Resuscitation skills – part three
Basic airway management

AUTHOR Phil Jevon, PGCE, BSc, RN, is resuscitation officer/ clinical skills lead, Manor Hospital, Walsall.

Airway obstruction is a common problem encountered during resuscitation. Basic airway adjuncts are often helpful, and sometimes essential, to maintain a patent airway – particularly during prolonged resuscitation. This article, the third of a six-part series, describes the use of oropharyngeal and nasopharyngeal airways.

Background

The simple oropharyngeal (Guedel) airway is commonly used to help maintain a clear airway during the initial stages of resuscitation. The nasopharyngeal airway is sometimes used in the post-resuscitation phase if the patient is semi-conscious. Both provide an artificial passage for airflow by separating the posterior pharyngeal wall from the tongue. Although the position of the patient's head and neck must also be maintained to keep the airway aligned, simultaneous head tilt and jaw thrust may also be required (Nolan et al, 2005).

Oropharyngeal airway

The oropharyngeal airway is available in a variety of sizes. An appropriately sized airway holds the tongue in the normal position and follows its natural curvature. If it is too big it may occlude the patient's airway by displacing the epiglottis, hinder the use of a face mask and damage laryngeal structures; if it is too small it may occlude the airway by pushing the tongue back (Jevon, 2002). In small, medium and large adults airway sizes 2, 3 and 4 respectively are used (Nolan et al, 2005).

The oropharyngeal airway should only be used if the patient is unconscious because if glossopharyngeal and laryngeal reflexes are present it may induce vomiting and laryngospasm.

Nasopharyngeal airway

The nasopharyngeal airway is less likely to induce gagging than an oropharyngeal airway and can be used in a semi-conscious or conscious patient when the airway is at risk of compromise (for example in the post-resuscitation period) (Jevon, 2002). It can be life-saving in a patient with a clenched jaw, trismus or maxillofacial injuries.

A correctly sized airway should be used – if it is too short it will be ineffective and if it is too long it may enter the oesophagus causing distension and hypoventilation or stimulate the laryngeal or glossopharyngeal reflexes causing laryngospasm and vomiting (Resuscitation Council (UK), 2000).

Procedure for insertion of oropharyngeal airway

- Don gloves (if available).
- Clear the patient's airway, apply suction if necessary.
- Estimate the correct size of the airway by placing it against the patient's face and measuring it from the angle of the jaw to the incisors (Fig 1). The correct size is one that equates to the vertical distance between the incisors and the angle of the jaw (Nolan et al, 2005).
- If possible, lubricate the airway before insertion (practically, in the emergency situation, this is rarely done).
- Open the patient's mouth, clear the airway, using suction if necessary, and insert the airway in the inverted position (Fig 2)

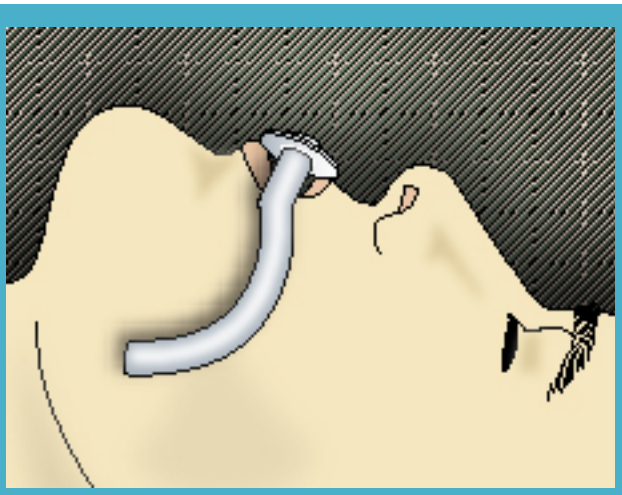

Fig 1. Insertion of oropharyngeal airway: estimate correct size – equal to the vertical distance between the angle of the jaw and the incisors

