Cardiopulmonary resuscitation

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Upper airways obstruction

The tongue falling backwards and blocking the nasopharynx is the commonest cause of upper airway obstruction. However, it may be due to blood, vomit, oedema, or trauma. The mouth should be inspected and any foreign material removed manually or by suction.

There are three manoeuvres to improve upper airway obstruction.

- (1) Head tilt. The neck is extended as far as possible using one hand.
- (2) Chin lift. The centre of the chin is pulled forward using the other hand.
- (3) Jaw thrust. The angle of the jaw is located. The index and other fingers are placed on both sides, between the angle of the jaw and the ear, and the jaw pulled forward (fig 1).

There is always a worry about manipulation of the airway if there is anxiety about the possibility of injury to the cervical spine. In this situation, the jaw thrust technique is the method of choice because it does not require hyperextension of the neck as may be used in head tilt. It should be remembered that opening the airway is the overriding priority, as hypoxia from airway obstruction is inevitably fatal and is much more common than cervical cord damage resulting from airway manipulation.

Additional measures

OROPHARYNGEAL AIRWAYS (GUEDEL)

The size is decided by comparing the length with the distance between the angle of the jaw and the corner of the patient's mouth (fig 2). The Guedel is inserted between the teeth in an apparently upside down position to ensure that it goes above the tongue and does not push it back into the throat obstructing the airway. It is then rotated through 180°. If there is any gagging or straining during insertion, the Guedel should be removed.

NASOPHARYNGEAL AIRWAYS

A safety pin must be put through the flange before use to prevent the tube being inhaled (fig 3). The size to use is

Figure 1

Figure 2

Figure 3

about the same diameter as the patient's little finger, and the length varies according to the diameter. The patency of the nostrils should be assessed, and the larger one tried first. The bevel end is inserted through the nostril and pushed gently backwards (not upwards) at right angles to the plane of the face using a to and fro twisting action until the flange lies at the level of the nostril. The nasopharyngeal airway is of great value if the teeth are clenched or if the mouth and face are injured. They should only be re-inserted with great care in patients with suspected fracture of the base of the skull.

Advanced techniques of airway management

ENDOTRACHEAL INTUBATION (ETI)

A tube is inserted through the larynx into the trachea. This is the best method of securing, and protecting, the airway but it requires training, experience, and regular practice.

LARYNGEAL MASK AIRWAY (LMA)

A tube with a small mask with a cuff at the end designed to sit over the larynx is inserted. It is easier to use than ETI but it does not guarantee protection of the airway.

NEEDLE CRICOTHYROIDOTOMY

A plastic cannula (large venflon) is inserted through the notch in the edge of the thyroid cartilage into the trachea. It is a measure of last resort for an apnoeic patient in whom all the above measures have been unsuccessful or impractical—for example, in the presence of massive trauma to the face.

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Further reading

Colquhoun MC, Handley AJ, Evans TR (eds). *ABC of resuscitation*. London: BMJ Publishing Group, 1995.

Advanced life support course provider manual. 3rd ed. Resuscitation Council (UK), 1998.

Handley AJ, Swain A. *Advanced life*. 2nd ed. Support Manual Resuscitation Council, 1994.