Original Article

Non Massaging Management of Congenital and Infantile Naso Lacrimal Duct Obstruction

Jamshed Nasir, Mueen Mohyuddin, Shahid A Bhatti

Pak J Ophthalmol 2007, Vol. 23 No.2

See end of article for authors affiliations

Correspondence to:
Jamshed Nasir
Fatima Memorial Hospital
College of Medicine & Dentistry
Shadman, Lahore

Received for publication
August' 2006

Purpose: To evaluate non massaging management of congentical and infantile nasolacrimal duct obstruction.

Material and Methods: Forty infants were divided in two groups. Group A followed the conventional procedure of massage of lacrimal sac, whereas group B had usual advisable management for the congential nasolacrimal obstruction except the massage of naso lacrimal sac. Both groups were followed for eight months.

Results: After eight month followup nasolacrimal obstruction was resolved in 90% of patient in group A and in 95% in group B. 10% of patient in group A and 5% of patient in group B required probing of the nasolacrimal duct.

Conclusion: Non massaging management of nasolacrimal obstruction is as effective as massaging of lacrimal sac but it also ovoids certain complications.

Congenital and neonatal epiphora is a common presenting feature generally referred by pediatrician in the out door clinic. The condition usually resolve in less than eighteen months of age but causes lot of discomfort and worry to the young parents who are inexperienced and apprehensive about their new born babies. A better understanding of the problem by the parent and relatives can avoid unnecessary stress but also can give good results with minimum tissue handling of a newborn baby who are very fragile at that age. Epiphora in this age group could be due to multiple reasons like dacryostenosis, punctal and canalicular atresia and sac diverticula. Congenital Naso Lacrimal Duct (CNLD) obstruction being the commonest of all is usually due to non canalization of the lower end of nasolacrimal duct where auto canalization as a rule should normally occur during eighth month of gestation which in some cases is delayed till or after birth. Post birth auto canalization occurs in majority of cases leaving a few cases to be handled with surgical probing. Auto canalization takes place any time from birth to one year of age varies from patient to patient and is independent of any maneuver like massage as is shown from this study. The auto canalization if for some reason does not take place in one year time usually requires surgical intervention and responds well to simple and single probing. The condition has an incidence of 6% with disappearance of symptom with or without surgical management in approximately 95% of cases as is proved with various studies. Massage is thought to be a useful maneuver and tool in the management of CNLD obstruction and is associated with certain discomfort for the patient and parents. Repeated massage is associated with local tissue reaction, skin ulceration along with infection & cellulitis of the skin and lacrimal sac. In rare cases the infection can travel into the orbit producing devastating complications. To avoid these discomforting state and the risk of infection and to make the procedure a simplified one, this study was carried out at Fatima Memorial Hospital Lahore

between 2004 and 2006 when a non massaging management of the CNLD obstruction was compared with the usual massaging CNLD obstruction management (the conventional method).

MATERIAL AND METHOD

The study comprises of prospective and randomized forty infants with epiphora divided equally into two groups. The study period for an infant was eight month after that the infant was either discharged upon cessation of symptoms or managed with probing. The selection criteria included healthy infants referred for epiphora by the pediatrician. The ophthalmic examination was carried out for any associated pathology, which in case of positivity was excluded out of the study. The patency of lacrimal system was assessed indirectly with the dye disappearance test out of the conjunctival sac. Cases with pure CNLD obstruction were picked up and placed in two groups. Group A included infants who followed the usual procedure of massage and observation with or without use of antibiotic if needed and the other group B was observed for any sign of inflammation which in case treated promptly but were not advised any massage of the lacrimal sac or tissue handling of the lacrimal system. These infants were examined for the first time in the out door from birth to two months of age depending upon their first presentation at the clinic, subsequently followed up after one month of initial examination and then every second month till a period of eight months is completed when they were discharged from the clinic. The patient visits were divided into five visits from age 0-8 months of age.

RESULTS

A total of forty infants were included in the study with each group containing twenty infants and were followed up till the end of the study. Patient fall out was zero as all the patients completed the study. The male to female ratio for group A was 2:3 (40% to 60%) while that of group B was 9:11 (45% to 55%). As is shown in the study the success rate of group B was better than group A. Two cases (10%) in group A at the end of eight months continued to have epiphora whereas eighteen cases settled with the massage management (90%) as compared to one case (5%) in group B which continued to have epiphora and required further management whereas nineteen cases (95%) settled by itself without any lacrimal massage.

Two cases (10%) in group A and one case (5%) in group B who did not improve with the conservative management and required surgical probing under general anesthesia. They improved after single non irrigational probing under general anesthesia. The pattern of disappearance of epiphora also shows variability in the two groups with majority of the cases in this study having settled before the age of four months. 12 patients (66%) in group A and 11 patients (55%) in group B settled before the age of four months how ever they completed their visits with regular follow up till the end of the study. The remaining 6 patients (33%) in group A and 8 patients (42%) in group B settled before the end of the study period which was eight months. Success rate in group A was 90% with over all failure rates of 10% while that of group B was 95% with over all failure rates of 5% only. Eighteen infants in group A and Nineteen infants in group B at the end the study period of eight months settled without any surgical intervention. Dry non irrigational probing required in two cases in group A and one case in group B at the termination of the study period which were successful as a primary procedure and did not require any further management.

