

SWESEMs utbildningsutskott

Rubrik

Främmande kropp i luftväg

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Introduktion

Misstanke om främmande kropp i luftvägen framkommer ofta från anamnesen. Tillståndet bör också misstänkas när en person plötsligt får svårt att andas. Plötslig hosta, stridor, svårighet att prata, hemoptyx och kräkning¹ är andra vanligt förekommande symtom. Främmande kropp i luftvägen räknas som ett livshotande tillstånd och patienten handläggs enligt Initialt omhändertagande. Detta dokument fokuserar på färdigheten att handlägga främmande kropp i luftvägen, som ryms däri.

Kompetensen kan tränas med hjälp av medsittning av mer erfaren kollega, och övas på modeller med olika grad av realism. Oavsett kan medsittningsdokumentet för Främmande kropp luftväg användas.

Vid specialisttentamen får Läkaren ett scenario där färdigheten att handlägga främmande kropp i luftvägen bedöms. Tillgänglig utrustning på begäran är mask och blåsa, laryngoskop, Magills tång, endotrakealtuber och utrustning för att kunna utföra koniotomi och jet-insufflation.

Nedan visas medsittningsdokumentet, följt av kommentarer och referenser.

1. Förberedelser

- Förbereder utrustning som kan behövas
- Kontaktar ÖNH och/eller narkos
- Läkaren gör en korrekt bedömning om patienten är:
 - Vid medvetande, pratar, hostar effektivt
 - Medvetandesänkt, oförmögen att prata, tilltagande cyanos, hostar ineffektivt
 - Medvetslös

2. Åtgärder

Vid medvetande, pratar, effektiv hosta²

- Observerar, re-evaluerar tills främmande kropp är avlägsnad

Medvetandesänkt, oförmögen att prata, tilltagande cyanos, ineffektiv hosta³

- Ryggdunkningar⁴ mellan skulderblad x 5. Barn hålls med huvudet lägre.
- Buk- eller brösttryck x 5. Buktryck för alla utom barn < 1 år och uppenbart gravida. Barn hålls med huvudet lägre.
 - Buktryck⁵: Heimlich manöver eller motsvarande
 - Brösttryck⁶: sternalt som vid HLR men med snabbare intryckning och lägre frekvens.
- Re-evaluerar och upprepar⁷ tills patientens tillstånd förändras

Medvetslös⁸

- Inspekterar munhålan; utför "finger sweep"⁹ x 1 enbart om den främmande kroppen är synlig
- Öppnar luftvägen (t ex head-tilt / chin-lift) och gör 5 försök till inblåsning om patienten är ett barn
- Påbörjar HLR¹⁰
- Utför laryngoskopi¹¹ och bedömer främmande kroppens lokalisering

Synlig och ovanför stämbanden

- Försöker ta bort kroppen med hjälp av Magills tång
 - Koniotomi alt nål cricotyroidotomi om det inte går att ta bort kroppen
- Re-evaluerar effekt av gjorda åtgärder

Osynlig eller distalt om stämbanden

- Endotrakeal intubation; puttar den främmande kroppen ner i en bronk
- Backar tuben till normalläge och ventilerar den andra lungan

3. Kontroller/planering efter att det akuta luftvägshotet är handlagt

- Utesluter blödning av främmande kropp¹²
- Tar beslut om bronkoskopi krävs för att utesluta/handlägga kvarvarande främmande kropp¹³
- Utesluter att skador av buk-/bröstkompresioner uppstått¹⁴
- Tar beslut om infektionsrisk¹⁵ föranleder uppföljning

KOMMENTARER

1-Kliniska fynd

“Clinical presentation can range from chronic nonspecific respiratory complaints to acute airway obstruction.⁵⁰ In most aspiration cases, foreign body presence is suspected after a thorough history. The most dramatic cases typically involve a history of what is commonly termed the “café coronary”: The patient attempts to swallow a food (usually meat) bolus larger than the esophagus can accept. The bolus lodges in the hypopharynx or trachea. Often there is confusion over whether the patient is having a myocardial infarction or has an obstructing foreign body, but the conscious cardiac patient is able to speak. Patients with airway foreign bodies may exhibit noisy breathing, inspiratory stridor, vomiting, and possibly slight hemoptysis.⁴⁰

Some patients may give a history similar to that in café coronary, with resolution of major symptoms. These symptoms—a choking sensation accompanied by respiratory distress with coughing, wheezing, and dyspnea—occur in up to one half of patients who aspirate and are collectively known as the penetration syndrome (object penetrates airspace).⁴⁵ Symptom resolution may result from spontaneous clearance of the foreign body by coughing. In some cases, coughing does not eject the foreign body completely but rather results in its impaction in the subglottic region.⁴⁷ A retained airway foreign object should be considered in cases in which the patient history is one of perceived foreign body followed by cough with incomplete (or even complete) post-tussive symptom resolution.

