



GUIDELINE

Intravenous Cannulation with Ultrasound Guidance

Scope (Staff):	All Emergency Department Clinicians
Scope (Area):	Emergency Department

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Intravenous Cannulation with Ultrasound Guidance

Pre-Procedure

- Ultrasound (US) is a very useful tool for difficult intravenous (IV) cannulation

Indications

- Previously confirmed case of difficult IV cannulation
- Failed IV cannulation
- Anticipated difficult IV access (e.g. vein neither visible nor palpable, high adiposity)

Preparation

Equipment

- IV cannula and associated equipment for cannulation
- Use the linear ultrasound probe 25mm (small one)
- US gel: both non-sterile and sterile
- Ultrasound probe sterile sleeve
- Clean gloves or sterile gloves (preferred)

Procedure

Positioning and technique

- Wash hands
- Prepare everything as you would for IV cannulation and blood collection
- Put on gloves +/- gown
- Clean large area of skin over the vein with an alcohol wipe or chlorhexidine solution
- Scan and locate a suitable vein (use non-sterile US gel)
- Cubital fossa area or volar aspect of mid forearm are good locations to start with. Otherwise, have a look at the saphenous vein.
- Scan the cross-section of the vein, then turn the probe 90 slowly to scan it longitudinally to see the alignment of the vein

Use either of the two methods below:

- **LAMP** = Locate, Align, Mark, Puncture – use US to mark and then cannulate
- **LAP** = Locate, Align, Puncture – visualise with US in real time

LAMP Approach:

- Scan the vein as above (using non-sterile US gel)
- Mark the vein location using a pen (or tip of a pen cap to make an indentation), on both sides of the probe after aligning the centre of the probe on the vein (cross section view)
- Wipe the gel off with gauze
- Clean the skin again with alcohol wipe or chlorhexidine
- Cannulate the vein as usual using the two marks on the skin

LAP Approach:

- Cover the US probe with the sterile sleeve
- Apply sterile gel inside the probe sleeve and some on the skin
- Use either the cross-sectional view or the longitudinal view in real time
- Align the centre of the probe with the vein
- Pierce the skin close (2-5mm) to the centre of the probe
- Look for the needle tip entering the vein
- You can see the depression and movement of tissue around it
- If using the cross-sectional view, you will need to slide the probe to follow the tip of the cannula needle

Post-Procedure

Aftercare


- Clean the ultrasound probe according to the ED guideline: [Ultrasound Probe Cleaning \(Sonosite\)](#).

More

Tags

access, cannula, cannulation, drip, intravenous, iv, u/s, ultrasound, uss, veins

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