



Standard Of Procedure for Arterial Line Insertion in ICU

Indications for arterial line placement:

- Need to obtain more than 2 arterial blood samples to guide therapies such as ventilation.
- Need for continuous measurement of blood pressure, such as during infusion of vasopressors or inotropes.

Relative contraindications and Risks:

- Thrombocytopenia and coagulopathy
- Arterial lines can occlude distal flow to the limb they are placed in, causing ischemia and in some cases loss of limb.
- Hence sites with a collateral flow such as the radial artery should be considered before end arteries such as the brachial or femoral.
- Femoral lines may be most appropriate under ultrasound guidance if the patient is not yet fully resuscitated.

Consent:

An individual risk-benefit assessment should be performed to decide whether an arterial line should be performed and to select the most appropriate site.



Pre-procedure checks:

- Check the patient's identity.
- Check the patient's allergies and recent coagulation profile.
- If the patient is aware, explain the reason for the procedure and get consent.
- Consider procedure site based on palpable pulses, skin condition, and risk of loss of collateral flow.
- Ultrasound and Allen's test may be used as part of this assessment, although Allen's test is not 100% reliable.

Equipment:

- A clean procedure trolley should be used
- Apron, clean hands, sterile gloves
- Arterial line. 20G Flow switch for radial, brachial or dorsalis pedis. Vygon or arrow Seldinger is suitable for all sites.
- 2% w/v chlorhexidine gluconate in 70% v/v isopropyl alcohol for skin prep.
- 1% or 2% Lidocaine for local anesthetic.
- Tegaderm 'winged' dressing

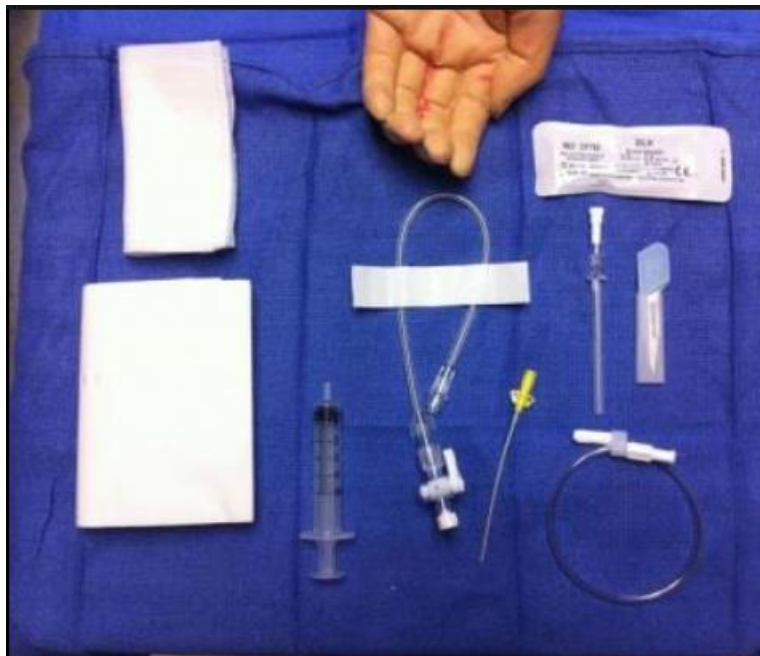


Procedure:

- Position patient to allow access to the site, also maintaining patient dignity
- Clean site with 2% w/v chlorhexidine gluconate in 70% v/v isopropyl alcohol and allow it to dry
- If ultrasound is used this must be done with a probe cover to reduce cross-infection.
- Infiltrate subcutaneous lidocaine for local anesthetic effect
- Insert arterial line
- Suture the line in place
- Place tegaderm dressing on the arterial line Post Procedure.
- The arterial line must be transduced at all times.
- Monitor the limb distal to the insertion site for perfusion.
- The dressing must be changed as required with a maximum length of 7 days.
- Monitor the entry site daily for infection.
- Arterial lines should be removed when it is no longer necessary.

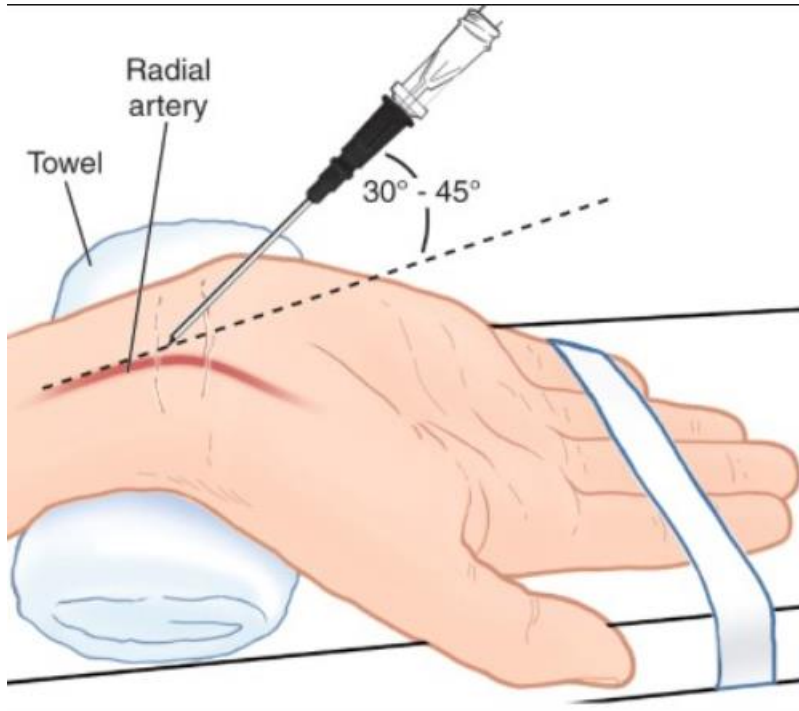


Tray for arterial line insertion





Position of hand and needle for radial arterial line



USG guided femoral arterial insertion

