

PICC lines: Patient Information

What is a PICC line?

A PICC line stands for Peripherally Inserted Central Catheter. It is a long, thin, flexible plastic tube that is inserted into a vein, usually in the upper arm. It is fed into the vein until its tip sits in one of the large veins in your chest, near the heart.

“Triple lumen”, “Double lumen” or “single lumen”?

Some PICCS are a simple tube, or ‘single lumen’. Other PICCS contain two or three tubes bundled together, a “double” or “triple” lumen. Multi-lumen PICCs are useful for situations where more than one substance needs to be infused into a vein at the same time, for example antibiotics at the same time as a blood transfusion or chemotherapy.

What are the advantages of a PICC line?

Because the PICC line is inserted by a radiologist (X ray specialist doctor) under the guidance of an ultrasound, the vein is clearly visualised. PICCs are therefore good for people whose veins are difficult to access using standard IV catheters.

Because the PICC line is inserted in an arm, rather than directly into the chest or neck the procedure is less invasive and the complication risk is lower than a ‘central jugular line’, vascath, portacath or Hickmann line. These lines are inserted into a neck vein or a vein deep in the chest.

PICC lines can remain in the body for a lot longer than many other large central lines, so they are useful to avoid multiple punctures in patients requiring long-term access into their circulatory system.

PICC lines are easier to care for than other central lines because when not in use they can be covered with a bandage. They still need to be kept clean and dry.

PICC lines have multiple uses both for injecting medications and blood products as well as providing access for blood tests.

What are PICC lines used for?

Chemotherapy – especially for some chemo agents which would be too irritant to inject into a peripheral vein in the arm or hand.

- Prolonged IV antibiotic treatment

- Total parenteral nutrition
- Transfusions of blood products
- Access for multiple blood tests over a prolonged period of time

What will I expect to feel when I have my PICC inserted?

The insertion procedure is very simple. You are taken to the Xray department, where a radiologist locates your vein using an ultrasound machine. The skin on your arm is then cleaned and anaesthetised with some local anaesthetic, and then the PICC is inserted through the numbed skin. A needle is used to insert the PICC but the needle is then removed, leaving only the long, soft plastic tube in your vein. The PICC is confirmed to be in the correct position either by a plain Xray or by fluoroscopy (a special type of Xray camera).

What are the risks of the insertion procedure?

PICC insertion is generally very safe, and minimally invasive. Risks that have been described include:

- Air embolism (air bubbles entering the blood vessel). This can cause low blood pressure, increased pulse rate, anxiety, chest pain or shortness of breath.
- Catheter in the wrong position. Occasionally the catheter can be in too far (sometimes too close to the heart). The Xray confirms the placing of the catheter tip and the PICC can be pulled out slightly if this is required. The PICC can also slip out, as it is usually not sutured into position (because of the risk of infection). The PICC is carefully dressed with adhesive dressings to avoid slippage.
- Nerve injury or irritation
- Occasionally the nerves in the arm near the insertion site can be irritated or injured by the catheter insertion. Symptoms include numbness, tingling, pins and needles, weakness of the arm.
- Leakage
- Occasionally there can be blood leakage around the insertion site in the arm. This often resolves with pressure and careful bandaging.
- Catheter breakage

This can occur if the catheter is located at the bend of the elbow, or if there is too much pressure applied during flushing of the catheter. Careful positioning and care of the PICC usually avoids this complication.

What other problems can occur with PICC lines?

Infection. Any 'foreign' material such as plastic that is left in the body is at risk of complications such as infection. Signs that a PICC may be infected are the development of fever, difficulty injecting into the PICC, a red insertion site, or the development of septicaemia with a bacteria that



Dr Kirsten Herbert
MBBS (Hons) BSc(Med) FRACP PhD

Assoc Prof Melita Kenealy
MBBS (Hons) FRACP FRCPA

Dr Michael Dickinson
MBBS (Hons) DMed Sci FRACP FRCPA

Assoc Prof Max Wolf
MBBS FRACP FRCPA

Cabrini Haematology & Oncology Centre --- (03) 9500 9345

is usually found on the skin, such as staph or strep. Strict care is required to look after the PICC, keeping the insertion site clean and dressed at all times.

Blocked Lumen. PICC lines can become blocked with blood clot. Sometimes this clot can be dissolved by an injection of a medication called urokinase. Other times, particularly if there is any suspicion of infection, the PICC will need to be removed.

PICC-associated thrombosis (clot). PICC lines can be associated with clot forming around the outside and along the vein, forming a deep vein thrombosis of the upper arm veins. This is diagnosed by an ultrasound and sometimes by a "PICC-ogram" where the radiologist injects dye into the PICC and observes the vessels around the PICC using a plain Xray. PICC associated thrombosis is usually managed with removal of the PICC, and often a course of treatment with blood thinners such as clexane or warfarin until the clot has resolved, and for a period of time afterwards.

PICC dislodgement. PICC lines can dislodge or slip partially out. This is diagnosed by the PICC showing a longer segment of tubing outside the body than when it was first inserted. The diagnosis is confirmed by Xray. If the PICC cannot be salvaged, it is removed and reinserted.

How is a PICC line removed?

This is a painless procedure which usually takes only a few minutes. It can be done as an outpatient by a trained nurse. The dressing is removed, and slow, gentle traction is applied to the PICC line. It usually slides out very easily. If there is any resistance, warmth can be applied to the arm which will reduce any spasm of the vein and assist in removal of the PICC.

How do I look after my PICC?

PICC dressings are often performed by trained nurses in the Day Oncology Unit or by visiting home care nurses. Some patients with very long term catheters are taught to do this themselves.

Dressing changes. PICC dressings are changed every seven days or more frequently if needed. The dressing change will usually include changing of the anchoring device and injection caps as well.

Hygiene. Hands should be washed thoroughly before handling the dressing and the PICC.

Regular inspection. Inspect your dressing daily. If it is wet, soiled or leaking it needs to be changed. Gently loosen the adhesive, use alcohol if necessary to soften. Never use scissors.

Keep it clean and dry. It is important to keep your PICC dressing dry. Cover with waterproof covering for showering. Baths and swimming pools are best avoided.

Avoid damage to the PICC. Blood pressure readings in the arm with the PICC should be avoided.



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Keep using the arm. Do not 'protect' the arm with the PICC too much. Normal use of the arm will encourage good blood circulation in that arm. Avoid strenuous work, repetitive motion and heavy lifting.

Protect the PICC. Keep the dressing covered with an additional crepe bandage. Never pull on the catheter.

Report any swelling, redness, leakage or pain.

Why does my PICC need to be flushed?

PICC lines need to be flushed to try to prevent blockage of the lumen with clot. This is generally done by a trained member of staff. If flushing is difficult, urokinase (a clot dissolving medication) may be required.

Can I have blood tests taken from my PICC?

Yes, but only by nurses trained in PICC accessing. Nurses in pathology collection centres are often not trained to do this. Options are to have a blood test from another vein using a needle, or to have the blood taken elsewhere by a trained nurse.

What if my catheter breaks or dislodges?

Do not panic. Apply sterile gauze to the site, apply enough pressure so it is tightly covered, and report to the doctor or oncology nurse.