Graefe's Arch Clin Exp Ophthalmol
(2002) 240:960–961

LETTER TO THE EDITOR

DOI 10.1007/s00417-002-0565-9

Jia-Kang Wang
Pei-Ching Lai
Shu-Lang Liao

Punctal and canalicular agenesis presented with congenital nasolacrimal duct obstruction

Received: 23 August 2002
Published online: 2 October 2002

Introduction

Punctal and canalicular agenesis are not common [2]. Punctal agenesis, canalicular agenesis, and congenital nasal lacrimal duct obstruction (NLDO) can appear together or separately. There are several means of managing these conditions [1, 2, 3, 4]. Herein we describe a case of combined punctal agenesis, canalicular agenesis, and congenital NLDO.

Case report

The 2-year-old male patient had epiphora of the right eye since birth. Medical and family histories were unremarkable. The ocular examination revealed the absence of both puncta on the right side. Under general anesthesia, the child underwent Jones one-snip procedure on both puncta as modified by Putterman [3]. A 27-gauge needle was used to penetrate the site of absent puncta, and a punctal dilator was then employed. One snip was made on each punctum with Wescott scissors. Diagnostic probing of both puncta was accomplished using a Bowman probe. A "hard stop" on the lower punctum and a "soft stop" with short advancement on the upper punctum were displayed. A pigtail probe was then inserted into the lower punctum and canaliculus to locate the upper canaliculus; it could not be found. The upper canalicular agenesis, however, was identified. Irrigation through the lower punctum was attempted, but failed. Congenital NLDO was present. Therapeutic probing of the nasolacrimal duct was carried out. Right-sided turbinate infracture was also performed because the inferior turbinate was in close proximity to the lateral wall of the nose (around the outlet of the nasolacrimal duct). A silicone tube was passed from the right lower punctum to the nasolacrimal duct and out of the nose. The two ends were tied beside the nose and the tube was left in place for 6 months. Since removal of the tube 1 year ago the patient has been free of tearing.

Discussion

Punctal agenesis may be the result of a defect during one of the stages of differentiation of the lacrimal passage. It usually is associated with the absence of underlying canalicular tissue. In 86% of eyes with the absence of both puncta, no canalicular tissue is identified when the lacrimal sac is opened surgically [2]. The underlying canaliculus is also absent in patients who have one absent punctum. Our patient, however, had absence of both puncta, but absence of only one canaliculus. Associated NLDO was also discovered. Therefore, we had to solve three problems: punctal agenesis, canalicular agenesis, and congenital NLDO.

Punctal agenesis in this patient was corrected by using a modified Jones one-snip technique. Usually, a partially occluded punctum can be easily found and treated by the Jones one-snip method. However, the site of absent puncta should first be precisely located. The Putterman modification of the Jones technique utilizes needles and dilators to solve this problem [3].

There are several ways to expose canalicular tissue in patients with canalicular agenesis. Exploratory cut-down through the lid margin has been advocated but has often failed. Another generally accepted method is to open the lacrimal sac and perform retrograde probing through the common canalicular opening. We did not, however, attempt any of these means to explore the right upper canaliculus of this patient, for four reasons:

1. The possibility of considerable damage to the eyelid or lacrimal excretory system
2. The patent lower punctum and canaliculus
3. Punctal agenesis, which is often associated with the absence of underlying canalicular tissue
4. Lack of identification of upper canalicular tissue by a pigtail probe

For congenital NLDO, simple probing and irrigation were effective [2]. Still, additional silicone intubation can improve the patency rate and avoid the risk of additional surgery [4]. Because only one punctum was patent, we could not perform regular intubation through both puncta, but had to fix the ends of the silicone tube beside the nose. Fortunately, the tube did not dislodge for 6 months; this was due to the cooperation of the child. One patient reported by Putterman also received intubation through the lower punctum only. The two ends of the tube were tied over the cheek and left in place for 1 month [3].

In summary, the patient had complicated congenital anomaly of lacrimal excretory system. Treatment included a modified Jones one-snip procedure, nasolacrimal duct probing, turbinate infracture, and silicone intubation. Management of such complicated cases should be adjusted on the basis of the results of previous reports and the anatomical peculiarities of the individual patient.

References

1. Boerner M, Seiff SR, Arroyo J (1995) Congenital absence of the lacrimal puncta. Ophthalmic Surg 26:53–56
2. Lyons CJ, Rosser PM, Welham RAN (1993) The management of punctal agenesis. Ophthalmology 100:1851–1855
3. Putterman AM (1973) Treatment of epiphora with absent lacrimal puncta. Arch Ophthalmol 89:125–127
4. Putterman AM (1979) Reconstruction of absent lacrimal puncta. Ophthalmic Surg 10:20–24

J.-K. Wang (✉) · P.-C. Lai
Department of Ophthalmology,
Far Eastern Memorial Hospital, 21,
Sec. 2, Nan-Ya South Road, Pan-Chiao,
Taipei County, 220, Taiwan
e-mail: jiakangw@yahoo.com.tw
Tel.: +886-2-29546200 ext. 4272
Fax: +886-2-25281241

S.-L. Liao
Department of Ophthalmology,
National Taiwan University Hospital,
Taipei, Taiwan