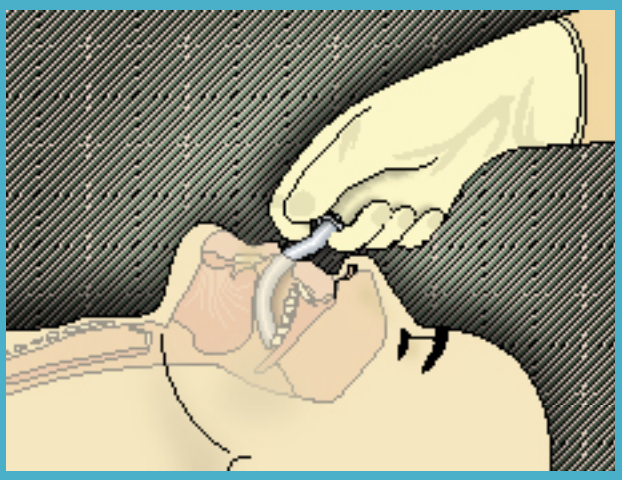

Fig 2. Open the mouth, insert the airway into the mouth in the inverted position

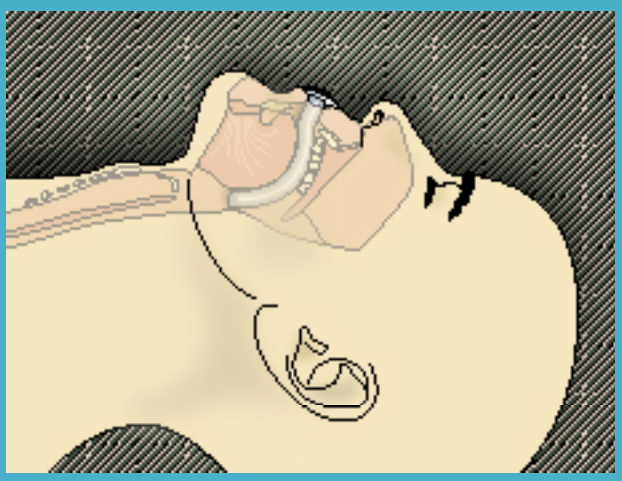

Fig 3. As it passes over the soft palate, rotate the airway through 180°

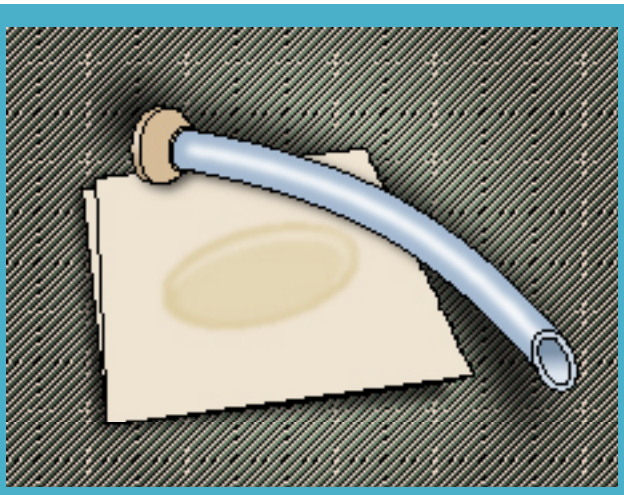

Fig 4. Insertion of nasopharyngeal airway – lubricate the airway using a water-soluble jelly

