PROVIDENCE
Children's Health

Eating and Breathing: Do you HAVE to do BOTH?

Multidisciplinary Management of Early Life Feeding and Airway Disorders

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Conflicts of interest

- Planning Committee & Faculty Disclosure: The Planning Committee and Faculty have no relevant financial relationships with commercial interests to disclose.

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Objectives

- Identify signs and symptoms indicating a potential complex feeding and breathing disorder in a child <1 year
- Construct a differential diagnosis and initial management plan for complex feeding and airway problems
- Be aware of the models of multidisciplinary care for the ongoing management of early life complex feeding and airway disorders

Case Presentation

- Baby Girl, born at 38 weeks, C/S, Apgars 1/5
- BW 3445g (67%), Length 51.5cm (90%)
- Gestational diabetes
- Low blood sugar x 2, received glucose gel x 2
- Initially poor latch, Lactation Consult
- High intermediate risk bilirubin, given mom's milk from bottle
- Discharged home, breastfeeding on DOL 2

And then, at 2 months of age…

- Followed by Lactation
  - Struggling with feedings
  - Irregular and ineffective suck
  - Poor weight gain

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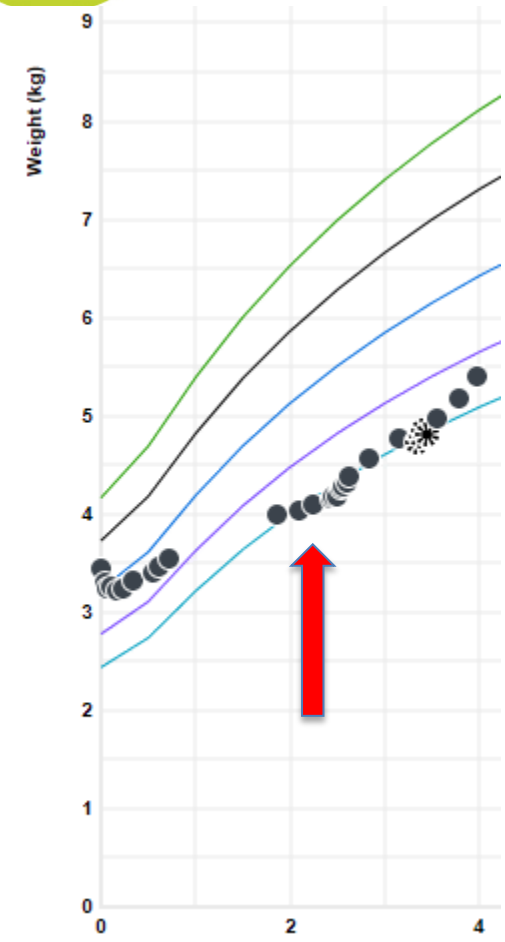
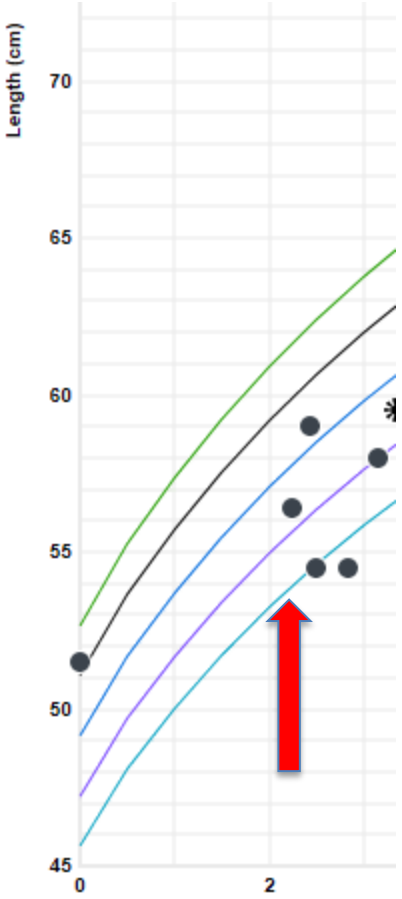
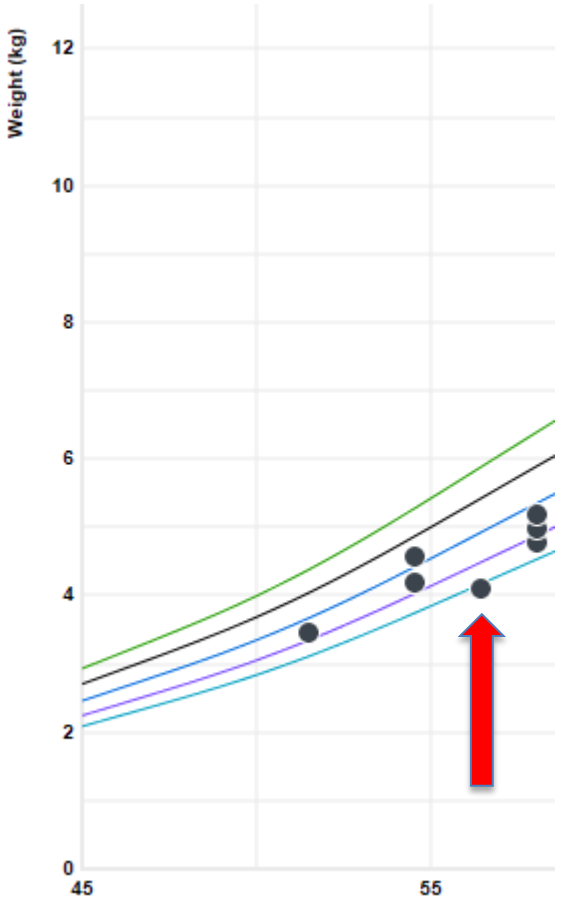
Growth Charts



