Pediatric Airway Foreign Body (FB) Management Guideline

Child with history/exam concerning for airway FB[a] *(see exclusion criteria)*[b]

Concern for complete airway obstruction[c]

Yes

- Emergent consult to difficult airway/anesthesia & ENT
- Alternating 5 back blows and 5 chest thrusts for infants[d]
- Heimlich maneuver (5 abdominal thrusts) for children[d]
- After each cycle of back blows/chest thrusts or Heimlich maneuver, check airway patency and remove visible FBs (do NOT perform blind finger sweeps)
- Start CPR beginning with compressions if unresponsiveness ensues
- Direct laryngoscopy with Magill forceps to remove FB if unable to dislodge or unresponsiveness ensues
- Intubation with advancement of FB to R mainstem bronchus if FB below vocal cords
- Cricothyrotomy if unable to remove FB above vocal cords[e]
- Consult pediatric pulmonology and proceed to OR for FB removal and definitive airway as needed

No

Respiratory distress

Yes

- NPO
- Consult ENT for possible bronchoscopy

No

Obtain inspiratory and expiratory CXR
OR
AP and bilateral lateral decubitus CXR in young children who cannot perform inspiratory and expiratory CXR

Normal CXR[f]

Asymptomatic AND Normal exam

- Primary MD follow up in 2-3 days
- Consider repeat CXR if symptoms develop
- ED return precautions[g]

Concerning history for witnessed aspiration AND Persistent symptoms OR Abnormal exam findings

Abnormal CXR[h]

- NPO
- Consult ENT for possible bronchoscopy
- If going to OR for bronchoscopy, consult pediatric pulmonology

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Authors: MB Bernardin, S Early, E Gov-Ari, R Nevel, Z Ner

Footnotes:

a. Most common symptoms following aspiration of a FB are persistent coughing (most frequent), difficulty breathing, and wheezing. A history of a witnessed choking event is highly suggestive of acute aspiration with a sensitivity of up to 93%. The classic clinical triad (cough, focal wheeze, and decreased breath sounds) present in only 14% of patients.[1]
b. Exclusion criteria: adults > 18 years of age, known abnormal airway, tracheostomy
c. Signs of complete upper airway (larynx or trachea) obstruction: sudden choking +/- vomiting, severe respiratory distress, inability to speak/cough, cyanosis, altered mental status progressing rapidly to unconsciousness and cardiopulmonary arrest[2]
d. Back blows/chest thrusts and Heimlich maneuver should NOT be performed in children with partial upper airway obstructions (who can speak/cough) due to risk of turning a partial into a complete airway obstruction.[1,2]
e. Cricothyrotomy is recommended for airway FB above the vocal cords if unable to remove with Magill forceps. This procedure should be performed by ENT if possible:
    a. Needle cricothyrotomy for children < 12 years[2]
    b. Surgical cricothyrotomy for children >12 years[2]
f. CXRs are frequently normal (30%) in the setting of aspirated FBs. Normal CXR does NOT rule out the presence of an aspirated FB as atelectasis/consolidation/air trapping is frequently not appreciable and many FBs are radiolucent.[3]
g. ED return precautions: development of persistent cough or respiratory distress
h. CXR findings suggestive of possible aspirated FB: visible radio-opaque FB, segmental or lobar consolidation or collapse/atelectasis, hyperinflation distal to obstruction causing air trapping, mediastinal shift[3]

References:

1. Shaw KN, et al. “Fleisher & Ludwig’s Textbook of Pediatric Emergency Medicine, 7th Edition.” Lippincott Williams & Wilkins, 2016.
2. Loftis L, et al. “Emergency evaluation of acute upper airway obstruction in children,” UpToDate, 2024.
3. Ruiz FR, et al. “Airway foreign bodies in children,” UpToDate, 2024.