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Conventional or endoscopic probing for congenital nasolacrimal duct obstruction

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PURPOSE. *To compare conventional and endoscopic probing for congenital nasolacrimal duct obstruction in infants.*

METHODS. *Conventional probing was performed in 22 eyes of 18 patients, age range 7-14 months (mean 11.4 months). Probing was done with intranasal endoscopic visualization in 18 eyes of 14 patients, age range 7-13 months (mean 11.2 months). All were primary probing cases.*

RESULTS. *After conventional probing 2 of the 22 cases required reprobing. After endoscopic probing only 1 of the 18 cases required reprobing.*

CONCLUSIONS. *In most cases of congenital nasolacrimal duct obstruction endoscopy is not required; however, in failed cases direct visualization of the inferior meatus with endoscopic guidance may be helpful. (Eur J Ophthalmol 2001; 11: 215-7)*

KEY WORDS. *Nasolacrimal duct obstruction, Conventional probing, Endoscope*

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INTRODUCTION

Congenital dacryostenosis is a common condition in which the far end of the nasolacrimal duct underneath the inferior turbinate fails to complete its canalization in the newborn period. It may produce clinical symptoms in 2% to 4% of newborns (1, 2). In most instances a small membrane at the end of the nasolacrimal duct persists because of incomplete canalization of the duct, but this spontaneously dissolves in 80% to 90% of infants within 2 to 4 months (3).

In the first weeks of life, a persistent mucous membrane across the lower end of the nasolacrimal duct can perforate spontaneously, and simple massage of the inner canthus and lacrimal sac can be helpful. When the nasolacrimal duct is not patent at the end of six months probing is usually indicated (4). Obstruction of the nasolacrimal duct, dacryocele, and acute dacryocystitis in neonates are the main indications to probe the nasolacrimal canal (5).

From the current literature, both office and hospital probing appear to have an approximately 95% success rate (6). Probing can be repeated if it fails the first time. With better visualization of the inferior meatus probing can be done under endoscopic visualization, to prevent inadvertent false passage.

The present prospective study was designed to compare the results of conventional and endoscopic probing.

METHODS

A prospective clinical study was conducted. The clinical diagnosis of congenital nasolacrimal duct obstruction was defined as an infant who presented with typical epiphora and/or eye discharge in the first few months of life.

The patients were allocated to the groups on a random basis: 18 were assigned to the conventional probing group; four had bilateral epiphora and 14 unilat-

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eral. Therefore a total of 22 obstructions underwent conventional probing. Follow-up was 8-16 months (mean 14.1 months). The endoscopic probing group included 14 patients, four with bilateral epiphora and ten unilateral, so a total of 18 obstructions underwent endoscopic probing. Follow-up was 7-16 months (mean 13.8 months). The average age of the patients who underwent conventional probing was 11.4 months (range 7-14 months). The average age of the patients who underwent endoscopic probing was 11.2 months (range 7-13 months).

All procedures were performed with the patient under general anesthesia and with inhalation. During endoscopic probing one of us and an otorhinolaryngologist were present in the operating theater. All probings were done by the two experienced ophthalmologists.

For endoscopic probing the nasal cavity was packed with a cotton applicator soaked in 1% pantocaine with 1:100.000 epinephrine. The cotton applicators were inserted directly into the inferior and middle meatus in order to decongest the mucosa for better visualization. Hopkins straight (0°) intranasal endoscopes (4 and 2.7 mm) were used. The upper and lower puncta were dilated and the lacrimal system was probed using a "0" or "00" gauge Bowman probe. During endoscopic probing, first the nasal cavity then the inferior meatus were inspected with an intranasal endoscope. Then, while the ophthalmologist advanced the probe into the nose, the otorhinolaryngologist observed the inferior meatus endoscopically. After completing the probing, the nasolacrimal system was irrigated with saline to confirm patency of the duct. Successful probing in this study was defined as complete resolution of epiphora and discharge in the affected eye.

TABLE I - OUTCOME OF CONVENTIONAL AND ENDOSCOPIC PROBING

	Conventional		Endoscopic	
	no.	%	no.	%
Successes	20	90.9	17	94.4
Failures	2	9.1	1	5.6

Chi-square test: $x^2 = 2.86$, $p > 0.05$

RESULTS

Conventional probing was performed in 22 lacrimal systems of 18 children with congenital nasolacrimal duct obstruction, four cases being bilateral. Endoscopic probing was done in 18 lacrimal systems of 14 patients, also with four bilateral cases: Table I summarizes the results. Only 2 of the 20 lacrimal drainage systems that underwent conventional probing required reprobing. Only one of the 17 that underwent endoscopic probing required reprobing. The chi-square test showed no significant difference between the two groups ($\chi^2 = 2.86$, $p > 0.05$).

DISCUSSION

Nasolacrimal duct obstruction is relatively common in infancy and there are different options for its management. It is mostly agreed that conservative management, meaning topical antibiotic drops or ointment and digital hydrostatic massage, should be undertaken in the first few months of life. When the nasolacrimal duct is still not patent after six months, the duct is usually probed (4). Katowitz et al (7) in a retrospective study of 427 patients with congenital nasolacrimal duct obstruction involving 572 eyes, reported success in 97% of cases when probing was done before 13 months of age.

Agarwal et al (8) suggested that primary nasolacrimal intubation should be the next step in the management of childhood epiphora which fails to resolve after two probings. Orhan and Önerci (9) reported a 100% success rate in 18 intranasal endoscopic silicone intubations and concluded that this was also effective as a primary procedure for congenital nasolacrimal duct obstruction in patients over 18 months of age.

In our study all the patients were less than 14 months old and probing was done either conventionally or with endoscopic visualization. The success rate for conventional probing was 90.5% in 22 procedures. The figure was comparable for endoscopic probing: 94.4%. In view of the good results with conventional probing, we conclude that probing does not require routine intranasal endo-

scopic visualization. However, when probing fails to solve the problem, checking the inferior meatus endoscopically while reprobing may help to minimize nasal trauma and prevent the formation of false passages, since the location of the inferior meatus will be clearly and directly observed (10, 11).

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