Table 1: Consultation and Visit Plan for the study

First Consultation	0-2 months of age
Visit 2	2-3 months of age
Visit 3	2-4 months of age
Visit 4	4-6 months of age
Visit 5	6-8 months of age

DISCUSSION

Congenital nasolacrimal duct obstruction (CNLD) is a common clinical condition often referred to ophthalmologist from pediatrician. The condition generally settles down in time. Conventionally it has been taught that massage of the lacrimal sac for CNLD obstruction is an important key for a successful outcome. There is little doubt with this statement but is the massage of lacrimal sac really necessary for a successful out come. Massage of lacrimal sac for CNLD obstruction is not free from complications like skin ulceration, skin roughening, and infection of the overlying skin, conjunctiva and dacryocystitis. In rare cases orbital cellulitis has been reported. Improper and exertional massage is associated with number of

complications and discomfort for the infant. In this study a comparison is done between two group one following the usual teaching of lacrimal sac massage and use of antibiotic eye drops in case of infection and the second group followed the same procedure but was not allowed to do the massage of the lacrimal sac. The thick discharge collected in the eye corner were advised to be cleaned on regular basis and use of antibiotic eye drops were reserved for eyes showing sign of infection. The end results of the study showed that non massaging management proved to be more successful (95%) than the massaging management of CNLD obstruction (90%). Minimum tissue handling can avoid certain complications to which these new born babies are quite susceptible to in that age group.
Parent reassurance and better understanding of the problem, with proper hygiene and minimum tissue handling can give better results.

Table 2: Group A (with Lacrimal Massage)

Description	Cases n (%)
Total Number of cases	20 (100)
Male	08 (40)
Female	12 (60)
Patient fall out	00 (0)
Success after eight months	18 (90)
Symptoms persisted after eight months	02 (10)
Success after four months	12 (60)
Cases requiring Lacrimal Probing	02 (10)

Table 3: Group B (with Lacrimal Massage)

Description	Cases n (%)
Total number of cases	20 (100)
Male	09 (45)
Female	11 (55)
Patient fall out	00 (0)
Success after eight months	19 (95)
Symptoms persisted after eight months	01 (05)
Success after four months	11 (55)
Cases requiring Lacrimal Probing	01 (05)

CONCLUSION

Congenital and infantile epiphora due to nasolacrimal duct obstruction generally follows auto canalization course from one month to eighteen months of age with maximum number of infants settling with this problem before the age of four months as is shown in the two groups in our study. Massage is not mandatory and fairly good results are obtained without lacrimal massage as is confirmed in our study. The need of the time is to make the parents understand about the auto canalization process in infants and better success rate can be achieved with minimum tissue handling.

Author's affiliation

Jamshed Nasir
Associate Professor
Department of Ophthalmology
Fatima Memorial Hospital College of Medicine & Dentistry, Lahore

Mueen Mohyuddin
Associate Professor
Department of Paediatrics
Fatima Memorial Hospital College of Medicine & Dentistry, Lahore

Shahid Bhatti
Senior Registrar
Department of Ophthalmology
Fatima Memorial Hospital College of Medicine & Dentistry, Lahore

REFERENCES

1. **Baker JD.** Treatment of congenital Nasolacrimal system obstruction, J Pediatr Ophthalmol Strabismus. 1985; 22: 34-6.
2. **Wagner RS.** Management of Congenital NasoLacrimal duct obstruction. Pediatr Ann. 2001; 30: 481-8.
3. **Kushner BJ.** Congenital Naso Lacrimal duct obstruction. Arch Ophthalmol. 1982; 100: 597-600.
4. **Busse H.** Connatal dacryostenoses. Clinical picture and treatment. Ophthalmology. 2004; 101: 945-54.
5. **Ingels K, Kestelyn P, Meire F, et al.** The endoscopic approach for congenital NasoLacrimal duct obstruction. Clin Otolaryngol. 1997; 22: 96-9.
6. **Lim CS, Martin F, Beckenham T.** Nasolacrimal duct obstruction in children: outcome of intubation. J AAPOS. 2004; 8: 466-72.
7. **McNab AA.** Congenital absence of the NasoLacrimal duct. J Pediatr Ophthalmol Strabismus. 1998; 35: 294-5.

8. **Paul TO, Shepherd R.** Congenital NasoLacrimal duct obstruction: natural history and the timing of optimal intervention. J Pediatr Ophthalmol Strabismus. 1994; 31: 362-7.
9. **Sevel D.** Development and congenital abnormalities of the NasoLacrimal apparatus. J Pediatr Ophthalmol Strabismus. 1981; 18: 13-9.
10. **Welham RA, Hughes SM.** Lacrimal surgery in children. Am J Ophthalmol. 1985; 99: 27-34.
11. **Wagner RS.** Natural History of Nasolacrimal Duct Obstruction Pediatrics in Review March 1989.
12. **Ghuman T, Gonzales C, Malcolm L et al.** Mazow, Treatment of Congenital Nasolacrimal Duct Obstruction, Am Orthopt J. 1999; 49: 161-6.
13. **Kim YS, Moon SC, Yoo KW.** Congenital NasoLacrimal duct obstruction: irrigation or probing? Korean J Ophthalmol. 2000; 14: 90-6.