Long lines and central lines

Neonatal surgery

Patient information

In some preterm babies and babies who require surgery, normal feeding by mouth cannot be started for some days or weeks. This is either because they are extremely preterm, unwell or their bowel is not yet working. During this time the nutrition your baby requires is given as an intravenous fluid through a vein. This fluid is called parenteral nutrition (PN).

Although IV (intravenous) fluids can be given through a standard drip (a 2 to 3cm plastic tube inserted into a vein usually in the baby’s arm or leg), these drips do not last long because:

- The IV fluid is an irritant to small veins and is usually damaged within one or two days and the drip needs to be re-sited
- The skin can be damaged by the irritant PN fluid
- Re-siting drips can be distressing for the baby
- Small veins get used up

For these reasons inserting a long line or central line is the best way to give nutrients to babies who we know are going to take some time to start milk feeds.

What is a long line?

A long line is a fine plastic (silastic) tube 10 to 30 cm long that is threaded into one of your baby’s veins in the arm or leg to reach a point where the vein becomes much larger, usually just outside the heart.

The PN can be given through this line and because it flows into a larger vein the risk of damage to the vein is much reduced. A long line can stay in place for several weeks, which reduces the number of times your baby needs to have a drip inserted.

The terms ‘long line’ (percutaneous line) and ‘central line’ are often used interchangeably.
How is a long line inserted?

Percutaneous lines are inserted under sterile conditions in the neonatal unit. The technique is very similar to inserting a standard drip. It can be technically difficult and may take up to an hour to do. It is not usually a painful procedure but we do give a small amount of 20% glucose into the baby’s mouth as this has been shown to be a very effective pain relief.

Sometimes when we have not been able to get IV access using a percutaneous line we may need to ask the Paediatric Surgeons to insert a central line. This line is called a broviac line. These lines are inserted under a general anaesthetic. A small cut about 1cm long is made in the baby’s neck and one of the big veins located. A tiny hole is made in the vein and the line inserted. The line is then tunnelled to sit just inside the baby’s heart.

This line is ‘cuffed’ to help hold the line in place, reducing the risk of it being pulled out accidentally. Because the line becomes attached to the baby's tissues just under the skin it will also need to be removed surgically.

What are the possible complications of long and central lines?

Most babies do not have any complications but sometimes problems can occur, including:

- **Infection** - The baby becomes unwell, has a temperature and may be quieter than usual. If infection is suspected, blood tests are done and antibiotic treatment started. If the baby does not improve it may be necessary to remove the line.

- **Accidental removal** - This is more likely to happen to percutaneous lines, which are only held in place by dressings and adhesive tapes. In surgical lines, once the cuff has become stuck in place (at 10 days) accidental removal is uncommon.

- **Blockage** - Lines may become blocked with a blood clot. Sometimes the line can be unblocked but usually it will need to be removed and a new line inserted.

- **Vein damage** - Damage to veins can occur from PN.

- **Damage to the heart** - This is a very rare complication. The line may damage the wall of the heart and PN fluid may leak around the heart. This can prevent the heart from working normally. To try to avoid this complication all lines are checked by x-ray after insertion prior to the use of PN.

May 2013

Review May 2016