Weight

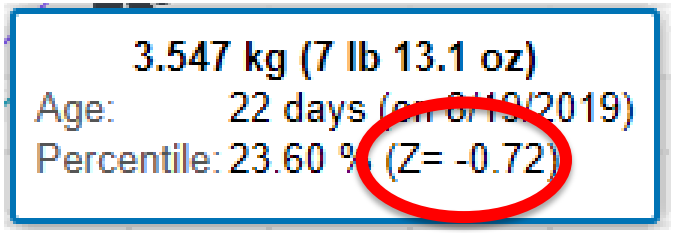


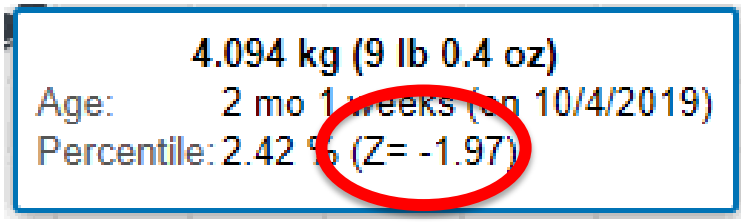
Length



Weight-for-Length

Malnutrition Assessment





- 23.6% to 2.42%
- 13.6g/day
- Z-score decline of 1

Opportunities for Referral & Intervention

- Recognition & management of **malnutrition**
  - Use of Z-scores and rate of weight gain
  - RD and/or GI evaluation
- Recognition & management of **dysphagia**
  - Transition from reflexive feeding to skills-based feeding
  - Assess strength, effectiveness and safety of swallow
  - SLP and/or ENT evaluation

Opportunities for Referral & Intervention

- Airway evaluation and management
  - ENT
  - Possible scope
- Evaluation for GERD, allergy and nutrition support
  - GI
  - Possible scope, NG, G-tube

Initial Referrals

- Seen by PCDI RD
  - Moderate malnutrition, weight-for-length Z= -2.10
  - Congested and irritable after feeding
  - Recommends SLP evaluation
- Seen by PCDI SLP
  - Oropharyngeal dysphagia, suspected aspiration
  - Recommends admission to PSVMC

What is happening here?

