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Acute Stridor

Standard Operating Procedure (SOP)



Union of Myanmar Special region - 1
Pediatric (SOP)

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Union of Myanmar Special region - 1
Pediatric (SOP)

Acute Stridor

Definition

- High pitched sound resulting from turbulent air flow due to obstruction in the upper airway
- Primarily inspiratory

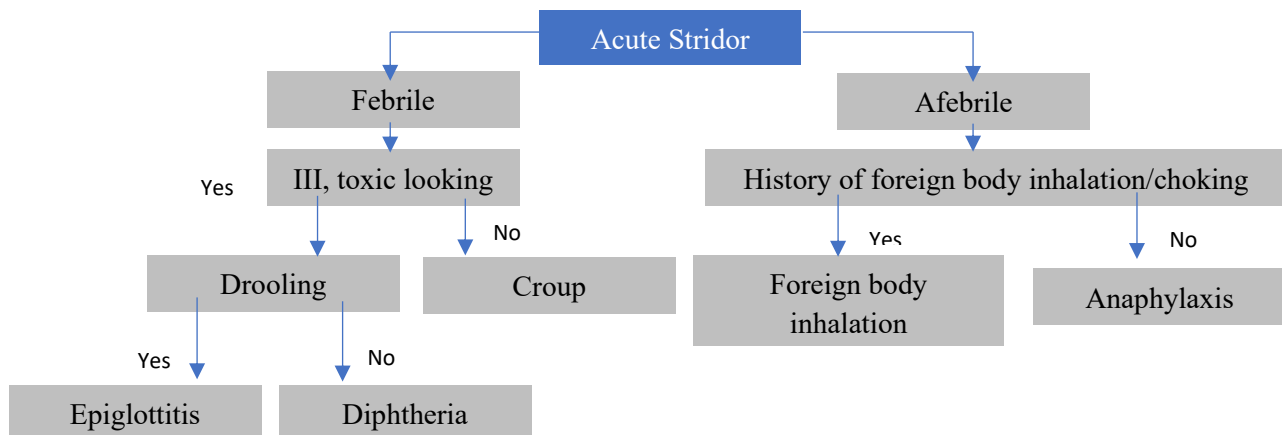
Common Causes: should be considered according to onset

- Acute stridor
 - Infection: croup, epiglottitis, diphtheria
 - Anaphylaxis
 - Inhaled foreign body

Make certain that you have excluded other causes before treating as "croup" in case of acute onset

- Chronic stridor (weeks to months)
 - Laryngomalacia

Approach to Common Differential Diagnoses of Acute Stridor



Initial Assessment and Management of Stridor

- History taking and physical examination
- If patient is distressed, defer further examination until equipments and facilities are available for emergency airway management
- Assess
 - Chest recession
 - Respiratory rate
 - Grunting
 - Accessory muscle use and flare of ala nasi
 - Breath sounds and air entry
 - Heart rate
 - Skin color
 - Mental status

- Monitor oxygen saturation with pulse oximeter if available and if the child accepts probe
- Give oxygen via face mask if it needs to maintain oxygen saturation >92%
- If the child is ill, toxic looking and drooling
 - Consider epiglottitis or diphtheria
 - Contact urgently with
 - A senior anesthetist and a surgeon or ENT surgeon to perform rapid sequence induction of anesthesia and endotracheal intubation/tracheostomy
 - PICU (pediatric intensive care unit)/ ICU (intensive care unit) team

