Chapter 15
Anaesthesia

1 General anaesthesia

Anaesthesia is induced with either a volatile drug given by inhalation or with an intravenously administered drug; anaesthesia is maintained with an intravenous or inhalational anaesthetic. Analgesics usually short-acting opioids, are also used. The use of neuromuscular blocking drugs necessitates intermittent positive-pressure ventilation. Following surgery, anticholinesterases can be given to reverse the effects of neuromuscular blocking drugs. Antimuscarinic drugs are used (less commonly nowadays) as premedicants to dry bronchial and salivary secretions.

- Intravenous – Propofol, thiopental
- Inhalational – nitrous oxide, desflurane
- Analgesics – alfentanil, fentanyl, remfentanyl
- Neuromuscular blockers – suxamethonium
- Reversal of neuromuscular blockade - neostigmine
- Antimuscarinics – atropine, glycopironium

2 Local anaesthesia

Benzocaines are the drug of choice; they block conduction along nerve fibres. They vary in their route of administration. Care must be taken to avoid accidental intravascular injection; local anaesthetic injections should be given slowly in order to detect inadvertent intravascular administration.

Local anaesthetics cause dilatation of blood vessels. The addition of a vasoconstrictor e.g. low concentration adrenaline, to the local anaesthetic preparation diminishes local blood flow slowing the rate of absorption, and thereby prolonging the anaesthetic effect (not advisable in digits or appendages because of the risk of ischaemic necrosis).

Local anaesthetics should not be injected into inflamed or infected tissues nor should they be applied to damaged skin.

The systemic toxicity of local anaesthetics mainly involves the central nervous and cardiovascular systems. CNS effects include a feeling of inebriation and light-headedness followed by drowsiness, numbness of the tongue and perioral region, restlessness, paraesthesia (including sensations of hot and cold), dizziness, blurred vision, tinnitus, headache, nausea and vomiting, muscle twitching, tremors, and convulsions.

After injection of a bolus of local anaesthetic, toxicity may develop at any time in the following hour. In the event of signs of toxicity during injection, the administration of the local anaesthetic must be stopped immediately. In the event of local anaesthetic-induced cardiac arrest, standard cardiopulmonary resuscitation should be initiated immediately. Lidocaine must not be used as anti-arrhythmic therapy.