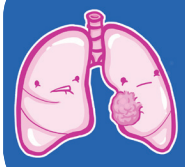

NOTES
UPPER RESPIRATORY TRACT CONGENITAL MALFORMATIONS

CHOANAL ATRESIA

osms.it/choanal-atresia

PATHOLOGY & CAUSES

- Congenital narrowing or blockage of the nasal passage (choana) by abnormal bony or soft tissue
- Most common nasal abnormality in newborns; more than 50% have other congenital conditions
- ⅔ present unilaterally, ⅓ bilaterally
- *Cause unknown:* can be associated with conditions that cause depression of the nasal bridge or midface retraction (craniosynostosis syndromes)

MNEMONIC

In context of CHARGE association

Coloboma
Heart defects
Atresia of choanae
Retardation (physical, mental)
Genitourinary abnormalities
Ear defects

RISK FACTORS

- *Possible association with:* low thyroid hormone levels; smoking; coffee consumption; high maternal zinc and B_{12} intake; exposure to agricultural chemicals; anti-infective urinary tract medications

COMPLICATIONS

- Aspiration while feeding
- Respiratory arrest
- Re-narrowing of the area after surgery

SIGNS & SYMPTOMS

- Variance of presentation depends on unilateral or bilateral defect
- Newborns are obligate nasal breathers → difficulty breathing unless crying
- Unilateral choanal atresia may not be detected for years → newborn uses healthy nostril to breathe; distress may be intermittent
- Bilateral choanal atresia can be life-threatening; causes acute breathing problems and cyanosis
- Marked chest retraction
- Inability to nurse and breathe at the same time
- Persistent one-sided mucous discharge
- Cyanosis

DIAGNOSIS

DIAGNOSTIC IMAGING

CT scan

Endoscopy of the nose

Sinus radiography

OTHER DIAGNOSTICS

- Inability to pass a catheter through nasal passage

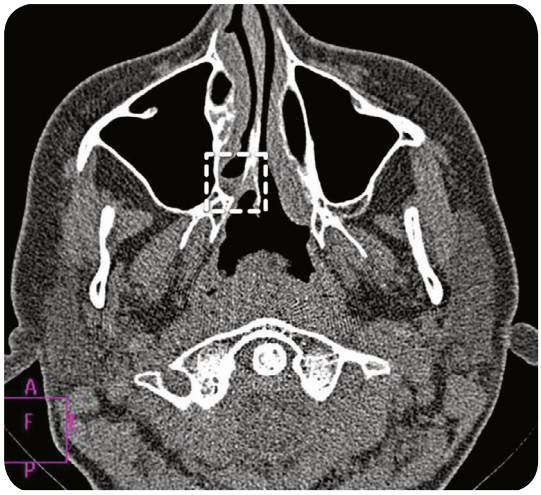

Figure 134.1 A CT scan of the head in the axial plane demonstrating membranous atresia of the right choana.

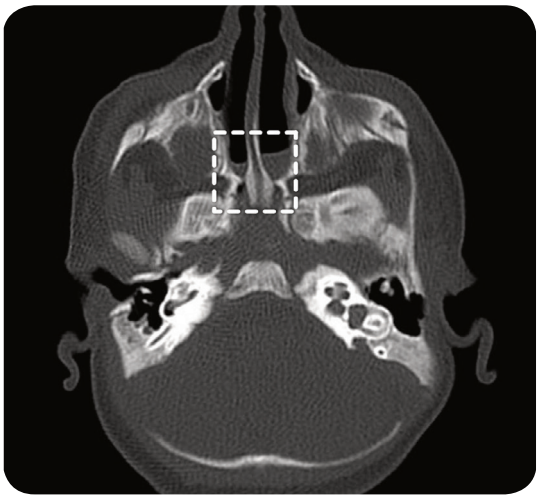

Figure 134.2 A CT scan of the head in the axial plane demonstrating bilateral osseous choanal atresia.