In a 20-year series of adult and pediatric patients with suspected foreign body aspiration, sudden onset of choking and intractable cough were present in one half of the cases, with eventual foreign body identification.⁴⁵ In addition to coughing and choking, stridor is a frequent component of an acute aspiration episode in patients of all ages.⁴⁷ Symptom distribution is similar in adult and in pediatric patients,⁴⁵ but choking and wheezing appear more prominently in the pediatric literature. In a series of 87 pediatric patients with suspected foreign body, 96% had a history of a choking crisis.⁴³ Wheezing is common, having been reported in up to 75% of patients from 8 to 66 months of age with airway foreign bodies.^{41,46} (Thomas 2009)

2-Vid medvetande, effektiv hosta

Hos barn: “Patients with partial obstruction from a foreign body are another category in which expectant management is advised until care is transferred to a consultant skilled in fiberoptic or endoscopic removal.” (Tintinalli 2011 Chapter 29)

“A spontaneous cough is likely to be more effective and safer than any manoeuvre a rescuer might perform.” (Biarent 2010)

“If the child is coughing effectively, no external manoeuvre is necessary. Encourage the child to cough, and monitor continually.” (Biarent 2010)

3-Medvetandesänkt, oförmögen att prata, tilltagande cyanos, ineffektiv hosta

“if the child is still conscious but has absent or ineffective coughing, give back blows. If back blows do not relieve the FBAO, give chest thrusts to infants or abdominal thrusts to children. These manoeuvres create an artificial cough, increasing intrathoracic pressure and dislodging the foreign body.” (Biarent 2010)

“if coughing is absent or ineffective and the object completely obstructs the airway, the child will rapidly become asphyxiated. Active interventions to relieve FBAO are therefore required only when coughing becomes ineffective, but they then need to be commenced rapidly and confidently. The majority of choking events in infants and children occur during play or eating episodes, when a carer is usually present; thus, the events are frequently witnessed and interventions are usually initiated when the child is conscious.” (Biarent 2010)

“Back blows, chest thrusts and abdominal thrusts all increase intrathoracic pressure and can expel foreign bodies from the airway. In half of the episodes more than one technique is needed to relieve the obstruction.⁵⁵ There are no data to indicate which measure should be used first or in which order they should be applied. If one is unsuccessful, try the others in rotation until the object is cleared.” (Biarent 2010)

“Should complete obstruction occur before intervention, perform the Heimlich maneuver for children >1 year of age (see Chapter 15, Resuscitation of Children). For infants, five back blows followed by five chest thrusts are recommended. Repeat these maneuvers and intersperse with attempts at ventilation if the child remains conscious.” (Tintinalli 2011 Chapter 29)

“The optimal management of a choking infant is controversial regarding whether back blows, chest thrusts, or abdominal thrusts should be the initial intervention. Data are limited, but the American Heart Association, the National Academy of Science, the American Academy of Pediatrics, and the American Thoracic Society recommend up to five back blows with the patient in a head-down position, followed by chest thrusts.” (Thomas 2009)

4-Ryggdunkningar

“Back blows are often recommended for infants and small children with foreign body airway obstruction. Some authors have argued that back blows may be dangerous and may drive foreign bodies deeper into the airway, but there is no convincing evidence of this phenomenon.^{29,30} As for the other techniques, anecdotal evidence suggests that back blows are effective.^{31–33} However, no convincing data indicate that back blows are more or less effective than abdominal or chest thrusts. Back blows may produce a more pronounced increase in airway pressure, but over a shorter period of time than the other techniques. The AHA guidelines suggest back blows in the head-down position (see Fig. 3–2D) and head-down chest thrusts in infants and small children with foreign body airway obstruction.” (Reardon 2009)

“From a practical standpoint, back blows should be delivered with the patient in a head-down position, which is easier in infants than in larger children.” (Reardon 2009)

“Back blows in infants:

- Support the infant in a head downward, prone position, to enable gravity to assist removal of the foreign body.
- A seated or kneeling rescuer should be able to support the infant safely across their lap.
- Support the infant’s head by placing the thumb of one hand, at the angle of the lower jaw, and one or two fingers from the same hand, at the same point on the other side of the jaw.
- Do not compress the soft tissues under the infant’s jaw, as this will exacerbate the airway obstruction.
- Deliver up to five sharp back blows with the heel of one hand in the middle of the back between the shoulder blades.
- The aim is to relieve the obstruction with each blow rather than to give all five.” (Biarent 2010)

“Back blows in children over 1 year.

