35

Airway obstruction

The airway extends from the nasal and oral cavities to the alveoli (Fig. 35.1). Obstruction can be partial or complete. Complete airway obstruction is rapidly fatal unless dealt with very quickly. Partial airway obstruction is more common. Complete airway obstruction may be silent, and rapidly fatal, whereas partial airway obstruction is usually associated with noisy breathing – **stridor** or **stertor**.

Some of the causes of airway obstruction are shown in Figure 35.1.

Many of the clinical features of airway obstruction are nonspecific, i.e. they are not dependant on the precise aetiology. **Stridor** is a high-pitched noise caused by narrowing the larynx and upper trachea. **Stertor** is a lower pitched noise – associated with pharyngeal obstruction, and usually worse when the patient is asleep as the pharyngeal muscle tone is reduced and part of the pharynx vibrates with respiratory activity.

CLINICAL FEATURES OF AN ACUTELY OBSTRUCTED AIRWAY

- Noisy breathing (stertor or stridor).
- Confusion.
- Tachycardia.
- Increased respiratory rate (tachypnoea).
- Unconsciousness.
- Sternal recession: the sternum sinks well into the chest during inspiration, most marked in babies because of the softness of the bones in the chest wall.
- Tracheal tug: the trachea moves down in the neck during inspiration, especially in children.
- Cyanosis (a late and dangerous sign).

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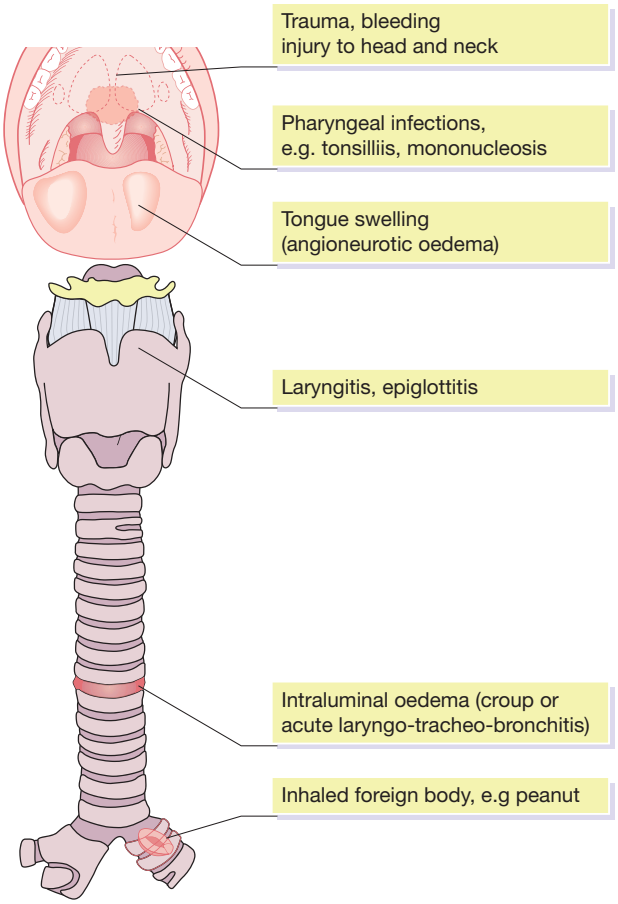

Figure 35.1 Causes of airway obstruction. Source: Munir and Clarke 2013. *Ear, Nose and Throat at a Glance*. With permission of John Wiley & Sons Ltd.

Management

Relieve the obstruction

In suspected airway obstruction:

- clear the airway
- inflate the lungs
- establish an alternative airway if needed

Make sure the patient has a patent airway, either by removing the obstruction or establishing an alternative air passage (Fig. 35.2).

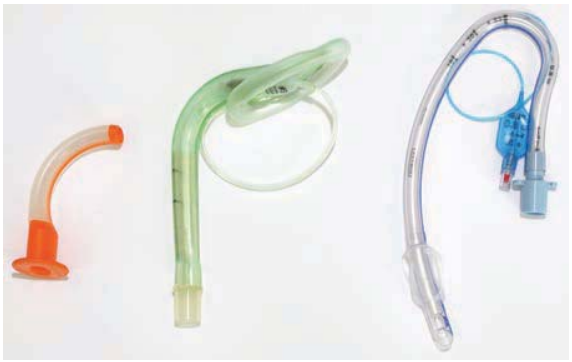

Figure 35.2 Establishing an alternative airway. A Guedel airway; a laryngeal mask; an endotracheal tube.

- **Guedel** or oral airway keeps the tongue base forward in an unconscious patient.
- An **endotracheal** airway is introduced through the mouth or the nose and guided into the trachea via the larynx. This is a skilled and often life-saving procedure (endotracheal intubation).
- **A laryngeal mask airway** is introduced through the mouth. The mask rests on the laryngeal inlet permitting ventilation.
- An emergency tracheotomy is nowadays very rarely needed, but in an extreme emergency it may be possible to perforate the membrane between the thyroid cartilage and the cricoid cartilage (**cricothyroidotomy**; Fig. 30.2 Chapter 30).

Measures that may help support the patient until the obstruction is overcome

- **Oxygen therapy**: will not overcome obstruction but can prevent hypoxia in the short term.
- **Adrenaline**: nebulized adrenaline can help to open the small airways in particular.
- **Steroids**: oral prednisolone or dexamethasone can reduce airway mucosal oedema.

CLINICAL PRACTICE POINT

- The most important measure in managing acute airway obstruction is to remove the obstruction. If you cannot do this, try to establish an alternative airway until the patient can have definitive treatment.

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