials and methods:** A prospective, multicenter study was done on 113 eyes of 84 children with congenital nasolacrimal duct obstruction during a period of three years. Primary probing and syringing were done starting at the age of 10 months onward up to the age of ten years under general anaesthesia. Patients were divided into three age groups. Group= A less than three years, Group= B three to six years, Group= C six years to ten years. Results were compared. The study was conducted at AL_Khidmat Teaching hospital Mansoor Lahore and Lateef Hospital Okara. Repeat probing was performed when primary probing failed up to the age of six years. **Results:** Success rate was 98.64% in group = A, 91.66% in group = B patients and 73.33% in group = C patients. Success rate decreases with increasing age but still it is highly preferable to other invasive procedures such as silicone tube intubation or dacryocystorhinostomy. Failure rate was 1.35% in group one, 8.33% in group two and 26.66% in third group. Success in treatment was defined as complete resolution of tearing and discharge in the affected eye. **Conclusion:** Primary probing should be the first choice of treatment in congenital nasolacrimal duct obstruction even to the age of ten years. Success rate although higher in children less than three years a very good percentage can be cured above three years with probing syringing as first line of treatment.

INTRODUCTION

Congenital obstruction of nasolacrimal duct occurs in 2-6% of infants.¹⁻³ Spontaneous resolution occurs in 80-96 % of affected infants by one year of age. Resolution after one year of age is reported.⁴⁻⁶ Failure of canalization of nasolacrimal duct leads to epiphora and recurrent infection. The timing of probing has long been a controversial topic. Those in favour of early probing argue that it negates the need for general anaesthesia. Another argument in favor of early probing is the greater success rate. Persistent obstruction of the drainage apparatus is thought to lead to scarring due to recurrent inflammation and infection. However conservative management until 9-12 months of age is acceptable in majority of centers. Intubation with silicone tube is performed only after the probing fails twice. However primary intubation was found

to be successful in older patients. There are also different views regarding the time of paediatric dacryocystorhinostomy. Hydrostatic pressure (Crigler method) was used by many up to the age of 32 months.⁷⁻⁹ Other found primary intubation with silicone tube or just after primary probing to be successful.¹⁰⁻¹² The aim of this paper is to study the results of probing as a primary procedure to the age of ten years.

MATERIALS AND METHODS

A prospective study was done at two centers namely AL-Khidmat teaching hospital Mansoor Lahore and Lateef Hospital Okara on 113 eyes of 84 patients of congenital nasolacrimal duct obstruction. The diagnosis was based on the history of watering from eye since birth or during the first few weeks of life. Stickiness of the lids was often present due to

infection. The initial examination included looking for the punctual, anomalies of the lid or face. Allergy or infection of the conjunctiva was ruled out. Children were treated conservatively with sac massage to the age of one year preferably. Few cases were treated after ten months of age because of patients demand. Mucopurulent discharge present was treated first with antibiotic drops for one week atleast and after that probing and syringing were done under general anesthesia. Probing was performed with straight irrigating solid metal rods of three sizes, one of which usually suits to a child. These types of probes are good invention in the sense that we can perform probing and syringing in a single step without retrieving it completely from nasolacrimal duct. It also helps in clearing the nasal cavity and the nasolacrimal duct from blood immediately. It also saves the time.

Punctual dilatation was done first with punctum dilator. Probing was performed through lower punctum. Antibiotic ointment usually tobramycin was used to lubricate slightly the probes and a 10cc syringe filled with distilled water was attached to the probe. Lower punctum was everted with finger and the probe passed through the canaliculi until hard stop at medial wall of the lacrimal fossa was felt; at this point it was turned and pushed downward, backward and laterally in the nasolacrimal duct. Now it will become engaged in the bony nasolacrimal canal and can be easily appreciated as lateral movement of the probe cannot be done. After that pushing down it slightly one can feel a membranous obstruction if present. A little force is sufficient to push it further into the nose. The probe then retrieved from the nose and simultaneously irrigation performed. The anaesthetist was asked to suck the fluid at the same time. 5-10 cc of fluid is sufficient for irrigation. The patient was sent home after three hours of stay in hospital. Topical antibiotics were given for 10 days. The patients were called up for review after ten days. Repeat probing syringing was done in failure of the symptoms to improve after three weeks only in group- 1 and group- 2 patients.

RESULTS:

The results were divided into three groups.

Group- A consists of children less than three years of age, group- B consists of children 3-6 years of age and group- C are children from 6-10 years of age (Table 1).

Table 1: Age wise distribution.

| Age group | < 3 Year (A) | 3-6 Years (B) | 6-10 Years (C) |
|-----------------------|--------------------|---------------------|----------------------|
| No. of eyes operated | 74 | 24 | 15 |
| Success | 73 | 22 | 11 |
| Percentage of success | 98.64% | 91.66% | 73.33% |
| Failure | 1 | 2 | 4 |
| Percentage of Failure | 1.35% | 8.33% | 26.66% |

Table 1 gives age wise distribution and the results of probing. There are three age ranges: <3 years, 3-6 years and 6-10 years. We have considered number of eyes and not the number of patients because the probing may be successful in one eye and probing may fail in second eye. The overall success rate is 90.26% in all three groups. Success was defined as complete resolution of symptoms such as watering and discharge. With increasing age the success rate decreases. Even then quite a good %age of children get cured. In group-A success rate is 98.64%, in group-B it is 91.66% and in group-C success rate is 73.33%. One patient probing syringing failed in group one, two patients were not cured in group two and in third group four cases were unsuccessful.

Majority of studies advocate probing from upper punctum just to save the lower passages from trauma as it is the major pathway of tear drainage. In our study all probings were done through lower punctum and no damage was found. It may be the result of use of antibiotic ointment which acts as emollient as well.

DISCUSSION

The lacrimal drainage system is formed as a depression termed lacrimal groove at approximately 6 weeks of gestational age. A solid cord of ectoderm is buried and canalization of the cord begins at approximately 3.5months and is usually complete at birth. Failure of the canalization of the nasolacrimal

duct may occur leading to epiphora. Probing and syringing is the main form of treatment. Spontaneous resolution occurs in majority of infants. Timing of probing is controversial but it is acceptable not to delay after one year of age. We treated patients conservatively to the age of 10 months to one year and then probing and syringing was performed under general anaesthesia in all cases. Due to fear from treatment or lack of education parents of children were still coming late even to the age of ten years. Because primary probing was not done earlier we considered it first in all cases coming after three years even. We achieved a high rate of success in late cases as well. Two types of obstruction were encountered during this procedure, simple and complex. In simple obstruction there was a feeling of membrane which was easily overcome by probing. In complex obstruction a firm resistance to the passage of probe was observed that cannot be bypassed. The most common site of obstruction is at the lower end of the nasolacrimal duct.

Different studies report different success rates but it usually varies between 80% to 98% in children < 3 years of age and 70% to 80% in children above 3 years of age.¹³⁻¹⁸ Nasolacrimal duct probing advocated as a primary treatment in children younger than 9 years of age before any other treatment has been tried with good success.¹⁹⁻²² Results of our study in group-A are 98.64%, in group-B 91.66% and 73.33% in group-C. A high rate of success in older children was encouraging. The cases which were failed were those with complex obstruction. When a firm obstruction comes it is advisable not to exert force because it will only produce bleeding. Membranous obstruction can be easily negated with probes whatever the age of the child may be.

CONCLUSION

Probing should be the primary form of treatment in all cases whatever the age of the child may be. Results of our study suggests that probing are successful in older children.

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