- Back blows are more effective if the child is positioned head down.
- A small child may be placed across the rescuer’s lap as with the infant.
- If this is not possible, support the child in a forward leaning position and deliver the back blows from behind.” (Biarent 2010)

5-Buktryck

“The technique of subdiaphragmatic abdominal thrusts to relieve a completely obstructed airway was popularized by Dr. Henry Heimlich and is commonly referred to as the “Heimlich maneuver.”²¹ The technique is most effective when a solid food bolus obstructs the larynx. In the conscious patient, stand behind the upright patient. Circle the arms around the patient’s midsection with the radial side of the clenched fist placed on the abdomen, midway between the umbilicus and the xiphoid. Then grasp the fist with the opposite hand and deliver an inward and upward thrust to the abdomen (Fig. 3–2A). A successful maneuver will cause the obstructing agent to be expelled from the patient’s airway by the force of air exiting the lungs. Abdominal thrusts can also be performed on unconscious, supine patients. For this position, kneel next to the patient’s pelvis facing cephalad (see Fig. 3–2B). Place the palmar bases of the hands in an overlapping fashion on the upper abdomen, in the same location as in the upright technique. Deliver inward, upward thrusts with the same objective as the upright method.” (Reardon 2009)

“Abdominal thrusts for children over 1 year.

- Stand or kneel behind the child; place your arms under the child’s arms and encircle his torso.
- Clench your fist and place it between the umbilicus and xiphisternum.
- Grasp this hand with the other hand and pull sharply inwards and upwards.
- Repeat up to five times.
- Ensure that pressure is not applied to the xiphoid process or the lower rib cage – this may cause abdominal trauma.” (Biarent 2010)

“Abdominal thrusts are relatively contraindicated in pregnant patients and those with protuberant abdomens. Potential risks of subdiaphragmatic thrusts include stomach rupture, esophageal perforation, and mesenteric laceration, compelling the rescuer to weigh the risks and benefits of this maneuver.^{22–27} Use a chest position for pregnant patients (see Fig. 3–2C).” (Reardon 2009)

“The AHA does not recommend abdominal thrusts in infants, because infants may be at higher risk of iatrogenic injury.” (Reardon 2009)

“The most significant difference from the adult algorithm is that abdominal thrusts should not be used for infants. Although abdominal thrusts have caused injuries in all age groups, the risk is particularly high in infants and very young children. This is because of the horizontal position of the ribs, which leaves the upper abdominal viscera much more exposed to trauma. For this reason, the guidelines for the treatment of FBAO are different between infants and children.” (Biarent 2010)

6-Brösttryck

“Alternatively, manage foreign body airway obstruction with chest compressions (back blows in an inverted infant) identical to those delivered during cardiopulmonary resuscitation (CPR) (see Fig. 3–2D). The theory is the same as for abdominal thrusts, to expel the obstructing agent by forcing air out of the lungs. Some data suggest that chest compressions may create higher peak airway

pressures than the Heimlich maneuver.²⁸ A combined (simultaneous) chest compression and subdiaphragmatic abdominal thrust may produce even higher peak airway pressures and should be considered when the standard techniques fail.” (Reardon 2009)

“Chest thrusts for infants.

- Turn the infant into a head downward supine position. This is achieved safely by placing the free arm along the infant’s back and encircling the occiput with the hand.
- Support the infant down your arm, which is placed down (or across) your thigh.
- Identify the landmark for chest compressions (on the lower half of the sternum, approximately a finger’s breadth above the xiphisternum).
- Give five chest thrusts; these are similar to chest compressions but sharper and delivered at a slower rate.” (Biarent 2010)

7-Re-evaluera och upprepa

“Following the chest or abdominal thrusts, re-assess the child. If the object has not been expelled and the victim is still conscious, continue the sequence of back blows and chest (for infant) or abdominal (for children) thrusts.” (Biarent 2010)

8-Medvetslös

“If the child with FBAO is, or becomes, unconscious, place him on a firm, flat surface. Call out, or send, for help if it is still not available. Do not leave the child at this stage; proceed as follows:

Airway opening.

Open the mouth and look for any obvious object. If one is seen, make an attempt to remove it with a single finger sweep. Do not attempt blind or repeated finger sweeps – these can impact the object more deeply into the pharynx and cause injury.

Rescue breaths.

Open the airway using a head tilt/chin lift and attempt five rescue breaths. Assess the effectiveness of each breath: if a breath does not make the chest rise, reposition the head before making the next attempt.

Chest compressions and CPR.

