Rhinologist’s Endoscopic Experience of Lower Lacrimal System Pathologies in Paediatric Patients

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Summary

Cases of congenital nasolacrimal duct block with unsuccessful blind probing were taken up for a repeat probing under endoscopic assistance. Membranes with a wide variation in thickness were found blocking the lower end of nasolacrimal duct. These cases were reported as having bony block on previous blind probing and could be successfully treated with endoscopic assisted probing.

Keywords: nasolacrimal Duct NLD, Inferior meatus, congenital nasolacrimal duct obstruction (CNLDO)

Introduction

Success of endoscopic assisted probing has been proven beyond doubt in a number of studies published so far. Anatomical success and functional success was noted in 97.8% and 94.7%, respectively, in simple congenital nasolacrimal duct obstruction (CNLDO). Previous study have shown that 15% patients would have failed probing had endoscopy not been employed, as the probe either did not perforate the nasal mucosa at all or in a fashion that was non-functioning. We hereby present our experience with some failed blind probing cases. Endoscopic evaluation of the site of block helped us to understand and rectify causes of failure in those cases. (Figure 1) Free edge of the right inferior turbinate is lifted and gently pushed medially to visualize the lower end of NLD. (Figure 2, 3)

Case 1

A 7 months old child presented with persistent epiphora following one blind probing. A bony block was reported as the cause of failure as per records. Endoscopic viewing of inferior meatus showed a membranous bulge over the right lower end of NLD. (Figure 4) On careful stepwise negotiation, the probe could be seen through the membrane. (Figure 5) The membrane was perforated with the probe and a sickle knife was used to complete the incision and release the obstruction. (Figure 6) Free flow of dye was seen through the restored NLD opening. (Figure 7) In most of the cases of blind probing, it is the misdirected probe that is difficult to negotiate into the inferior meatus due to lack of visualization. While an absolute bony block is not common in simple CNLDO cases, the probe hits the soft tissue bony junction of NLD and gives a false feeling of a bony block.

Case 2

Left nasal cavity of the same 7 month child was examined as a process of check syringing. Greenish dye was seen collecting under the membrane over the NLD. (Figure 8) No flow of dye was seen into the inferior meatus indicating a blocked passage. Membrane was cut using sickle knife and patency restored. (Figure 9)
Figure 3: Medial edge of Right inferior turbinate lifted off

Figure 4: Membranous bulge over right NLD opening in a 7 months old child

Figure 5: Probe seen coming out of the membrane

Figure 6: Sickle knife incision over the membrane

Figure 7: Flourescein dye under the inferior turbinate

Figure 8: Left nasal cavity in a 7 month old child with dye collection seen under the membrane
There was a history of previous successful blind probing as per records but NLD was found non-patent. It could be due to a false passage where the clinician could feel the probe going in and syringing was either not done owing to a short general anaesthesia in which airway is not secured or it was done with a minimal amount of fluid. This small amount of fluid may easily seep into the soft tissue and giving a false impression of a successful probing.

Case 3
8 months old child presented with persistent purulent discharge following previous blind probing. On nasal endoscopy, probe seemed to be hitting a bony surface. (Figure 10) On trying to manoeuvre it through into the nose, it created a false passage (Figure 11) as no flow of dye was seen on syringing. There was agenesis of the distal portion of the NLD and sac duct junction was seen on partial inferior turbinate resection. A nick was given over the sac duct junction and probe could be seen coming out of the junction of inferior turbinate with the lateral wall. (Figure 12)

Discussion
Mc Ewen et al documented that conventional probing is a blind procedure that has not changed significantly in the past 100 years. Sixteen years down the line after his report, blind probing still remains the preferred choice for many ophthalmologists. There have been various recommendations to improve results in blind probing. Kenneth et al reported better results of blind probing by using multi-pass technique in which multiple passes in four quadrants anterior, posterior, nasal and temporal are done. We present our endoscopic findings in a case contrary to this recommendation. In a 2 year old child with epiphora left eye, probe can be seen in the right nasal cavity under the membrane over NLD. (Figure 13) With multi-pass multiple holes were seen with intact intervening mucosa. (Figure 14, 15) We used a sickle knife to join all these small holes.
In case of blind probing, the intact mucosa would have been left behind and could be responsible for recurrence of symptoms after few months.

**Conclusion**

Endoscopic evaluation of all the failed blind probing cases is required as bony block, a most commonly reported finding, is in reality, a false bony block. An early endoscopic assisted intervention can result in better outcome.

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**References**

1. Ali MJ, Kamal S, Gupta A, Ali MH, Naik MN. Simple vs complex congenital nasolacrimal duct obstructions: etiology, management and outcomes. *Int Forum Allergy Rhinol* 2015; 5:174–7.
2. MacEwen C J, Young J D H, Barras C W, Ram B, White P S. Value of nasal endoscopy and probing in the diagnosis and management of children with congenital epiphora. *Br J Ophthalmol* 2001; 85:314–18.
3. Wright KW, Mocan MC, Najera-Covarrubias M, Suarez N. Results of multi-pass nasolacrimal probing. In: Paediatric Ophthalmology & Strabismus, USA; 2004. Pp-261-262.

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