Admission criteria

- Arrange immediate admission to hospital if you suspect a serious disorder:
 - Caused by infection: epiglottitis, bacterial tracheitis, peritonsillar abscess, retropharyngeal abscess, or laryngeal diphtheria.
 - Not caused by infection: foreign body, angioneurotic oedema, hypocalcaemic tetany, or ingestion of corrosives.
- Immediately admit a child who has moderate or severe croup, or impending respiratory failure.
- Most children will have mild croup, which can be managed at home. However, consider admission to hospital if any of the following are present. The child:
 - Has a history of severe obstruction, or previous severe croup, or known structural upper airways abnormalities (e.g. laryngomalacia, tracheomalacia, vascular ring, Down syndrome); these increase the risk of severe croup developing.
 - Is less than 6 months of age.
 - Is immunocompromised.
 - Has inadequate fluid intake, or is refusing liquids.
 - Has a poor response to initial treatment.
 - Has an uncertain diagnosis.
 - If there is significant parental anxiety, late evening or night-time presentation, the child's home is a long way from the hospital, or the parents have no transport.

SPECIFIC CONDITIONS

i) Croup

Key clinical features

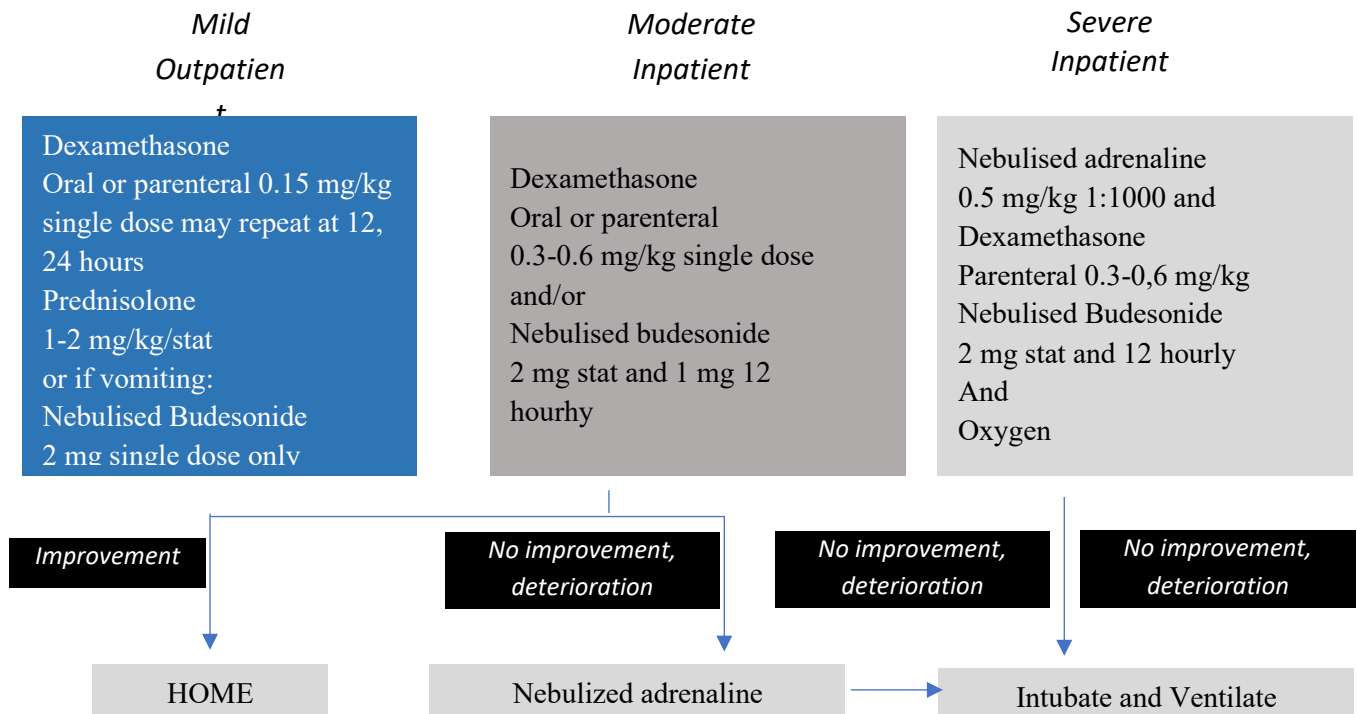
- *Acute onset of barking cough, inspiratory stridor and hoarseness*
- *Preceded by symptoms of a mild upper respiratory tract infection*