TREATMENT

- *Temporarily:* oral airway placement; place infant prone

SURGERY

- *Definitive:* surgical correction of the atresia

LARYNGOMALACIA

osms.it/laryngomalacia

PATHOLOGY & CAUSES

- Congenital malformation of the larynx where the aryepiglottic folds are shorter than normal
- Short aryepiglottic folds cause folding of epiglottis in a characteristic omega shape that prolapses during inspiration
- Arytenoid cartilages are enlarged and softer than normal, so they flop into the airway
- Most common cause of congenital stridor and most common congenital lesion of the larynx
- Cause is unknown; associated with weak laryngeal muscle tone

COMPLICATIONS

- Impaired growth and development caused by hypoventilation (hypoxemia)
- Associated with gastroesophageal reflux
- Swallowing dysfunction and choking

SIGNS & SYMPTOMS

- High-pitched stridor
- Noisy respirations
- Breathing difficulties
- Gastroesophageal reflux

DIAGNOSIS

DIAGNOSTIC IMAGING

Laryngoscopy or bronchoscopy

- Confirms diagnosis

OTHER DIAGNOSTICS

- History and physical exam

TREATMENT

- Can resolve spontaneously as throat muscles strengthen by age two

MEDICATIONS

- If hypoxemic → supplemental oxygen

SURGERY

- If laryngomalacia persists, surgical treatment is necessary (tracheotomy or supraglottoplasty)

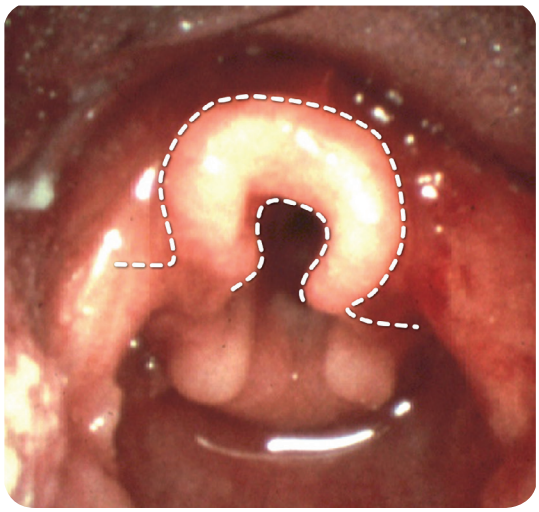

Figure 134.3 A laryngoscopic view of the larynx in an individual with laryngomalacia in which there is an omega-shaped epiglottis.

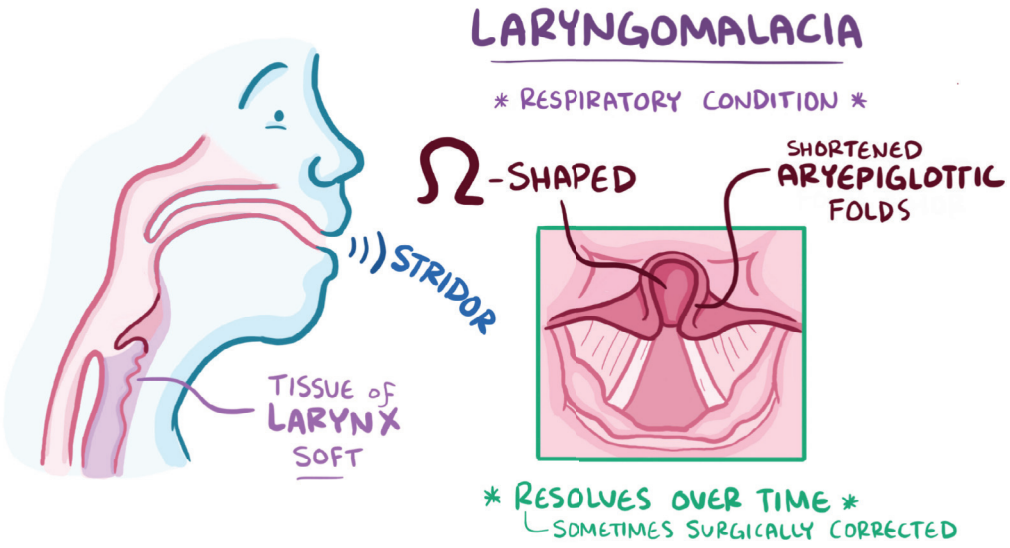

Figure 134.4 Illustration of unique shape of larynx seen in laryngomalacia.