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Laryngomalacia (non-acute stridor in infants)

Flow Diagram

Aim

This guideline aims to provide a tool for assessment of infants presenting with laryngomalacia and to guide their management.

Definition of terms

Laryngomalacia is defined as collapse of supraglottic structures during inspiration, resulting in intermittent air flow impedance and associated stridor.

Target Patient Population

This evidence summary applies to well infants presenting with a history of established “noisy breathing”. It does not apply to those with acute or severe airway obstruction.

Target Users

This guide is directed at health-care professionals engaged in the care of infants in the acute care setting.

Assessment

Laryngomalacia is the most common cause of stridor in newborns, affecting 60–75% of all infants with congenital stridor. These patients either self-present or are sometimes referred by their General Practitioner to the Emergency Department.

Laryngomalacia presents with inspiratory stridor that typically worsens with feeding, crying, supine positioning and agitation.

The symptoms begin at birth or within the first few weeks of life, peak at 6 to 8 months, and typically resolve by 12 to 24 months.

Initial acute assessment

Assessment of Severity

Severity level	Respiratory symptoms	Feeding symptoms
Mild	Inspiratory stridor with mild increase in work of breathing	Occasional cough or regurgitation
Moderate	Recent worsening of inspiratory stridor, significant increase in work of breathing	Frequent regurgitation Choking with feeds or other feeding issues
Severe	Inspiratory stridor with cyanosis, apnoea, chest wall signs of distress	Failure to thrive Evidence of aspiration

Risk factors for moderate to severe disease

- Gastroesophageal and Laryngopharyngeal Reflux
- Neurological disorders
- Secondary airway disease (SAL)
- Congenital heart disease
- Congenital anomalies, Syndromes, Genetic Disorders

Differential Diagnosis

- Reactive airway disease
- Inhaled foreign body
- Croup
- Epiglottitis
- Bronchiolitis
- Sub glottis stenosis
- Vallecular cyst

Along with monitoring vital signs, respiratory and general physical exam, it is practical to observe the infant while taking a feed and notice any difficulty or distress during feeding.

Stridor in Laryngomalacia is inspiratory.

Inspiratory stridor is caused by airway obstruction at the vocal cords or higher e.g. laryngomalacia, vallecular cyst, epiglottitis.

Biphasic stridor is caused by obstruction below the vocal cords e.g. subglottic stenosis, croup, subglottic cyst, subglottic haemangioma, vocal cord paralysis, laryngeal web, respiratory papillomatosis.

Expiratory stridor is usually associated with tracheal, bronchial, or pulmonary lesions e.g. tracheomalacia, complete tracheal ring, asthma, double aortic arch, pulmonary artery sling, aberrant innominate artery.

Ongoing assessment

Feeding: regurgitation, emesis, cough, choking, and slow feedings.

Growth: increased metabolic demand of coordinating eating and breathing against the obstruction can lead to weight loss and failure to thrive.

Respiratory:

- ***Common***: tachypnoea, suprasternal and substernal retractions
- ***Uncommon***:cyanosis, pectus excavatum, and obstructive sleep apnoea. Chronic hypoxia from airway obstruction can lead to pulmonary hypertension.

Warning signs

Respiratory	Feeding
Stridor with respiratory distress Dyspnoea with retractions Pectus excavatum Pulmonary hypertension Cor pulmonale Severe obstructive sleep apnoea	Choking with feeding Episodic cyanosis with feeding Recurrent aspiration pneumonia Failure to thrive

Management

Mild disease

- Conservative management with follow up with General Practitioner for weight gain and worsening of respiratory or feeding symptoms.
- Parents should be advised on positional therapy (feeding in upright position), feeding interventions (thickening formula or breast feed) and for treatment for reflux where appropriate.

Moderate to Severe disease

- Symptomatic management with airway management, supplemental oxygen and nasogastric feed as required.
- These patients need admission under the Medical team.
- These patients should be discussed with ENT team for an urgent consultation.

Companion Documents

- **References**
- **Literature Search Strategy**
- **Laryngomalacia Parent Information Leaflet**
- **GP Proforma Letter**