Original Article

Timing of Closed Intubation in Recurrent Epiphoric Children

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Purpose: To determine the most appropriate time for closed intubation in recurrent epiphoric patients.

Material and Methods: This was an interventional retrospective study which was conducted in the Eye Unit II, Institute of Ophthalmology, Mayo Hospital, Lahore, from January 2005 to January 2011. We performed closed intubation in 200 children up to four years of age, where syringing and probing failed twice at least. All patients were closed intubated with Crawford Silicon Tube under general anaesthesia. Epiphora and discharge was noted pre and post operatively at 1 month, 3 months and 6 months follow-up.

Results: In this study there were 111 males and 89 females ranging from 1 to 4 years of age. In these 200 cases, 172 were relieved from epiphora and discharge while 28 patients had persistent epiphora. Failure as compared to age presentation observed during this period was as follows; 20 (71.4%) in 3-4 years of age; 6 (22.2%) in 2-3 years of age; 2 (7.4%) in 1 – 2 years of age.

Conclusion: Closed intubation with silicon tube is an effective treatment modality for children of age between 1 to 4 years.

Lacrimal drainage system obstruction may be present in approximately 50% of newborn infants congenitally. Mostly obstructions opened spontaneously within 4 – 6 weeks after birth. The newborn with epiphora presented at 3 – 4 weeks of age, mostly unilaterally and sometimes bilaterally. Approximately 90% resolved within 1st year of life, with or without massaging or topical antibiotic drops. If epiphora persisted, then probing and syringing was optional, non-invasive treatment. But some children present again with epiphora and discharge. And the next option remains the eternal DCR or the closed intubation. The aim of our study was to avoid the external DCR and relief of symptoms of epiphora and discharge with closed intubation in children up to 4 years of age.

MATERIAL AND METHODS

This was an interventional retrospective hospital based study. Patients were selected from the outpatient department of Mayo Hospital Lahore, KEMU. All 200 children up to 4 years of age who have had failed probing and syringing once or twice and presented with epiphora discharge and mucocele formation, were included in this study. Patients were given general anaesthesia. After draping both the puncti were dilated with punctum dilator. Then, probing and syringing was done up to the level of inferior opening of nasolacrimal duct into the inferior turbinate of the nose. Then Crawford Silicon Tube was passed through the same anatomical passage. Tube is appreciated in the nose then pulled from the nose with artery forceps. The same procedure was repeated from the upper punctum and both ends of Crawford Silicon Tube were tied in the nose. Patient was discharged on topical and systemic antibiotics and NSAIDs. Follow-Up was done at the interval of 1 month, 3 months and 6 months. Then the tube was removed under general anaesthesia after 6 to 8 months.

RESULTS

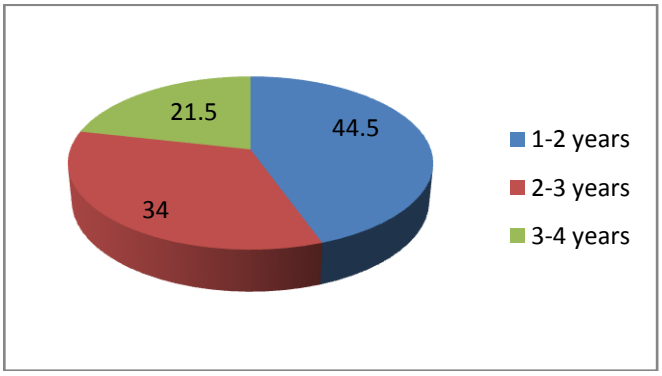
There were 111 (55.5%) male and 89 (44.5%) females.

The age range was 1-4 years. Among these, 89 (44.5%) were 1-2 years of age, 68 (34%) were 2-3 years of age, 43 (21.5%) were 3-4 years of age. Preoperatively all the children had epiphora and discharge with failed probing and syringing once or twice. Postoperative follow-up was done at the interval of 1 month, 3 months and 6 months, during which 172 (86%) had no epiphora and discharge whereas 28 (14%) presented with epiphora and discharge. Failure as compared to age presentation observed during this period was as follows; 20 (71.4%) in 3-4 years of age; 6 (22.2%) in 2-3 years of age; 2 (7.4%) in 1-2 years of age. Complication noted with silicon tube were, Cheese wiring of canaliculli and Pulling out of tubes.

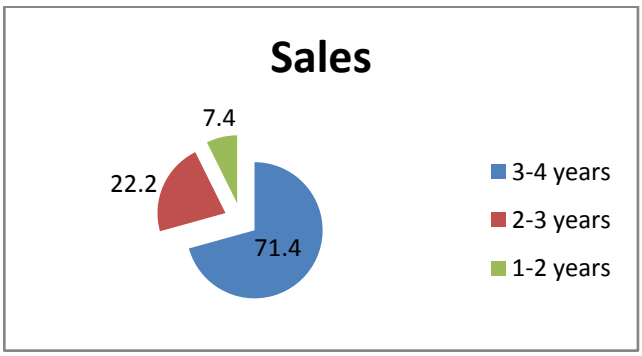
DISCUSSION

Congenital naso-lacrimal duct obstruction is a common congenital anomaly even in full term infants

Sex	No. of Patients n (%)
Male	111 (55.5)
Female	89 (44.5)
Total	200 (100)



Presenting age chart



Failure age ratio chart

Fig. 1: 1st post op day.

