Choking 1: foreign-body airway obstruction in adults

Foreign-body airway obstruction (FBAO) (choking) is a life-threatening emergency. In England and Wales in 2016, 252 deaths from choking were reported, with almost 30% of these in people aged 80 years and over. Alarmingly, over 60% of deaths from choking in 2016 occurred in hospitals and other healthcare settings (Office for National Statistics, 2017).

Each year in the UK, approximately 16,000 adults and children are treated in emergency departments for FBAO (Handley et al, 2005). In 2016 in London, there were 1,916 choking episodes of such severity that a 999 call was made to request an ambulance; 999 calls for choking generally coincide with mealtimes (Pavitt et al, 2017).

In adults, the incidence of choking appears to increase with age (Soroudi et al, 2007). Nurses must be able to recognise and effectively treat FBAO. As most FBAO events are associated with eating, they are often witnessed, thereby providing an opportunity for early intervention while the patient is still conscious.

Back blows (slaps), chest thrusts and abdominal thrusts are manoeuvres that can increase intra-thoracic pressure and expel foreign bodies from the airway. In 50% of FBAO episodes, back blows alone are effective at relieving the obstruction; however, in 50% of cases more than one technique is needed to relieve the obstruction (Perkins et al, 2017).

Causes of FBAO
Choking usually occurs while the person is eating or drinking and can be associated with muscle, neurological or cerebral impairment (Pavitt et al, 2017). Most deaths from choking are caused by food (87%), while small objects – a particular problem in children – are the cause of 13% of choking-related deaths (ONS, 2017).

People at increased risk of FBAO include those with any of the following conditions or characteristics:

- Altered level of consciousness;
- Drug and/or alcohol intoxication;
- Neurological impairment, with reduced swallowing and cough reflexes (for example, stroke);
- Respiratory disease;
- Mental impairment;
- Dementia;
- Poor dentition;
- Older age (Wong and Tariq, 2011).

Choking incidents associated with the use of pressurised metered-dose inhalers (pMDIs) have been reported, with patients inhaling objects including mouthpiece covers into the back of the pharynx, resulting in coughing and, in some cases, aspiration resulting in airway obstruction (Medicines and Healthcare products Regulatory Agency, 2018). Since 1987, 22 cases have been reported relating to accidental inhalation of inhaler mouthpiece covers or objects that have become trapped in the inhaler (MHRA, 2018).

It is important to teach patients the correct technique for using their inhaler, including advising them to remove the mouthpiece cover fully as well as shaking the inhaler to remove loose objects that may not be visible. Patients should also check that the inside and outside of the mouthpiece are clear before inhaling a dose (MHRA, 2018).

Signs of FBAO
Recognising the signs of FBAO is the key to early and effective intervention. The context may provide important clues – for example, choking is common at mealtimes or a child may have been playing with small objects. The most common signs and symptoms of choking are:

- A cough;
- Struggling to breathe or talk;
- Cyanosis;
- Grasping or reaching for the throat (Perkins et al, 2015).

The patient may go silent and hold or point to their throat. If the obstruction to the airway is only partial, the patient may be able to speak, cough and breathe (Perkins et al, 2017).

Treatment of FBAO in adults
The Resuscitation Council (UK)’s (2017) adult choking algorithm (Fig 1) (Perkins et al, 2017) provides guidance on the treatment of choking in adults. If FBAO is
suspected, it is important to assess its severity and always ask the patient “are you choking?”. Their response will help distinguish between a mild or severe obstructive airway, as described in Box 1.

Mild airway obstruction (effective cough)

Coughing generates high and sustained airway pressures and may expel a foreign body, so it is important to encourage the patient to cough. A patient with mild airway obstruction should remain under continuous observation until they improve as a severe obstruction may subsequently develop (Perkins et al, 2017).

Aggressive treatment with back blows and chest and abdominal thrusts at this stage is unnecessary – it may cause harm and could exacerbate the airway obstruction. These interventions should only be used if the patient shows signs of severe airway obstruction (Perkins et al, 2017).

Severe airway obstruction (ineffective cough)

If the patient shows signs of severe airway obstruction:
- Call for help/pull the emergency buzzer immediately and encourage the patient to cough;
- Stand at the patient’s side, slightly behind them;
- Support the patient’s chest with one hand and lean them forward – if this dislodges the foreign body, it will hopefully fall out of the mouth instead of slipping further down the airway;
- If symptoms continue, deliver up to five back blows (slaps) between the scapulae using the heel of the hand (Fig 2). Following each back blow, check to see if the obstruction has been dislodged;
- If the back blows fail, proceed to abdominal thrusts (Fig 3);
- Stand behind the patient, placing both arms around the upper abdomen;
- Lean the patient forward;
- Place a clenched fist between the patient’s umbilicus and the ribcage, and clasp it with the other hand;
- Deliver up to five sharp thrusts to the xiphoid process or the lower ribcage as this may cause abdominal trauma;
- If the obstruction remains, alternate up to five back blows with up to five abdominal thrusts.

If the patient loses consciousness you should:
- Carefully support them to the ground;
- If you have not done so already, summon help following local protocols – call 999 for an ambulance or contact your cardiac arrest team;
- Start cardiopulmonary resuscitation (CPR) – do 30 chest compressions first as these may relieve the obstruction;
- After 30 compressions, attempt two ventilations, then continue CPR until the patient recovers and starts to breathe normally (Perkins et al, 2017).

Abdominal thrusts in an obese or pregnant patient

It may be difficult to carry out abdominal thrusts on a patient who is obese or pregnant. If you cannot encircle their abdomen, stand behind the patient, position your hands over the lower end of the sternum and pull hard into the chest with quick thrusts (chest thrusts) (Perkins et al, 2017).

Aftercare and referral for medical review

Following successful treatment for an FBAO, a foreign body may still be present in the airways; if someone has dysphagia, a persistent cough or complains of having something stuck in their throat, they should seek medical advice.

Performing abdominal thrusts and chest compressions has the potential to cause serious internal injury, including ruptures or laceration of abdominal or thoracic viscera, so patients must be examined for injuries.
Use of airway clearance devices

Although there are several airway clearing devices for the treatment of FBAO currently available, their routine use is not recommended by the Resuscitation Council (UK) (Perkins et al, 2017). However, appropriately trained health professionals can use advanced techniques – such as suction or laryngoscopy and forceps – to remove a foreign body from the airway (Perkins et al, 2017).

Conclusion

FBAO is a life-threatening emergency that nurses must be able to recognise and effectively treat.

The management of FBAO in infants and children will be described in part 2 of this series.

References