- GI/Nutrition
- ENT
- Neurodevelopmental
- Structural/Anatomic
- Inflammatory
- Neurologic
- Genetic

Admission #1

- MBSS: ineffective suck, aspiration with thin liquids
- made NPO and NG feeds started
- Peds GI consulted
- Referred to outpatient Peds ENT
    - Nasopharyngoscopy: omega-shaped epiglottis, laryngomalacia, prolapsing arytenoids

Acid-blockers: to treat or not to treat

GI

- Acid suppression
- Lack of efficacy for infant GERD
- Risk of food allergy and bone fracture

ENT

- Anti-inflammatory
- Avoidance of steroids
- Avoidance of surgery

Admission #2 at 4 months

- Followed by RD, SLP, Peds GI for NG feedings, gaining weight, multiple NG tube dislodgements
- Repeat swallow study with aspiration/laryngeal penetration with thin liquids
- Surgical gastrostomy placed after failed PEG due to difficult airway
- Laryngoscopy and bronchoscopy with laryngomalacia

Laryngomalacia
Medical vs. Surgical Management

- Supraglottoplasty
  - Required for 20% with laryngomalacia
  - Typically with onset <2 months
- Medical
  - Steroids
  - H2-blockers
  - Proton pump inhibitors

Supraglottoplasty for primary laryngomalacia

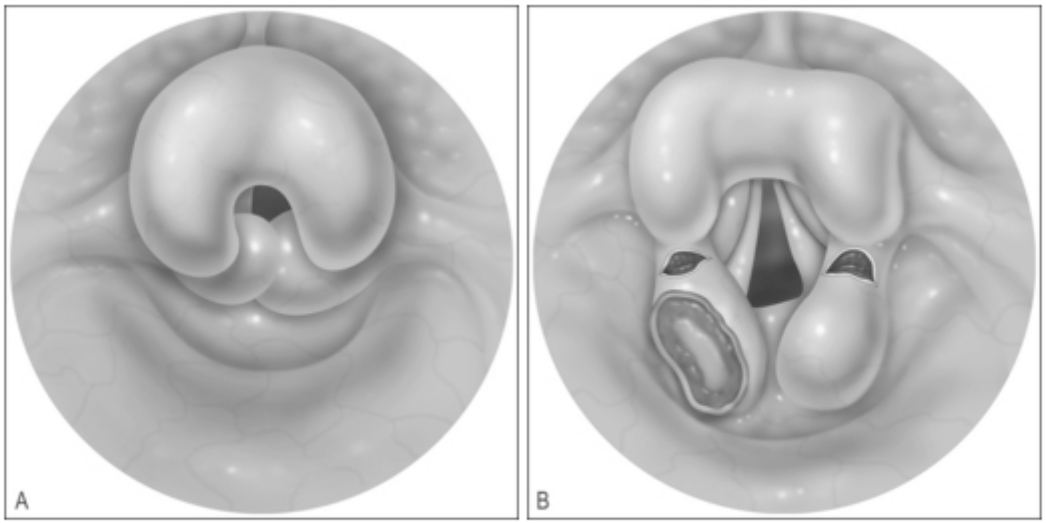


Fig. 69.1 A, Primary laryngomalacia: anatomic anomaly such as shortened aryepiglottic folds causes narrowing of the laryngeal inlet. Venturi principles describe forces that result in infolding of the arytenoids or epiglottis with inspiration. B, Primary laryngomalacia after supraglottoplasty with division of aryepiglottic folds.