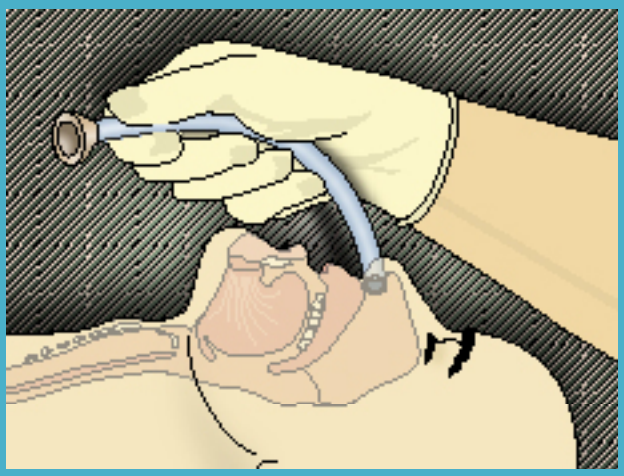

Fig 5. Insert the airway into the right nostril, bevelled end first

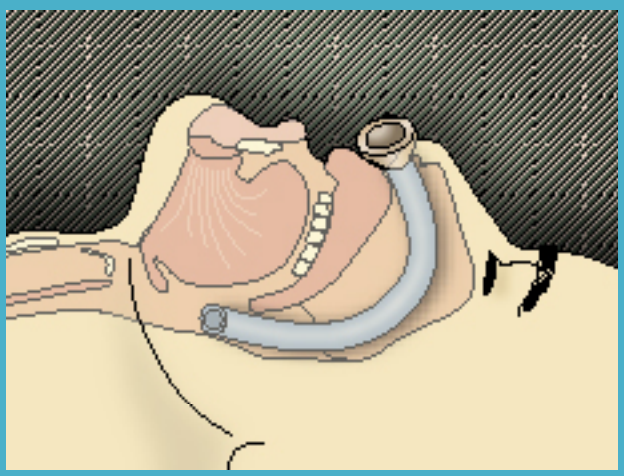

Fig 6. Pass the airway vertically along the floor of the nose, using a slight twisting action, into the posterior pharynx

(the curved part of the airway will help press the tongue down and prevent it from being pushed posteriorly).

- As it passes over the soft palate, rotate the airway through 180° (Fig 3).
- Following insertion, confirm that the airway is in the correct position – the patient's airway should be improved and the flattened reinforced section should be positioned in between the patient's teeth or gums if there are no teeth (Resuscitation Council (UK), 2000).
- Closely monitor the patency and position of the airway; it can become blocked by the tongue or epiglottis and can become wedged into the vallecula (Marsh et al, 1991). Vomit, secretions and blood can also compromise its patency.

Procedure for insertion of nasopharyngeal airway

- Don gloves.
- Select an appropriately sized airway. Sizes 6–7 are suitable for adults (Nolan et al, 2005). Some devices require a safety pin to be inserted through the flange (a precautionary measure to prevent inhalation of the airway).
- Check the right nostril for patency.
- Thoroughly lubricate the airway using water-soluble jelly (Fig 4).
- Insert the airway into the nostril, bevelled end first (Fig 5).
- Pass the airway vertically along the floor of the nose, using a slight twisting action, into the posterior pharynx (Fig 6) (Resuscitation Council (UK), 2000). If there is resistance remove the airway and try the left nostril (Jevon, 2002). Once inserted the flange should be at the level of the nostril.
- Secure the airway with tape.
- Reassess the airway and check for patency and adequacy of ventilation. Continue to maintain correct alignment of the airway and chin lift as necessary and monitor the patency of the airway. ■

REFERENCES

Jevon, P. (2002) ***Advanced Cardiac Life Support***. Oxford: Butterworth Heinemann.

Marsh, A. et al (1991) Airway obstruction associated with the use of the Guedel airway. ***British Journal of Anaesthesia;*** 67: 517–523.

Nolan, J. et al (2005) European Resuscitation Council guidelines for resuscitation 2005. Section 4. ***Advanced Life Support Resuscitation;*** 67S1: S39–S86.

Resuscitation Council (UK) (2000) ***Advanced Life Support Provider Manual.*** London: Resuscitation Council (UK).

PROFESSIONAL RESPONSIBILITIES

All nurses who carry out clinical procedures must have received approved training, undertaken supervised practice and demonstrated competence in the clinical area. The onus is also on the individual to ensure that knowledge and skills are maintained from both a theoretical and a practical perspective. Nurses should also undertake this role in accordance with an organisation's protocols, policies and guidelines.