Assessment of severity

- *Mild*
 - *Occasional barking cough and no audible stridor at rest*
 - *No or mild suprasternal and/or intercostal recession*
 - *The child is happy and is prepared to eat, drink, and play*
- *Moderate*
 - *Frequent barking cough and easily audible stridor at rest*
 - *Suprasternal and sternal wall retraction at rest*
 - *No or little distress or agitation*
 - *The child can be placated and is interested in its surroundings*
- *Severe*
 - *Frequent barking cough with prominent inspiratory (and occasionally expiratory) stridor at rest*
 - *Marked sternal wall retractions*
 - *Significant distress and agitation, or lethargy or restlessness (a sign of hypoxaemia)*
 - *Tachycardia occurs with more severe obstructive symptoms and hypoxaemia*
- *Impending respiratory failure may develop regardless of the severity of the symptoms:*
 - *The presence of any of these signs overrides any other clinical signs:*
 - *Change in mental state, such as lethargy and listlessness or decreased level of consciousness.*
 - *Pallor*
 - *Dusky appearance*
 - *Tachycardia*

Management

Algorithm for the Management of Viral croup



Indications for transfer to ICU

- Severe croup, croup score 7-10 (See below)

Table 4.1 Croup Score

Score	1	2	3
Breath sounds	Normal	Harsh, wheeze	Delayed
Stridor	None	Inspiratory	Inspiratory and expiratory
Cough	None	Horse Cry	Bark
Recession/faring	None	Flaring, suprasternal recession	Flaring, suprasternal and intercostal recession
Cyanosis	None	In air	In oxygen 40%