Supraglottoplasty for secondary laryngomalacia

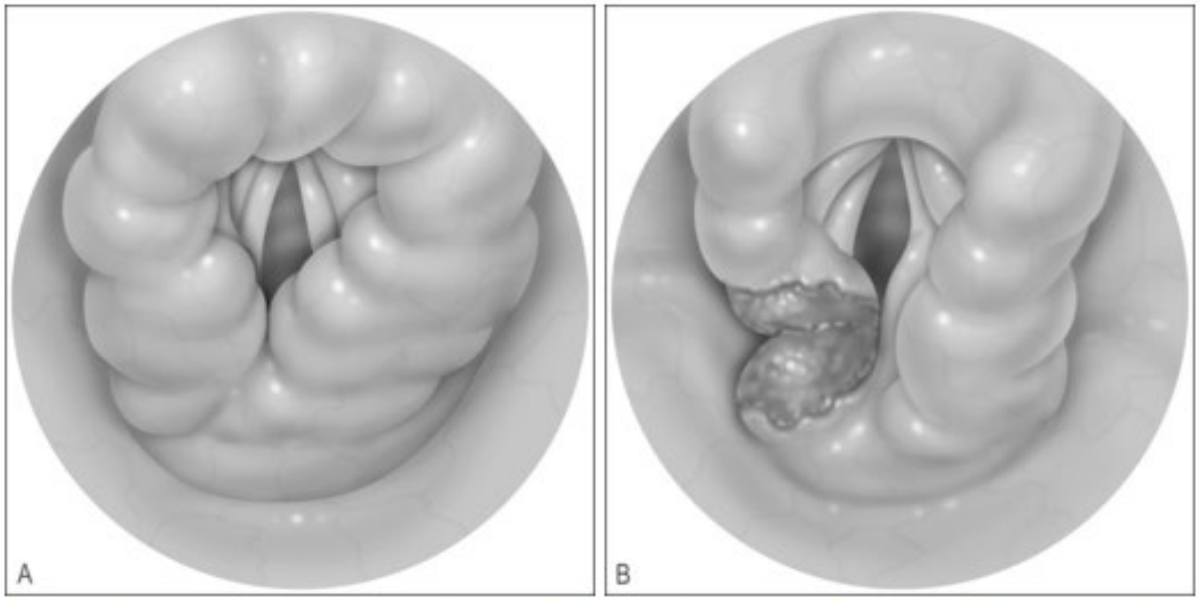


Fig. 69.2 A, Secondary laryngomalacia: narrowing of the laryngeal inlet caused by edema of the supraglottic structures secondary to reflux disease. B, Secondary laryngomalacia with failure of medical therapy for reflux after supraglottoplasty with mucosal removal.