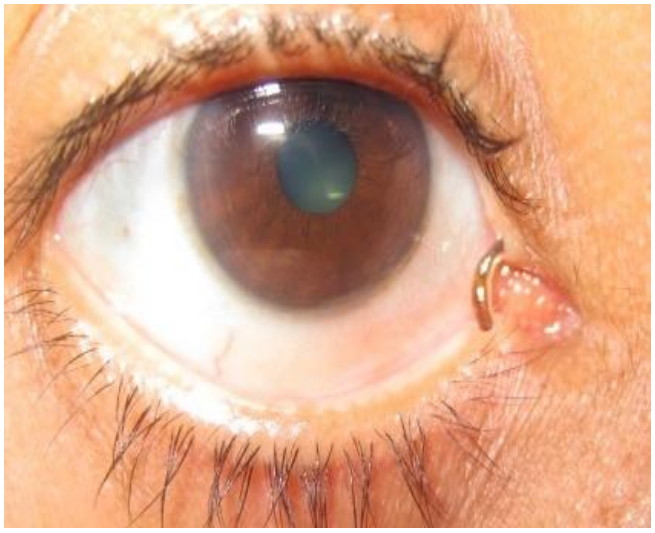


Fig. 2: After 3 Months.

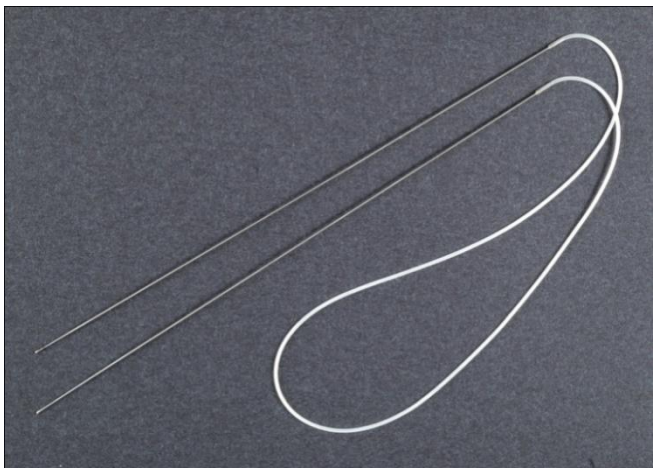


Fig. 3: Crawford tube with olive tip.

and is due to delay in the normal development of the system. Neonates have tear secretion at birth and 96% to 98% have a totally patent and functional drainage system at birth. The 2% to 4% who do not have an

intact lacrimal drainage system, have a thin residual membrane at the distal end of the naso-lacrimal duct.

This membrane dissolves spontaneously in 80% to 90% of infants within the first few months of life[1], either spontaneously or with medical treatment and massage[2-3]. The obstruction and the resultant continued tearing and discharge are not only unsightly and a potential source of ocular infection, it also causes a lot of anxiety to young parents who are inexperienced and apprehensive about their newborn babies[4]. In the majority of cases, the cause of failure of conservative treatment is an improper technique of lacrimal sac massage[5]. Surgical intervention in the form of probing and irrigation of the naso-lacrimal duct is required in the cases not responding to medical treatment and massage. We included the epiphoric children in our study where probing and syringing didn't work at least twice. The aim of our study was to avoid external DCR & relief of symptoms of epiphora and discharge with closed intubation in children up to 4 years of age.in our study out of 200 patients 111 (55.5%) were male while 89 (44.5%) were females. The age range was 1 – 4 years. Among these, 89 (44.5%) were 1 – 2 years of age, 68 (34%) were 2 – 3 years of age, 43 (21.5%) were 3 – 4 years of age. Preoperatively all the children had epiphora and discharge with failed probing and syringing once or twice. Postoperative follow-up was done at the interval of 1 month, 3 months and 6 months, during which 172 (86%) had no epiphora and discharge whereas 28 (14%) presented with epiphora and discharge. Failure to age ratio observed during this period was as follows; 20 (71.4%) in 3 – 4 years of age; 6 (22.2%) in 2 – 3 years of age; 2 (7.4%) in 1 – 2 years of age.

Other complication noted with silicon tube were

1. Cheese wiring of canaliculi
2. Pulling out of tubes

Probing of the naso-lacrimal duct is the first line of treatment. However probe failure increases with age and is known to double every 6 months. For this reason and in cases of persistent epiphora, a second probing two to four months later is advocated. In failed cases with persistent epiphora and recurrent infection, it may be necessary to perform a dacryocystorhinostomy (DCR) or closed intubation. In our study we did closed intubation in all cases with aiming to avoid the patients from major surgery of DCR.

In our study the success rate was 86% which is almost consistence with the studies done in the past. It is quiet safe and effective and the results are almost identical to DCR surgery. And the main thing is that there is no external scar.

CONCLUSION

Closed intubation with silicon tube is an effective treatment modality for children with age between 1 to 4 years. And it is also noted that as the age increases the failure rate increases.

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