Mild croup, 0-3; Moderate croup, 4-6; Severe croup, 7-10

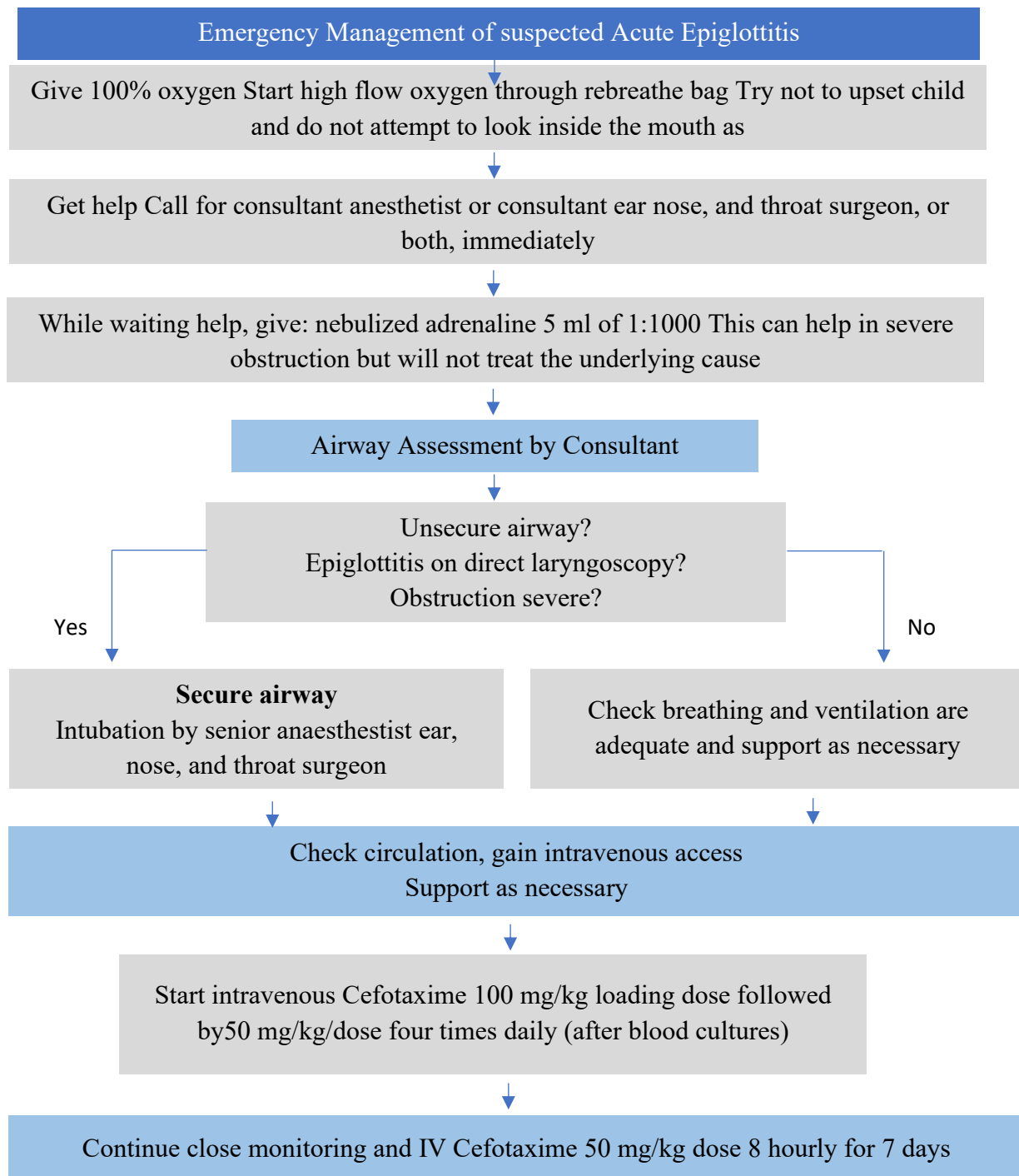
Advice to parents

- *Explain that croup is self-limiting and symptoms usually resolve within 48 hours, although occasionally they may last for up to a week*
- *Resolution of croup symptoms is usually followed by symptoms of upper respiratory tract infection*
- *Advise the use of paracetamol or ibuprofen to control fever and pain:*
 - *Do not over-or under-dress a child with fever*
 - *Tepid sponging is not recommended*
 - *Do not routinely give antipyretic drugs to a child with fever with the sole aim of reducing body temperature.*
- *Ensure an adequate fluid intake*
- *Do not advise humidified air (e.g. steam inhalation)*
- *Arrange to review the child on the next day.*
- *Advise parents to seek urgent medical advice:*
 - *If there is progression from mild to moderate airways obstruction, such as development of intermittent stridor at rest or increased effort of breathing (chest and suprasternal indrawing), as the child may need to be observed in hospital*
 - *If the child becomes toxic (pale, very high fever, tachycardic) as this may mean the child has an alternative diagnosis (e.g. bacterial tracheitis or epiglottitis)*
 - *Becomes cyanosed*
 - *Is unusually sleepy*
 - *Is struggling to breathe*
 - *Drooling and unable to take feed*
 - *Persistent high fever despite giving paracetamol*
- *Explain that cough medicines, decongestants, and short-acting beta-agonists are not effective. Croup is usually a viral illness and antibiotics are not needed.*

ii) Epiglottitis

- *Key clinical features*
- *Quiet stridor*
- *High fever*
- *Toxic looking*
- *Drooling of saliva*
- *Lack of immunization*

Management



iii) Diphtheria

Key clinical features

- *High fever*
- *Toxic looking*
- *Lack of immunization*
- *Yellowish/white to grey/black membrane on throat examination*
- *Cervical lymphnode enlargement with local edema*