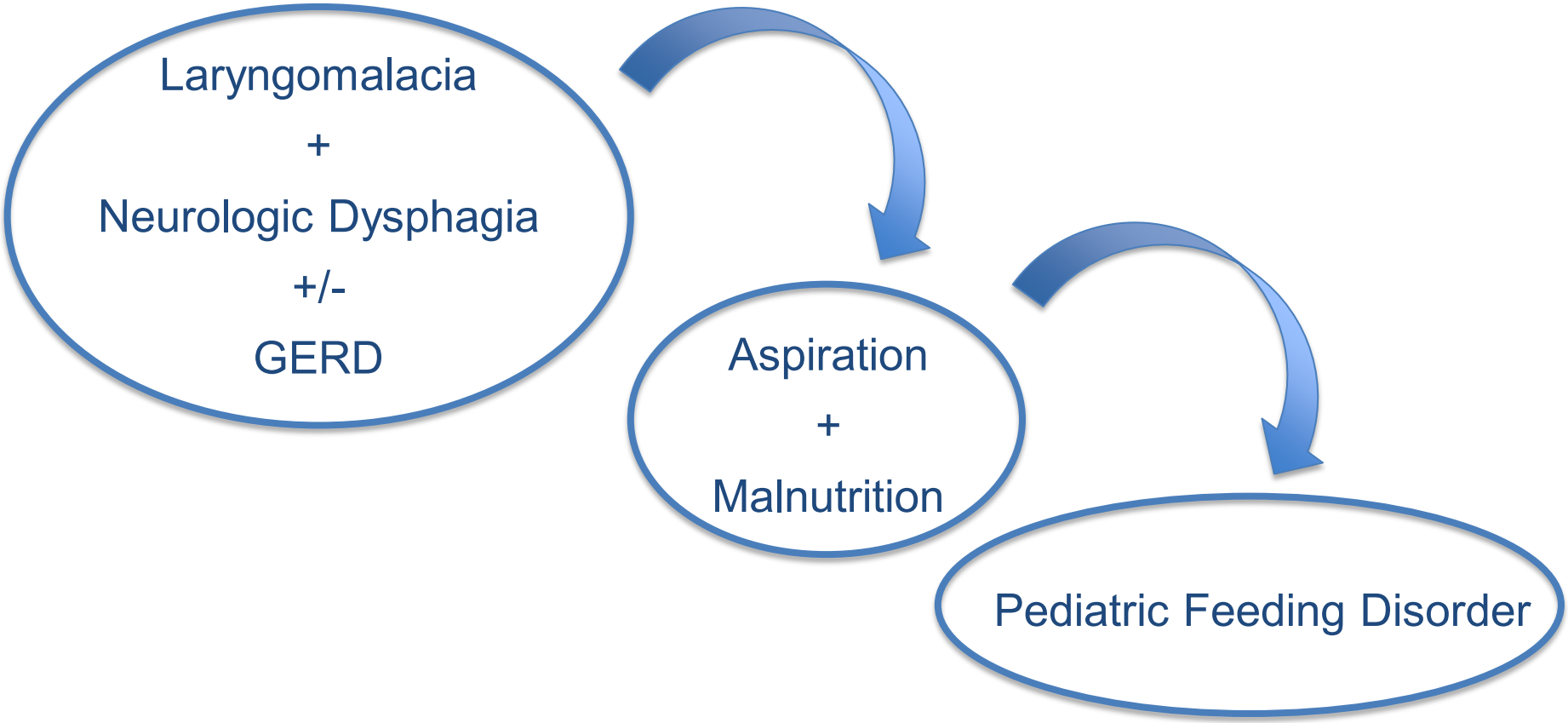
Next steps

- Followed closely by RD, SLP, Developmental Peds, Peds GI, PCP
- Seen by Child Neurology: no specific diagnosis
- 9 months: repeat swallow study with continued aspiration
- 16 months: taking all foods and liquids by mouth; not using GT
- Repeat swallow study: improved oropharyngeal dysphagia, laryngeal penetration x 1 with thin liquid, mild stasis/weakness

Towards resolution?

- 19 months: GT removed
- 21 months: taking age-appropriate solid foods, controlled flow cup for thin liquids, control pace and bolus size

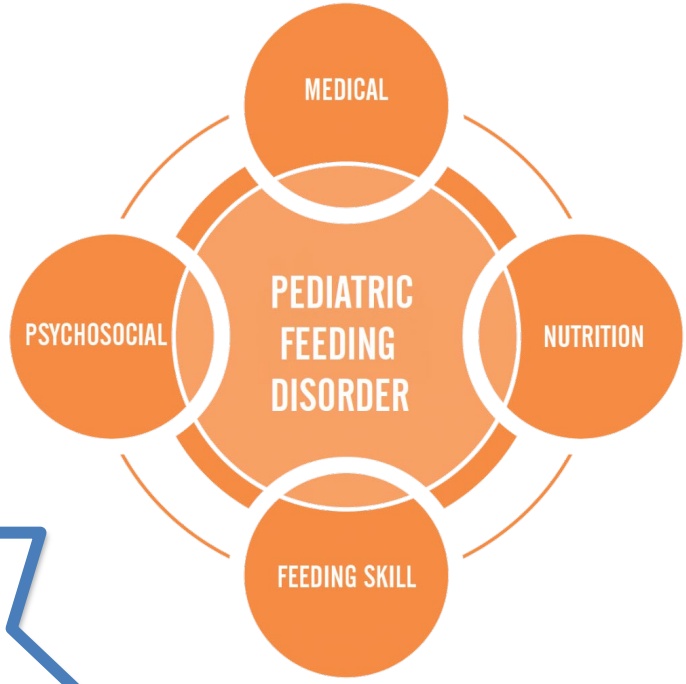
So what just happened?



Pediatric Feeding Disorder

Disturbance of oral intake of nutrients, with ≥1:

- Cardiorespiratory compromise or aspiration
- Malnutrition or nutrient deficiency
- Feeding skill dysfunction
- Psychosocial dysfunction



Coming to ICD-11 0n 10/1/2021

https://www.feedingmatters.org/what-is-pfd/

When to Refer

- ENT
  - Any airway or breathing concerns or irregularities
  - Airway is noisy and growth rate is lagging
    - *"Babies choose between breathing and eating and will always choose breathing over eating"…*
  - Latch concerns: evaluate anatomy from tongue to larynx
    - Structural, neurologic, inflammatory or combination
  - Syndromic or concern for being atypical
  - Family education and support

When to Refer

- GI
  - Any feeding or growth concerns
  - Assess need for medication, feeding evaluation, endoscopy
  - Support enteral (NG, GT) nutrition
  - Family education and support

How to Refer

- ENT fax: 971-282-0142
- GI fax: 971-282-0106

- Internal Epic Referrals
  - Peds GI: REF70J
  - Peds ENT: REF72H
- Epic E-Consult

Questions?

- Phone number: 503-216-6050