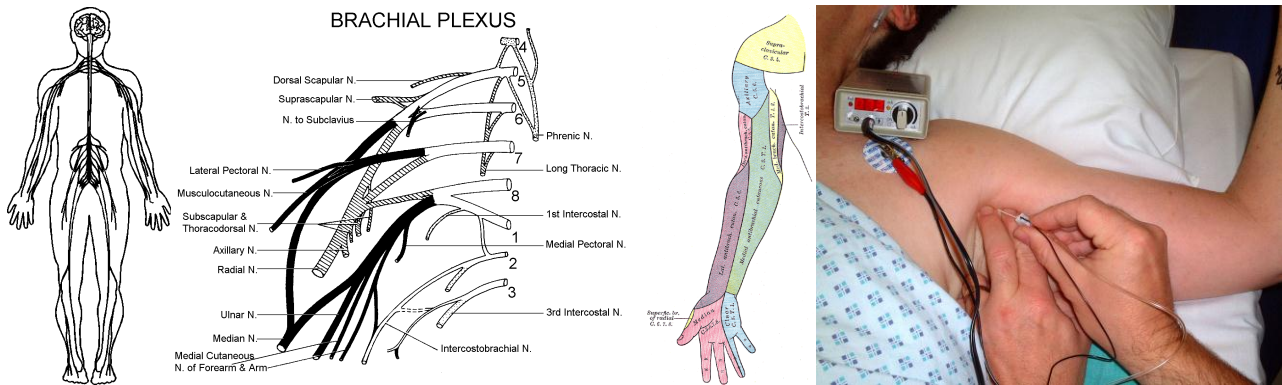


REGIONAL ANAESTHETIC

Sensation and pain is transmitted to the brain from nerve endings (receptors) via a variety of nerves that serve specific areas. The information is distributed in the upper limb through a complex “junction box” (brachial plexus) before being relayed to the spinal cord and then the brain.



Pain can be blocked anywhere between the receptor and brain by a number of methods.

Local anaesthetic: an anaesthetic that affects a restricted area of the body.

Regional anaesthetic: an anaesthetic that affects a limb or territory supplied by a named nerve.

General anaesthetic: an anaesthetic that affects the whole body and causes a loss of consciousness.

Sedation: the administering of a sedative drug to produce a state of calm or sleep.

Tourniquet: a cuff inflated on the upper arm or forearm to control bleeding. These are used in almost all hand surgery cases usually to make it easier for the surgeon to see but sometimes also to hold anaesthetic drugs in the arm.

The anaesthetic techniques can be combined. The addition of a regional anaesthetic allows a general anaesthetic to be “lighter”, both improving recovery and also reducing the need for pain-killers after surgery.

Much minor hand surgery can be performed under local anaesthetic with injections at or close to the site of operation. More complex time-consuming surgery requires regional or general anaesthetic partly because of large or multiple incisions but also because the tourniquet is uncomfortable beyond about 30 minutes.

A regional anaesthetic “brachial plexus block” is performed by a specialist anaesthetist and involves the injection of local anaesthetic drugs either into the armpit (axilla) or at the root of the neck (subclavian). The nerves of the brachial plexus can be found by feeling as they lie very close to the major arteries. They can be located more accurately by using either electrical nerve stimulation or ultrasound scanning.

Following the injection, it takes about 15 to 30 minutes for the nerves to absorb the drugs and for the block to become effective. When blocked, the arm becomes totally numb and floppy. Not every block works and you have to accept that it either may need to be supplemented by local injections, repeated, or converted to a general anaesthetic.

The effects of the block can last many hours after surgery. During this time, the arm may be temporarily placed in a sling to avoid injury. Once sensation and control has returned, the sling can be discarded but you should follow your rehabilitation instructions that will nevertheless include some hand elevation.

Complications: are unusual and include (i) haematoma (bruising) at the site of injection (that settles), (ii) nerve injury (that can be transient or permanent) and (iii) toxicity from the drugs due to over-dosage or accidental injection into the artery (very rare but serious). These risks and the possibility of the addition of a general anaesthetic are why you must not eat or drink before your operation and why a cannula (needle) is placed in your other arm.