Management

- *Throat swab and culture*
- *IV benzylpenicillin 50,000U/kg/dose 6 hourly for 10 days*
- *Antitoxin 60, 000 units IV [test dose 0.1 ml 1/1000 intradermal*
- *If >10 mm erythema (positive reaction), give graduated dose with epinephrine 10 µg/kg IM]*

iv) Anaphylaxis

Key clinical features

- *Exposure to allergen*

Management

(Refer Page-386 Anaphylactic shock)

v) Foreign Body Inhalation

- *Key clinical features*
- *Very sudden onset*
- *No prodromal symptoms*
- *History of foreign body/choking*

Management

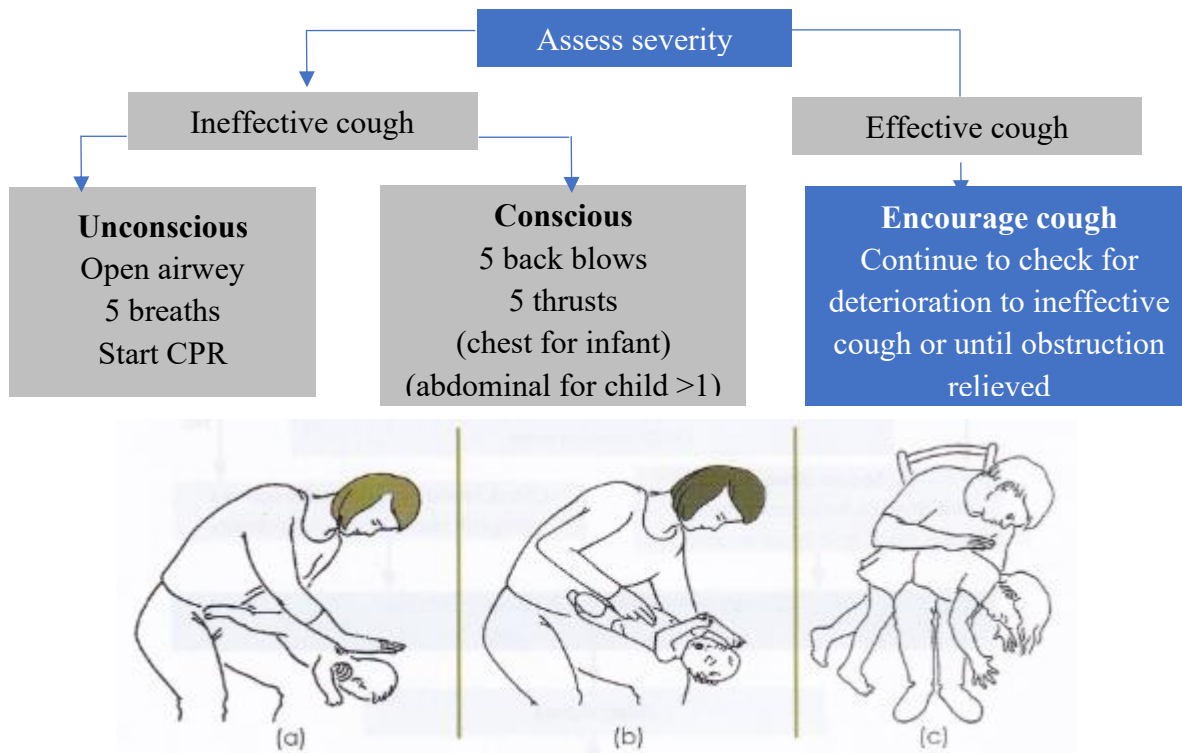


Fig.4.1. Back blows (a), chest thrusts (b) in an infant and back blows a small child (c)



Fig.4.2. Heimlich manoeuvre in a standing child

- Lay the infant on your arm or thing in a head down position
- Give 5 blows to the infant's back with heel of hand
- If obstruction persists, turn infant over and give 5 chest thrusts with 2 fingers, one finger below nipple level in midline (see diagram)
- If obstruction persists, check infant's mouth for any obstruction which can be removed
- If necessary, repeat sequence with back slaps again