

PEDIATRIC RESP DISTRESS

UPDATED: 3/08/2012



WEBER, MD

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Specific information needed

1. Present symptoms -- sudden or gradual onset.
2. History of oral exposures -- toys, food, chemicals, etc.
3. Associated symptoms -- cough, fever, upper respiratory symptoms, runny nose, sore throat, drooling, hoarseness.
4. Past medical problems.
5. Current medications.

Specific objective findings

1. Mental status -- alert, agitated, confused, somnolent.
2. Respiratory effort -- upper airway sounds, chest wall movement, use of accessory muscles, retractions (depressions between ribs on inspiration).
3. Audible breathing noise -- wheezes, cough, stridor.
4. Lungs by auscultation -- wheezes, crackles (wet sounds), clear lung fields, decreased breath sounds.
5. Other findings -- drooling, fever, skin color.

Treatment

1. Put patient in position of comfort (usually upright).
2. If respiratory arrest -- attempt to ventilate. Watch neck position carefully and adjust for maximum chest rise.
3. If patient has airway obstruction from foreign body:
 - a. Encourage coughing efforts with partial obstruction.
 - b. If no air movement, visualize airway with laryngoscope and remove any obvious foreign body.
 - c. Reposition the airway.
 - d. Attempt to ventilate.
 - e. If unsuccessful, administer up to 5 subdiaphragmatic abdominal thrusts for children or 5 back blows and 5 chest thrusts for infants.
 - f. Reposition the airway and attempt to ventilate.
 - g. If unsuccessful, consider percutaneous cricothyrotomy with 14 g. angiocath if qualified.
4. Apply O₂, high flow (10-15 L/min or volume sufficient to keep bag inflated) for significant respiratory distress. Titrate to pulse oximetry > 90% if possible.
5. If patient is ventilating inadequately:
 - a. Assist ventilations as needed with bag-valve-mask and high flow oxygen.
 - b. Consider intubation if less invasive means are inadequate.
6. Assist and consider treatment for the following problems if respiratory distress is severe and patient does not respond to proper positioning and administration of O₂:
 - a. Croup and Epiglottitis
 - i. Prepare to assist ventilations if child fatigues and is unable to maintain adequate ventilations.
 - ii. Allow patient to remain upright.

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- iii. Assist with removal of secretions if needed.
- iv. Administer albuterol via nebulizer (see albuterol protocol).
- v. Consider nebulized saline as another treatment option.
- b. Asthma
 - i. Administer albuterol via nebulizer (see albuterol protocol).
 - ii. Administer SQ epinephrine if no improvement with albuterol (see epinephrine protocol).
- 7. If diagnosis is unclear, transport patient rapidly with supplemental O₂, and prepare to assist ventilations if child becomes fatigued or sustains respiratory arrest.

Specific precautions

1. Children with croup, epiglottitis or laryngeal edema usually have respiratory arrest due to exhaustion or spasm. They may still be ventilated with pocket mask or bag-valve-mask (BVM) technique. Don't attempt intubation unless these techniques fail.
2. Intubation of children in the field is infrequently performed, and therefore carries some risk. Do not attempt intubation if a simpler skill will manage the airway.
3. Bag-valve-mask in small children carries the risk of excessive pressures and possible pneumothorax. It is easy to get overly excited and over-ventilate.
4. In respiratory distress of sudden onset, think of foreign body aspiration. The mouth is a major sensory organ for children (as well as others) and admits a multitude of obstructive hazards.
5. There may be a call to attend a child who has allegedly aspirated something that was in his or her mouth, but is now asymptomatic. This child may not need emergency intervention, but should be seen by a physician. Once the object has settled in the lung and is not irritating a major airway, it can rapidly become asymptomatic while still requiring removal to prevent further complications.