

Rare presentation of an infant posted for syringing and probing: Anaesthetic implication.

*Manjula V Ramsali¹, Mohan S Maharaj², Gedala Nireesha³,
Mohana Rao Ambati²*

¹Professor, Department of Anaesthesiology, GVPIHC&MT, Visakhapatnam

²Senior Consultant, Medicover Hospital, Visakhapatnam

³Senior Resident, GVPIHC&MT, Visakhapatnam

Abstract

Nasolacrimal duct obstruction (NLDO) is a common condition among infants which may require probing at an early age to prevent complications. Infants presenting with NLDO might also be associated with other congenital anomalies which may require special anesthetic considerations. Here we report a case of five months old child with incidental finding of cleft palate posted for syringing and probing of nasolacrimal duct.

Keywords

Nasolacrimal duct obstruction, syringing and probing, cleft palate, congenital anomalies.

Introduction

Nasolacrimal duct obstruction (NLDO) may be present in approximately 50% of newborn infants.¹ The main cause of the occlusion of NLD is an imperforate membrane at the distal end of the nasolacrimal duct. The time at which tears may appear varies from one week to 12 weeks. However, it is advocated that early probing can prevent complications such as acute dacryocystitis, periorbital cellulitis, or possible inflammatory sequelae.² Late intervention also may lead to prolongation of symptoms which might affect the success rate of probing due to prolonged inflammation in the lacrimal system drainage.³ Early age group necessitates the requirement of anesthesia for the above procedure. Congenital NLDO may also be associated with other anomalies like Treachers Collins syndrome, Crouzons syndrome, cleft lip, cleft palate, bifid uvula and hemifacial microsomia making anaesthesia a challenging task.⁴

Address for correspondence:

Dr Manjula V Ramsali
Professor,
Department of Anaesthesiology,
GVPIHC&MT, Visakhapatnam
E-mail: manjularamsali@gmail.com

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Case Report

We report a case of five-month-old female infant weighing 4.5 kg with NLDO posted for syringing and probing. It was planned as day care surgery. During pre-anaesthetic evaluation there was no significant history. On examination, the infant was found to be active with vital parameters and systemic examination normal except for cleft palate, Figure 1. Baseline blood investigations like total blood picture, bleeding time and clotting time were within normal limits. We discussed with the surgeon about the presence of cleft palate. There was definite need for the early syringing and probing which requires short duration of general anaesthesia. Paediatric and cardiology consultation was taken to look for the other associated congenital anomalies with cleft palate and NLDO. The anaesthesia plan was to induce and maintain with sevoflurane, on spontaneous breathing with I-gel. Parents were briefed about the infant condition and the associated cleft palate and the anaesthetic plan and also high risk consent was taken.



Figure 1. Cleft palate defect seen in the infant during preoperative systemic evaluation.

Anaesthetic management

After 4 hours of nil per oral (breast milk) status, the infant was shifted to the operation theatre. ASA standard monitors like NIBP, SPO₂, ECG were connected, and baseline vital parameters were recorded. We had a problem in holding the anaesthesia mask due to the big size of the nasolacrimal cyst. This was taken care by gentle use of Randell baker soucek-the smallest size mask to fit the face, Figure 2. Anaesthesia was induced with “sevoflurane, oxygen, and air” with face mask and 24-gauge IV cannula was secured. Sevoflurane concentration was gradually increased up to 8%, I-Gel of size 1 was inserted and maintained on spontaneous ventilation with oxygen(2L) and air(3L), approximately 4% sevoflurane during the procedure to achieve 1.5 to 2 times minimum alveolar concentration. Only 0.5 ml of fluorescent dye was injected to do probing. Syringing was done with continuous suction through the nostril and probing was done successfully. Nasal suction in our case with cleft palate would have caused bleeding and so that part was carefully observed and used low suction pressure. Throughout the procedure, vital parameters were stable. At the end of the procedure anaesthesia was weaned off, and the infant was shifted to postoperative ward with complete recovery.



Figure 2. Randell Baker soucek mask

Discussion

NLDO is common in infants and may require intervention with syringing and probing.¹ As the presentation is always at an early age and the advantage of early intervention necessitates the requirement of general anaesthesia as compared to topical anaesthesia.² The presence of cleft palate is often associated with syndromes like Pierre Robin Syndrome, Stickler syndrome, Velocardiofacial syndrome, Van der Woude syndrome and related craniofacial and airway problems. Overall, the presence of associated syndromes may be challenging to the anaesthetist and requires special anaesthetic consideration for successful management of the case.⁴

Semi Perveen et al observed the success rate of syringing and probing in different age groups. They concluded that higher success rates were seen with intervention at an early age between 6 and 18 months of age. They also mentioned that success rate decreases with increasing age and age above 2 years is a predictor of poor outcome.^{3,5} The aim of sedation during probing is to immobilise the child and to avoid the physical discomfort, pain and the psychological trauma which may occur due to physical restraint which is required if the procedure is performed under topical anaesthesia. In case if syringing and probing was done with topical anaesthesia, then there is a requirement of three other assistants to immobilise the child and to stabilize the head. In addition, there is a possibility of physical and psychological trauma to the child.⁵

MacEwen et al attributed that probing under general anaesthesia reduces the risk of injury to the structures of the lacrimal system and decreases the apprehension of the parents and child.⁴ Many other authors also recommend probing under general anaesthesia as a safe option with better control over the procedure and helps in paying attention to the site and nature of the obstruction.⁴ Similarly in our case also as the child was sedated with sevoflurane, immobility of child was achieved quickly and was not cumbersome. Induction, maintenance and recovery were smooth without any adverse events.

For shorter and minor surgical procedures like syringing and probing sedation with inhalational anaesthesia would be a better option as compared to topical or general anaesthesia.⁷ Sevoflurane is a well-known and safe anaesthetic agent which is being used for more than 20 years. Sevoflurane is widely used in day care surgery due to its low blood gas partition coefficient which results in rapid uptake and fast elimination.⁸ Compared to desflurane and isoflurane, sevoflurane has been preferred as the agent of choice for induction due to its lack of airway irritation. Presence of a sweet odour and lack of pungency provides an added advantage to prefer sevoflurane in paediatric anaesthesia. General adverse events that may occur during recovery from sevoflurane sedation include nausea, vomiting, coughing, and agitation.⁹

In our case there were no significant adverse events reported in the intra operative and post operative period.

Sunder et al compared the use of laryngeal mask airway with conventional tracheal intubation with general anaesthesia for syringing and probing and concluded that laryngeal mask airway can be safely used in lacrimal duct surgery.¹⁰ We used I-gel which was a safer option to prevent the risk of aspiration and better control of ventilation than the topical anaesthesia. The vital parameters of the child remained stable throughout the procedure and no adverse events were reported in the perioperative period.

Conclusion

NLDO is a common condition in infants which require syringing and probing at an early age. Association with other congenital anomalies makes anaesthesia management challenging. Inhalational anaesthesia with sevoflurane preferring I-gel makes the conduction of anaesthesia easy and safe. Continuous nasal suctioning is mandatory while the syringing is being done.

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