ENDOSCOPIC PROBING WITH IRRIGATION & DCR IN CONGENITAL NASOLACRIMAL DUCT OBSTRUCTION

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Congenital Nasolacrimal Duct Obstruction (CNLDO)

• Congenital nasolacrimal duct obstruction (CNLDO) is the most common cause of epiphora in infants.
  • It occurs due to the failure of canalization of the distal end of NLD\(^1\).
  • There is a mucous membrane obstruction at the lower end of NLD, found in up to 20% of new born infants\(^1\). Spontaneous resolution occurs in (>90%) during the first 12 months of life\(^1\).
  • In rest of the cases persistent epiphora occurs\(^1\).

Clinical Presentation of Congenital Nasolacrimal Duct Obstruction

The signs vary from

• Mild to troublesome epiphora
• Persistent purulent discharge
• Matting of the eyelashes
• Skin excoriation of the lid margins
• Cellulitis
• Congenital dacryocele

Criggler massage – Multiple Ways

- Crigglor used Thumb
- Kushner used index finger
- Others used thumb & index finger & did B/L massage
- Pressure over LS area just below MCT occluding the CC to prevent regurgitation into eye
- Pressure exerted over the sac is transmitted down along the nose without compressing eye or bone
  - 10 times
  - Per session
  - 3-4 sessions
  - Per day

Katherine Hu¹; Jay Patel²; Bhupendra C. Patel³. Crigler Technique For Congenital Nasolacrimal Duct Obstruction - StatPearls
Probing & Irrigation

- Conventional probing
- Endoscopic guided probing
Conventional probing

- Usually the most commonly followed method of intervention
- It is a blind procedure that mainly depends on the surgeon’s tactile sensation during probing
- Carries the risk of false passage and failure
  - Traumatic stenosis
  - Unexplained failure

Causes of Failure

Endoscopic guided probing

- Endoscopic-assisted probing under GA is the standard of care for children with persistent epiphora
- It allows direct visualization of the distal NLD
- It helps in increasing the success rate of the procedure as compared to blind probing
- Nasal endoscopy assisted probing has a much better outcome as compared to blind probing
- A success rate of 95.7% has been reported with endoscope assisted probing against 75.9% in conventional probing group

Approach to a Child with Epiphora

< 1 year

ROPLAS +VE/ Discharge

With Associated abnormality
➢ Congenital Dacryocele
➢ Congenital LS Fistula
➢ Syndromic Child
➢ Recurrent infection
➢ Craniofacial Dysostosis
➢ Congenital cataract

Massage
4 weeks/Immediate
Intervention Endoscopic Probing & Irrigation

> 1 year

Simple Epiphora

No Associated Defect

Conservative Treatment/Crigler’s massage
Topical Antibiotics - controversial

Resolution complete/ or simple epiphora
Regular Follow Up

No Resolution
Remains ROPLAS positive > 6 Weeks

Endoscopic Probing & Irrigation

No Relief

Intervention
Inferior meatal findings in various types of CNLDO

Simple CNLDO

- Thin Membrane
  - Probing & Irrigation

- Thick Membrane
  - Probing + Sharp Incision & Irrigation

Complex CNLDO

- Dacryocele
  - Probing, excision of extra cyst wall & Irrigation

- Buried Probe
  - Probing & Irrigation

- Bony Block
  - DCR

Others - Craniofacial MF

- DCR
Probing & Syringing for those that fail with Massage
Probing & Syringing + Sharp Cut for those that fail with Massage
Endoscopic M/M of Congenital Dacryocystocele
Importance of Inferior Meatus Examination in CNLDO
Some interesting findings in the inferior meatus

Gupta N. Rhinologist's Endoscopic Experience of Lower Lacrimal System Pathologies in Paediatric Patients. DJO 2017;27; 310-313
A comparison of the success rates of endoscopic-assisted probing in the treatment of membranous congenital nasolacrimal duct obstruction between younger and older children and its correlation with the thickness of the membrane at the Valve of Hasner.
2: Buried probe in complex congenital nasolacrimal duct obstruction

3: Intact intervening membrane in blind probing

Gupta N. Rhinologist's Endoscopic Experience of Lower Lacrimal System Pathologies in Paediatric Patients. DJO 2017:27; 310-313
4: Simple CNLDO made complex by Misdirected Probe/ Multiple attempts

• 30 months old girl
• H/o 4 failed probing
• Last one with IT in-fracture
5: False Passage/Malformed NLD

- 24 months old boy
- H/o 2 probing under general anaesthesia
- ROPLAS + Right eye
- IM examined
- False passage was found on probing
- Malformed bony NLD
- Endoscopic DCR

Dr Nishi Gupta
Indications of Endoscopic Dacryocystorhinostomy in children

- Recalcitrant CNLDO
- Simple CNLDO made complicated by multiple conventional procedures – rare
- Postraumatic cases
- Syndromic children
- PANDO
Assessment of Endoscopic Dacryocystorhinostomy in children

- Age of the child
- Inferior meatal visualization + - Probing
- Recalcitrant CNLDO
- Postraumatic cases
- Syndromic children
- PANDO
Endoscopic Dacryocystorhinostomy
Endoscopic Dacryocystorhinostomy in congenital bony NLD agenesis
Role of Dacryoendoscopy (DEN)- 0.8mm scope
Normal nasolacrimal pathway Lumen

Dual Camera Situation

• 0.8mm Dacryoendoscopy
• 4mm/2.7mm nasal endoscopy
Annual Hands on Training session in progress at Dr Shroff’s Charity Eye Hospital (More than two decades)
Thank You!