

# Protocol 9-4

**SECTION:** Pediatric General Medical Emergencies

**PROTOCOL TITLE:** Airway – Obstruction/Foreign Body

**REVISED:** 06/2017

## FOREIGN BODY ASPIRATION

### OVERVIEW:

Airway obstruction is one of the most readily treatable yet immediately life-threatening emergencies faced by pre-hospital providers. Approximately 3000 deaths occur each year in the United States from choking. Most of these deaths are in children younger than four years of age. In children, you should consider the possibility of foreign body aspiration in any patient who presents with ongoing respiratory distress or resolved respiratory distress. The child may have a history of a sudden onset of respiratory distress with choking and cough, by an absence of symptoms and then followed by delayed stridor or wheezing. This cycle occurs when the foreign body is not cleared from the airway but passes distally into the smaller airways. In children, a foreign body may also lodge in the esophagus, causing stridor. Patients may present with any degree of obstruction from simple hoarseness cleared with a cough to complete obstruction requiring a surgical airway, such as a cricothyrotomy. Significant airway obstruction can occur at any time. Early recognition and treatment is essential to a successful outcome. Because of this, it is important to distinguish this problem from more serious conditions that cause sudden respiratory failure, but are treated differently.

HPI	Signs and Symptoms	Considerations
<ul style="list-style-type: none"> <li>Age</li> <li>What was happening at onset? (Missing Toys?)</li> <li>Fever</li> <li>Traumatic mechanism</li> <li>Improvement or worsening with movement</li> <li>Past medical / surgical history</li> <li>Medications</li> </ul>	<ul style="list-style-type: none"> <li>Stridor, hoarseness, wheezing</li> <li>Ineffective respirations</li> <li>Universal sign of choking</li> <li>Tachycardia</li> <li>Tachypnea</li> <li>Flushing, cyanosis, chills, diaphoresis</li> <li>Presence of drooling, trismus, angio-neurotic edema</li> </ul>	<ul style="list-style-type: none"> <li>Croup</li> <li>Epiglottitis</li> <li>Angio-neurotic edema</li> <li>Traumatic obstruction</li> <li>Chemical or thermal injury</li> <li>Abscesses</li> <li>Tumors and cysts</li> </ul>

### FBAO – CONSCIOUS PATIENT: ≥ 1 YEAR OF AGE

	EMR	EMT	A	I	P
1. For the suspected conscious choking victim, quickly ask, "Are you choking?" If the victim indicates "yes" by nodding his head without speaking, this will verify that the victim has severe airway obstruction.	•	•	•	•	•
a. Note: If the patient has a mild obstruction and is coughing forcefully; do not interfere with the patient's spontaneous coughing / breathing effort.	•	•	•	•	•
2. Apply abdominal thrusts (Heimlich maneuver) in rapid sequence until the obstruction is relieved.	•	•	•	•	•

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	EMR	EMT	A	I	P
a. If the choking patient is obese and the rescuer cannot encircle the patient's abdomen, use chest thrusts instead of abdominal thrusts.	•	•	•	•	•
b. If the choking patient is in the late stages of pregnancy, use chest thrusts instead of abdominal thrusts.	•	•	•	•	•
3. If the patient becomes unresponsive, carefully support the patient to the ground and follow the FBAO – UNCONSCIOUS PATIENT GREATER THAN OR EQUAL TO 1 YEAR OF AGE protocol.	•	•	•	•	•
4. Transport and perform ongoing assessment.		•	•	•	•

### FBAO – CONSCIOUS PATIENT: ≤ 1 YEAR OF AGE

	EMR	EMT	A	I	P
1. Assess the patient to determine the extent of the obstruction. When the airway obstruction is mild, the infant can cough and make some sounds. When the airway obstruction is severe, the infant cannot cough or make any sound.	•	•	•	•	•
2. If FBAO is mild, do not interfere. Allow the victim to clear the airway by coughing while you observe for signs of severe FBAO.	•	•	•	•	•
3. If the FBAO is severe (i.e., the victim is unable to make a sound), deliver 5 back blows (slaps) followed by 5 chest thrusts.	•	•	•	•	•
4. If the patient becomes unresponsive, follow the FBAO – UNCONSCIOUS PATIENT LESS THAN 1 YEAR OF AGE protocol.	•	•	•	•	•
5. Transport and perform ongoing assessment.		•	•	•	•

### FBAO -- UNCONSCIOUS PATIENT: ≥ 1 YEAR OF AGE

	EMR	EMT	A	I	P
1. If the patient was previously conscious with an airway obstruction, carefully support the patient to the ground.	•	•	•	•	•
2. Use head-tilt, chin lift or jaw thrust (suspected trauma) to open airway. Look for an object in the patient's mouth. Use a finger sweep only when you can see solid material obstructing the airway.	•	•	•	•	•
3. Assess the patient's breathing.	•	•	•	•	•
4. If respirations are absent, deliver 2 breaths. If chest rise is not detected, reposition the airway, make a	•	•	•	•	•

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	EMR	EMT	A	I	P
better mask seal and try again.					
5. If unable to deliver rescue breaths, start CPR.	•	•	•	•	•
6. Each time the airway is opened during CPR, look for an object and remove if found with a finger sweep.	•	•	•	•	•
7. If the FBAO is not relieved by BLS maneuvers, attempt direct visualization of the airway via laryngoscopy. If the obstruction is visualized, use forceps to remove the obstruction.			•	•	•
8. If the FBAO is not relieved by BLS maneuvers or laryngoscopy, perform a <i>cricothyrotomy</i> . For children younger than 12, a needle cricothyrotomy with percutaneous transtracheal (jet) ventilation is the surgical airway of choice.					•
9. Transport and perform ongoing assessment.		•	•	•	•

## FBAO -- UNCONSCIOUS PATIENT: ≤ 1 YEAR OF AGE

	EMR	EMT	A	I	P
1. If the patient was previously conscious with an airway obstruction, carefully position the patient for CPR.	•	•	•	•	•
2. Use head-tilt, chin lift or jaw thrust (suspected trauma) to open airway. Look for an object in the patient's mouth. Use a finger sweep only when you can see solid material obstructing the airway.	•	•	•	•	•
3. Assess the patient's breathing.	•	•	•	•	•
4. If respirations are absent, deliver 2 breaths. If chest rise and fall is not detected, reposition the airway, make a better mask seal and try again.	•	•	•	•	•
5. If unable to deliver rescue breaths, start CPR.	•	•	•	•	•
6. Each time the airway is opened during CPR, look for an object and remove if found with a finger sweep.	•	•	•	•	•
7. If the FBAO is not relieved by BLS maneuvers, attempt direct visualization of the airway via laryngoscopy. If the obstruction is visualized, use forceps to remove the obstruction.			•	•	•
8. Transport and perform ongoing assessment.		•	•	•	•

## FOREIGN BODY ASPIRATION

### PEARLS:

1. Abnormal auscultative sounds are more inspiratory if the foreign body is in the extra-thoracic trachea. If the object is in the intra-thoracic trachea, noises will be symmetric but sound more prominent in the central airways. The sounds are a coarse wheeze (sometimes referred to as an inspiratory stridor) heard with the same intensity over the entire chest.
2. Once the foreign body passes the carina, the breath sounds are usually asymmetric. However, remember that the chest of younger patients transmits sound well, and the stethoscope head is often bigger than the lobes being auscultated. A lack of asymmetry should not dissuade the provider from considering the diagnosis.