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SHORT COMMUNICATION

Congenital dacryocystocele with intranasal extension

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PURPOSE. *Congenital dacryocystocele is a rare anomaly in the newborn child. The swelling of lachrymal sac is observed by birth and it is associated with obstruction of lachrymal system either above or below lachrymal sac.*
METHODS. *Diagnosis was made by clinical observation. Some ancillary examinations, such as ultrasonography, tomography, and rhinoscopy, were useful.*
RESULTS. *The authors describe the clinical case of a newborn with a unilateral congenital dacryocystocele. This anomaly was successfully treated with probing and marsupialization of the nasal cyst.*
CONCLUSIONS. *Treatment of this congenital anomaly is by light compressive massage, probing with silicone intubation of lachrymal system to assure prolonged permeability of the system, or with marsupialization of the nasal cyst. In some cases with intranasal extension of dacryocystocele, collaboration with an otolaryngologist may be necessary. (Eur J Ophthalmol 2004; 15: 126-8)*

KEY WORDS. *Congenital dacryocystocele, Cyst of lachrymal sac, Nasal cyst*

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INTRODUCTION

Dacryocystocele is an uncommon congenital anomaly (1). It is characterized by unilateral or bilateral grey-blue cystic swelling, just below the medial cantus. The cyst of lachrymal sac is typically present at birth or develops within the first weeks. It is associated with the obstruction of lachrymal system, above and below the lachrymal sac. Above the sac, the Rosenmüller valve stops the fluid reflux. Inferiorly there is a membranous obstruction (Hasner's membrane).

Inflammatory signs are not a characteristic of this pathology but indicate the presence of a dacryocystitis (1, 2). There is some controversy about conservative treatment and probing or surgical decompression, as soon as possible (3).

Case report

A 4-days-old white male infant was hospitalized with a 2 cm diameter red swelling, beneath the medial cantus of the right eye (Fig. 1), with homogeneous translucence. No fluid reflux through the lachrymal point of both lids was present. No clinical signs of respiratory distress were found. Swelling was present at birth and gradually increased in size after the third day. Examination was consistent with right dacryocystocele and dacryocystitis.

This child was delivered by caesarean section delivered as sonographic osoligohydramnios was found at the 36th week of a normal pregnancy. He had normal measurements for gestational age.

Despite intravenous antibiotics treatment and light compressive massage, the cystic swelling maintained,

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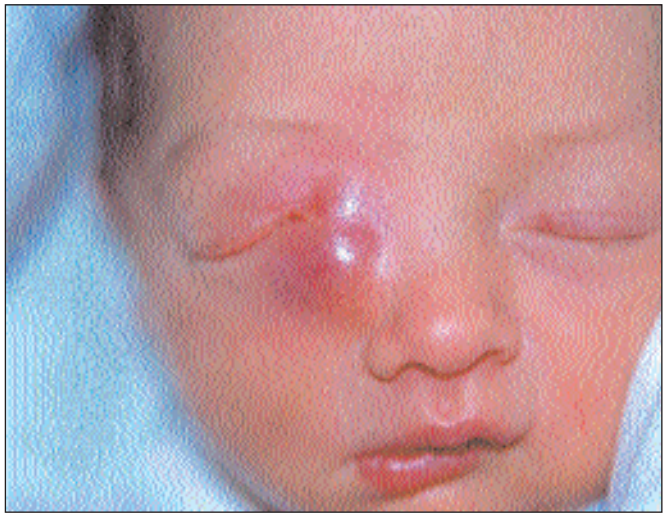

Fig. 1 - *Large right congenital dacryocystocele with dacryocystitis causing upward medial tilt of the palpebral fissure.*

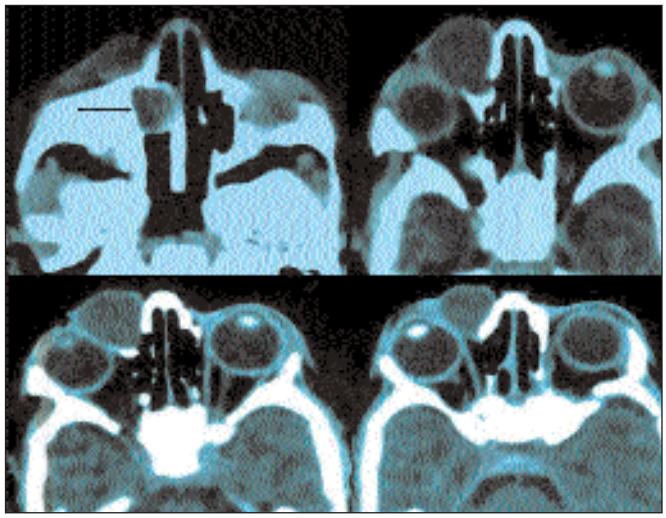

Fig. 2 - *Axial computed tomography scan shows enlargement of the right lachrymal sac with an intranasal cyst (black arrow).*

