

Congenital Nasolacrimal Duct Obstruction

Case Description

6-month-old infant with chronic tearing and discharge of both eyes that started one month after birth

Image Description



external photograph shows tearing of both eyes and periocular crusting of right eye without evidence of inflammation

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Differential Diagnosis

- NLD obstruction**
 - congenital (symptoms start within 1-2 months of birth)
 - acquired
- canalicular/punctal atresia**
- dacryocystocele** (bluish cystic mass below medial canthal tendon)
- congenital glaucoma**
- conjunctivitis**
- other**
 - epiblepharon/entropion/trichiasis
 - corneal abrasion
 - foreign body

Data acquisition

- History**
 - age of onset & course
 - mucopurulent discharge
 - swelling or erythema in medial canthal area
 - trauma
 - chronic photophobia/blepharospasm → **congenital glaucoma**
- Physical Exam**
 - VA
 - IOP
 - corneal diameter
 - corneal edema/clouding
 - Haab striae
 - palpate over lacrimal sac
 - warmth/swelling
 - reflux of mucopurulent discharge through punctum → **dacryocystitis**
 - punctal patency
 - lid margin crusting
 - mucopurulent discharge
 - increased tear lake
 - evert eyelid for foreign body
 - if corneal abrasion
 - if acute onset
 - full dilated exam → optic disc cupping
 - ocular motility/alignment
 - cycloplegic refraction
 - patients with congenital NLDO have higher prevalence of amblyopia risk factors

Additional Testing

- dye disappearance test** (check in (5)10 minutes)
- Jones I test**
 - instill fluorescein into conjunctival fornices
 - at 2 and 5 minutes recover it in inferior nasal meatus by passing a cotton-tipped applicator into nose
- Jones II test**
 - flush residual fluorescein from conjunctival sac with clear saline
 - irrigate lacrimal system with clear saline using a cannula inserted into the canalicular system
 - following an unsuccessful Jones I test
- clear solution suggests that tears never entered lacrimal outflow system
- fluorescein-stained irrigant indicates partial obstruction

Assessment

congenital NLDO

Treatment

- Medical**
 - ≥4 x/day NL sac digital massage (inward & downward pressure)
 - if mucopurulent discharge → topical antibiotic ointment/drop
 - if acute dacryocystitis → systemic antibiotic
- Surgical**
 - NLD probing (young infant in office, older infant in operating room)
 - if 2 probings fail
 - balloon dacryoplasty
 - silicone intubation
 - last resort → DCR

Prognosis

- discuss pathogenesis
- discuss treatment options
- spontaneous resolution in 90% with conservative treatment
- single lacrimal probing resolves congenital NLDO in 90% of patients when performed before age 13 mo
- good prognosis

Patient Education/Counseling

- Follow-up**
 - unless signs of infection → routine
 - conjunctivitis
 - dacryocystitis (call if signs of infection)
 - preseptal cellulitis
 - warmth
 - swelling
 - tenderness
 - purulent discharge
 - monitor for anisometropic/strabismic amblyopia