Practical procedures should first be explained to the child (if they are old enough to understand this information) and the parents, any risks discussed with them and their consent obtained. Procedures on young infants should avoid hypothermia. Good light is essential. Analgesia should be given where necessary, and invasive procedures only performed when essential.

**Analgesia and sedation for procedures**

Some procedures have to be undertaken immediately, to save life, and many such procedures are described in this section. Clearly, there is no time to use analgesia in these circumstances, nor indeed much need to do so, as children who are in such severe collapse will have significantly depressed conscious levels. Where there is consciousness, analgesia and/or sedation is a top priority.

(For details on pain assessment and analgesia, see Section 1.15.)

For some procedures (e.g. chest tube insertion, dressing of burns), analgesia with a powerful drug such as ketamine should be considered, with a skilled healthcare worker (usually an anaesthetist) present and able to treat any adverse reactions immediately (see Section 1.24).

For planned intubation, anaesthesia is induced first (see Section 1.24). For some rarely used procedures such as defibrillation for cardiac arrest caused by a shockable rhythm (see Section 1.13), there is neither time nor need for sedation, as the patient is unconscious, whereas for defibrillation for an arrhythmia, sedation is necessary in most cases (see Section 5.4.C).

If ketamine is being used, give 2–4 mg/kg IM. This takes 5–10 minutes to act and the effects last for about 20 minutes. Ketamine can also be given slowly IV in this situation, 250–500 microgram/kg IV, and repeated as required to control pain. An anaesthetist or other expert in airway control must be present when ketamine is used.

When giving any analgesia, manage the child’s airway, beware of respiratory depression and monitor oxygen level.
saturation with a pulse oximeter (if available). Ensure that you have a resuscitation bag and mask available (and oxygen).

Restraining children for procedures
Restrain is important both for the child and for the clinician who is undertaking the procedure. Clearly, the procedure will be undertaken more quickly, safely and accurately if the child is kept still. However, to prevent a child with a chronic condition who will experience many such procedures being made fearful of further attempts, sedation should be strongly considered if facilities are available for this.

If facilities do not allow or if the procedure is unlikely to require repetition, physical restraint can be used. Ideally a parent or trusted friend or relative can actually hold the child. It is also very helpful to use distraction techniques such as singing a song, telling a story or using a glove puppet. Blowing soap bubbles is a very useful distraction for children, and it costs very little to bend a piece of wire into a loop and make up some strong soap solution.

First explain to the child in an age-appropriate manner what is going to happen. Never say 'This won’t hurt when you know it will.' Always use local anaesthesia if at all possible (see Section 1.15). Explain why they are to be wrapped up (a 'big cuddle'), what is to happen and what will happen afterwards. Give plenty of praise before, during and after the procedure.

Restraining a child for examination does not usually require wrapping, but it is wise to leave examination of the ears, nose and throat until the end of the examination.

8.2 Airway procedures

Oropharyngeal airway
For adjunct-free airway opening and airway positions, see Section 1.12.

The oropharyngeal or Guedel airway is used in the unconscious or obtunded patient to provide an open airway channel between the tongue and the posterior pharyngeal wall. In the conscious patient with an intact gag reflex, it may not be tolerated and may induce vomiting. It is especially useful in the convulsing and post-ictal patient.

The oropharyngeal airway is available in a variety of sizes. A correctly sized airway when placed with its flange at the centre of the incisors, and then curved around the face, will reach the angle of the mandible. Too small an airway may be ineffective, and too large an airway may cause laryngospasm. Either may cause mucosal trauma or may worsen airway obstruction. Reassessment following placement is therefore a vital part of safe insertion of an airway device.

There are two methods for inserting the oropharyngeal airway in a child, depending on whether the child is small or large. However, there is no set age for switching from one to the other, as the choice of method depends on practicality and the skills of the operator. The important thing is not to push the tongue back, as that will obstruct the airway instead of keeping it open.

The twist technique is used for the larger child and in pregnancy, and means that the convex side of the airway is used to depress the tongue as the airway is pushed into the mouth. Insert the airway upside down until the tip has passed the soft palate, and then rotate it through 180 degrees so that the natural curve of the Guedel airway follows the curve of the tongue and pharynx.

However, in the infant and small child, as the tongue is larger relative to the size of the mouth, the airway cannot be rotated in the mouth without causing trauma. Therefore

FIGURE 8.2.1 Oropharyngeal airway, showing sizing technique (correct size is illustrated).

FIGURE 8.2.2 Oropharyngeal airway, showing position when inserted.