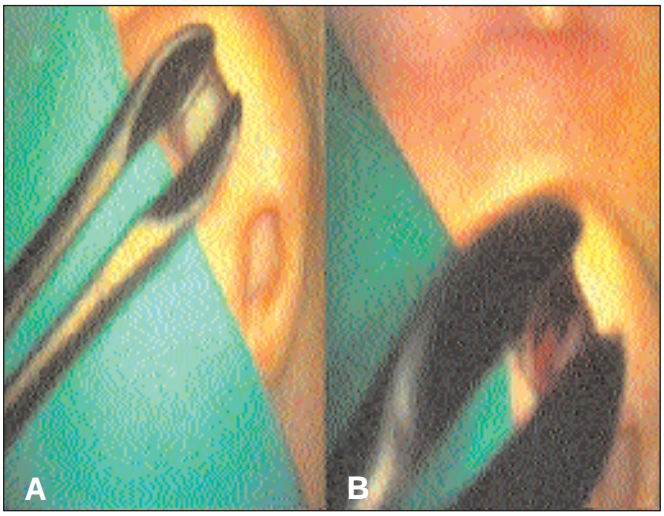

Fig. 3 - (A) *Cystic extension of right nasolachrymalnasolacrimal duct beneath inferior turbinate.* **(B)** *Aspect after marsupialization of right nasal cyst.*

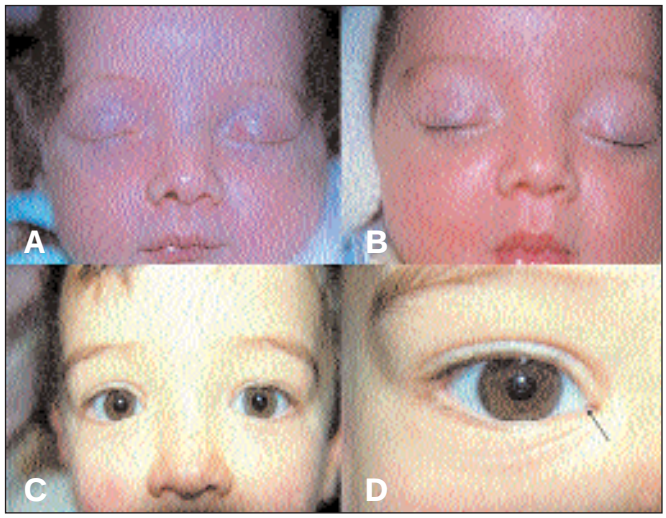

Fig. 4 - (A) *Four days after surgery.* **(B)** *Four weeks after surgery.* **(C)** *Twenty months after surgery.* **(D)** *Prolonged silicone intubation in the right lachrymal system (black arrow).*

with a bluish colour instead of initial redness.A computed tomographic scan demonstrated a soft tissue mass medial to the right orbit, displacing the globe laterally with intranasal extension (Fig. 2). The nasolachrymal duct was enlarged and an intranasal cyst was seen beneath the right inferior turbinate (Fig. 3A).

The child was taken to surgery and underwent nasal endoscopy, probing, marsupialization of the cyst (Fig. 3B), and long-term intubation of lachrymal system with silicone tubes. After surgery his symptoms and signs completely resolved (Fig. 4).

DISCUSSION

Canalization of the epithelial cell cord destined to be the nasolachrymal duct begins at the third month of embryonic development. Final communication with the inferior nasal meatus begins around the sixth gestational month. Frequently, a membranous barrier between the nasolachrymalnasolacrimal duct and the nasal cavity persists up to or beyond birth (2). In the presence of distal obstruction, fluid accumulates within the lachrymal sac and

nasolachrymal duct, expanding the sac and collapsing the Rosenmüller valve. Fluid continues to enter the system but does not reflux back through the puncta, forming the dacryocystocele.

Diagnosis of this anomaly is made by clinical observation. Diagnostic aids include transillumination, ultrasound, computed tomography (CT), magnetic resonance imaging (MRI), dacryocystography, and nasal endoscopy. CT and MRI are equally sensitive (MRI has the advantages of characterizing the cyst contents and absence of radiation exposure; CT has the advantage of detecting bone changes involving the bony lachrymal canal).

There are some reports of prenatal sonographic diagnosis of dacryocystocele. (4-6). Its prenatal visualization raises the rare possibility of diagnosis associated anomalies. The differential diagnosis with other congenital anomalies of the base of the nose or the medial portion of the lower lid is very important (2).

Most likely, nasal cysts originate as a congenital cystic distension of the membranous obstruction at the distal nasolachrymal duct. Fluid accumulation with secondary dacryocystitis may result in increasing size of the cyst and nasal obstruction.

Ophthalmologists must be aware that nasal obstruction and respiratory distress can occur in newborn infants with bilateral nasal cysts. Parents of infants with dacryocystoceles should be carefully questioned regarding symptoms of nasal congestion, snorting respirations, tachypnea, and breathing difficulty with feeding.

Cystic distension of the nasolachrymal duct is a more common finding in dacryocystocele than previously recognized (1, 3). Nasal examination must be performed in all cases of congenital dacryocystocele to exclude the coexistence of nasolachrymal duct cysts.

Congenital dacryocystocele may resolve spontaneously. In some patients conservative management (light compressive massage, topical and systemic antibiotics) would spare the risk of general anesthesia (7). In case of severe or recurrent infection, probing and silicone intubation of lachrymal system should be performed after an adequate antibiotic treatment. Some authors recommend this surgical procedure to avoid adverse sequelae related with mass effect, such as permanent canthal asymmetry, induction of corneal astigmatism, and anisometropic amblyopia (2, 7).

Probing alone may be insufficient to treat dacryocystocele associated with intranasal cyst. It must be combined with a wide marsupialization of the cyst and prolonged silicone intubation to prevent recurrence (1, 2). Combined treatment by an ophthalmologist and otolaryngologist was necessary in the case described.

In patients with respiratory distress, excision of the cyst and probing should be performed promptly.

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