- Attempt five rescue breaths and if there is no response (moving, coughing, spontaneous breaths) proceed to chest compressions without further assessment of the circulation.
- Follow the sequence for single rescuer CPR (step 7B above) for approximately a minute before summoning the EMS (if this has not already been done by someone else).
- When the airway is opened for attempted delivery of rescue breaths, look to see if the foreign body can be seen in the mouth.
- If an object is seen, attempt to remove it with a single finger sweep.
- If it appears the obstruction has been relieved, open and check the airway as above; deliver rescue breaths if the child is not breathing.
- If the child regains consciousness and exhibits spontaneous effective breathing, place him in a safe position on his side (recovery position) and monitor breathing and conscious level whilst awaiting the arrival of the EMS.” (Biarent 2010)

9-Finger Sweep

“The 2005 American Heart Association guidelines recommend that a blind finger sweep **NOT** be used in the unconscious patient with an obstructed airway unless during the course of CPR, solid material becomes visible in the airway” (Barker 2012)

“Proximal foreign body removal without direct visualization is attempted using the finger sweep, but this technique is losing favor in pediatric and adult patients. In infants, the larynx is higher, at the level of the fourth cervical vertebra; by age 4 years, it is at the C5–6 level. Blind finger sweeping has resulted in conversion of partial to complete airway obstruction when objects are displaced into the subglottic space. Finger sweeping also is less preferable in adults; abdominal thrusts and back blows are safer and at least as efficacious.⁴⁷ These procedures produce increased intraluminal pressure in the trachea, thereby forcing objects out into the pharynx, from which they are easily removed. (Thomas 2009)

10-Hjärtlungräddning

“Unresponsive patients with presumed FBAO should receive cardiopulmonary resuscitation (CPR), as chest thrusts in these patients may produce higher airway pressures when compared with abdominal thrusts.” (Barker 2012)

“Give CPR to all unconscious patients with airway obstruction. It is important to realize that more than one technique is often required to clear foreign body airway obstruction, so multiple techniques should be applied in a rapid sequence until the obstruction is relieved.¹³ Perform a finger sweep of the patient’s mouth only if a solid object is seen in the airway. It is recommended to suction newborns rather than give them back blows or abdominal thrusts.” (Reardon 2009)

11-Laryngoskopi

“If the child becomes unconscious, perform direct laryngoscopy.” (Tintinalli 2011 Chapter 29)

“If the foreign body is supraglottic, it can possibly be removed using Magill forceps during laryngoscopy.” (Tintinalli 2011 Chapter 29)

“If indirect efforts fail to remove foreign bodies from patients in extremis, direct laryngoscopic visualization during intubation may reveal a proximal foreign object that can be removed with Magill forceps.” (Thomas 2009)

”If the obstruction is subglottic, intubation or bag-mask ventilation may push the foreign body into a mainstem bronchus, allowing temporary ventilation of the other lung until removal with bronchoscopy. Subglottic surgical approaches, such as needle cricothyrotomy and supraglottic rescue devices, are rarely helpful in this setting because the obstruction usually lies within the trachea, below the level of the cricothyroid membrane.” (Tintinalli 2011 Chapter 29)

“If a foreign body is not visualized on laryngoscopy, intubation of the patient may be indicated. Intubation may force the foreign body distally, especially if the endotracheal tube tip is passed beyond the carina. Placement of the endotracheal tube into the right main bronchus may displace the foreign body into the right bronchus, allowing oxygenation and ventilation through the left-sided pulmonary tree when the endotracheal tube is withdrawn back to normal position proximal to the carina. In cases in which intubation fails because of positioning of the foreign object, surgical cricothyrotomy (needle cricothyrotomy in young children) is indicated. Cricothyrotomy may bypass proximal obstruction, allowing sufficient oxygenation to bridge the time gap to definitive care by surgical subspecialists.” (Thomas 2009)

12-Blödningsrisk

“Care should be taken when foreign objects appear to be impaled in the oropharynx because postremoval hemorrhage is a possibility.” (Thomas 2009). Blödningskontroll kan ske genom kontroll att hemoptys inte föreligger hos vakna patienter, med fiberlaryngoskopi i endotrachealtub hos intuberade. Föremålets karaktär och borttagandets ev trauma kan vägas in.

13-Kvarstående främmande kropp

“If the object is expelled successfully, assess the child’s clinical condition. It is possible that part of the object may remain in the respiratory tract and cause complications. If there is any doubt, seek medical assistance.” (Biarent 2010)

14-Buktrauma

“Abdominal thrusts may cause internal injuries and all victims treated with abdominal thrusts should be examined by a doctor.” (Biarent 2010)

“Potential risks of subdiaphragmatic thrusts include stomach rupture, esophageal perforation, and mesenteric laceration, compelling the rescuer to weigh the risks and benefits of this maneuver.” Reardon 2009

15-Infektionsrisk

“Even after foreign body removal, late complications may occur. Injury from airway fish bones, even after removal, can lead to deep tissue infection, such as cervical spondylodiskitis.⁵⁹ Patients in whom an airway foreign body was removed should be observed for development of sequelae, with postdischarge follow-up evaluation within a few days for reassessment. In pediatric patients, education should focus on preventive efforts to reduce the likelihood of a repeated aspiration episode.” (Thomas 2009)

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