Appendix B: Choice of vein

The main factors to consider prior to inserting a peripheral cannula are the location (where possible, the patient's dominant hand should be avoided), condition of the vein, purpose of the infusion (that is the rate of flow required and the solution to be infused) and the duration of therapy.

The suitable vein should always be selected prior to selection of the device. The veins should feel bouncy and refill when depressed and should be straight and free of valves to ensure easy advancement of the cannula into the vein. Valves can be felt as small lumps in the vein or may be visualized at bifurcations or more commonly seen in certain vessels (see below). It is best to avoid joints as this will lead to an increased risk of mechanical phlebitis and an infusion that will infuse intermittently due to the patient's movement. It can also be very awkward for the patient and may restrict his or her ability to carry out activities.

The veins of choice are either the cephalic or basilic veins, followed by the dorsal venous network.

The cephalic vein
The size and position of the cephalic vein make it an excellent vessel for administration of transfusions. It readily accommodates a large-gauge cannula and, by virtue of its position on the forearm, provides a natural splint However, its position at a joint may increase complications such as mechanical phlebitis and even general discomfort. The tendons controlling the thumb obscure the vein during insertion), and care must be taken not to touch the radial nerve.

The basilic vein
The basilic vein is a large vessel, which is often overlooked due to its inconspicuous position on the ulnar border of the hand and forearm. It is found on palpation when the patient's arm is placed across the chest, with the practitioner opposite the patient. Cannulation can be awkward due to its position and its tendency to have many valves and it tends to roll easily. In addition, a haematoma may occur if the patient flexes the arm since this squeezes blood from the engorged vein into the tissues.

The dorsal venous network
Using the veins of the dorsal venous network of the hand will allow for cannulation proximally along the veins when resiting the device. They can usually be visualized and palpated easily. The digital veins are small and may be prominent enough to accommodate a small-gauge needle as a last resort for fluid administration. With adequate taping the fingers can be immobilized, thus preventing the cannula from piercing the posterior wall of the vein, leading to bruising or infiltration. The metacarpal veins are accessible, easily visualized and palpated. They are well suited for IV use, as the cannula lies flat between metacarpal bones of the hand and provides a natural splint. The use of these veins is contraindicated in the elderly as there is diminished skin turgor and loss of subcutaneous tissue, making the vein difficult to stabilize and often taking longer to cannulate. Metacarpal veins are a better option for short-term or outpatient intravenous therapy.