Sequential Bilateral Dacryocele

Dacryoceles, also known as lacrimal sac mucocoele, amniocoele, amniotocoele, or dacryocystocoele, are a rare form of congenital nasolacrimal duct obstruction with both proximal and distal obstruction resulting in lacrimal sac enlargement. Usually presenting at birth, there is significant risk for infection. Probing and excision of an associated intranasal cyst under general anesthesia may be needed. We present 2 infants who underwent probing for a unilateral dacryocele who subsequently developed a dacryocele on the unaffected side. We suggest that if a unilateral dacryocele is probing under general anesthesia it may be prudent to evaluate the contralateral side, even if asymptomatic. Probing and excision of an intranasal cyst, if present on the asymptomatic side, may prevent development of a dacryocele and a second anesthesia.

Report of Cases. Case 1. An otherwise well, full-term, 6-day-old girl was referred for evaluation of a purple mass present since birth near the left medial canthus. The parents noted yellowish discharge from both eyes. She was feeding well without dyspnea.

External examination (B.N.W.) revealed an approximately 1-cm mass just inferior and lateral to the left medial canthus (Figure 1A). The overlying skin was erythematous and the lesion firm. The right medial canthus was minimally erythematous, but without mass. The remaining anterior segment and retinal examinations were normal bilaterally.

The patient underwent a left nasolacrimal probing and irrigation in the office with topical anesthetic. Copious yellow-white material was expressed via the lower puncta when the No. 0 Bowman probe was passed into the lacrimal sac and then into the nasolacrimal duct. No attempt was made to accomplish intranasal “metal-on metal” contact. The lacrimal system was irrigated with normal saline. The patient was prescribed moxifloxacin and tobramycin/dexamethasone drops, administered each alternating hour while awake. The parents were instructed to perform nasolacrimal sac massage.

One day later, the parents reported discharge from both eyes. Massage and eye drop administration were continued. Five days later, examination revealed a new right dacryocele without infection but with persistent discharge bilaterally (Figure 1B). The child was afebrile and feeding well. Office right nasolacrimal probing and irrigation was performed, again producing copious discharge. One day later, the right dacryocele had recurred. Gentle massage failed to decompress the dacryocele. Repeated office probing and irrigation was performed. The next day, the dacryocele returned. There was persistent discharge from the left eye, despite apparent resolution of the left dacryocele.

The patient was hospitalized, where probing and irrigation were performed under general anesthesia. Intranasal endoscopy revealed bilateral intranasal cysts (Figure 2), which were excised. All symptoms were resolved on follow-up examination 1 month later.

Case 2. An otherwise healthy, full-term, 2-day-old baby was observed to have swelling of the left lower eyelid medially. The parents reported "yellow pus" draining from the left eye since 4 days of age, which then stopped at 10 days of age. Subsequently, the left lower eyelid swelling became firm and developed surrounding erythema. Oral amoxicillin was prescribed by the pediatrician. On initial examination by Ophthalmology (B.M.S.) at 12 days old, a firm, erythematous, cystlike lesion inferior and lateral to the medial canthus, causing an upward distortion of the eyelid margin, (Figure 3A) consistent with an infected dacryocele was seen.

Attempted decompression by moderate pressure failed. The lacrimal system was probed into the lacrimal sac without passing the probe down the nasolacrimal duct. Copious greenish-yellowish material drained. The parents were instructed to continue lacrimal sac compression and oral antibiotics. Two days later, the dacryocele was decreased in size and the erythema resolved. Compression by the ophthalmologist yielded approximately 2 to 3 mL of discharge and the dacryocele decompressed. Subsequently, the dacryocele recurred.

At 29 days old, the patient underwent left nasolacrimal probing and intranasal cyst excision with intranasal endoscopy under general anesthesia for a persistent dacryocele. Immediately after probing and cyst excision, the dacryocele resolved and did not recur.

At 40 days old, discharge was first noted from the right eye. At 61 days old, a firm swelling was found just inferolateral to the medial canthus.
approximately 25% are bilateral, 3-5
len sac presents as a bluish, cystic,
slants upward nasally. Patients may
result in the lowest recurrence rates1,5
eral, large intranasal cysts without
bacterial drops may yield success in up
to 76% of babies within 1 week.4 Cit-
ing risks of infection and potentially
eral dacryocele with concurrent intranasal
Medical treatment with massage,
childhood, sometimes with signs of
swollen sac displaces the medial canthal tendon upward,
slants upward nasally. Patients may
also have respiratory distress and
difficulty feeding secondary to the
intranasal cyst.1-3,5 Differential diag-
nosis includes encephalocele, hem-
angiomia, dermoid, and glioma.1
Medical treatment with massage,
warm compresses, and topical anti-
biotic drops may yield success in up
to 6 months of follow-up.
Comment. A dacryocele is a lacrimal
swelling from nasolacrimal duct blockage at the inferior me-
us, causing a proximal ball-valve effect at the canalicular junction to
the lacrimal sac allowing fluid to en-
ter, but not to leave, the sac. Dac-
ryoceles occur in 0.08% to 0.1% of
newborns with congenital nasolacrimal duct obstruction.1,2 Ap-
proximately 25% are bilateral,3-5 although initial presentation may be
unilateral.5 Intranasal cysts are almost invariably present.3,5 The swol-
len sac presents as a bluish, cystic,
ental. Paysse and coworkers5 re-
ported that 4 of 16 patients with a unilateral dacryocele later de-
veloped contralateral dacryoceles. They recommend consideration of bi-
ateral nasolacrimal probing in unilateral cases. Our experience supports
this approach, particularly so that in-
tranasal endoscopy can identify con-
tralateral occult intranasal cysts. This
would reduce the potential risk of
neonatal infection and need for a sec-
ond general anesthesia to treat a se-
quential dacryocele. Bilateral office
probe and irrigation may be prudent on initial presentation.

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1. Wong RK, VanderVeen DK. Presentation and
management of congenital dacryocystocele.
2. Becker BB. The treatment of congenital
(5):835-838.
3. Levin AV, Wyganski-Jaffe T, Forie V, Buck-
walter JA, Buncie JR. Nasal endoscopy in the
treatment of congenital lacrimal sac mucocele.
Int J Pediatr Otorhinolaryngol. 2003;67(3):255-
261.
4. Schnall BM, Christian CJ. Conservative treat-
ment of congenital dacryocele. J Pediatr Oph-
5. Paysse EA, Coats DK, Bernstein JM, Go C, de Jong
AL. Management and complications of congeni-
tal dacryocele with concurrent intranasal