

CENTRAL VENOUS CATHETER PLACEMENT

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424GMTH



ΕΛΛΗΝΙΚΗ ΕΤΑΙΡΕΙΑ ΑΙΜΑΦΑΙΡΕΣΗΣ

South-East
Europe
Initiative
for Apheresis

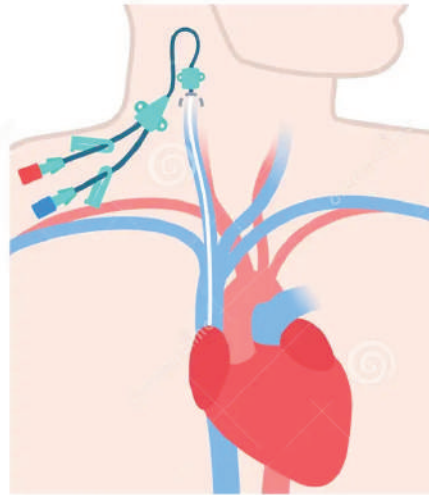
10th

**Hellenic
Haemapheresis**
Association Conference

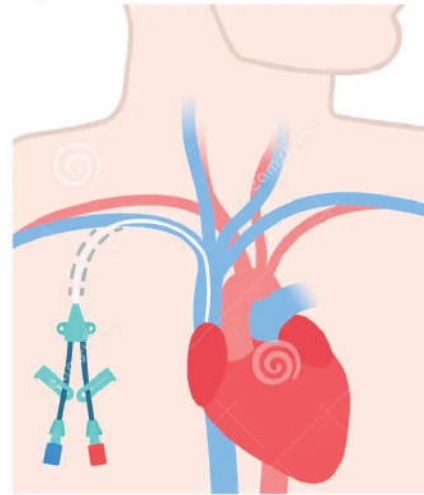
CVC Types

- PICC
- Ports ή port-a-cath
- Tunneled
- Non-tunneled

CENTRAL VENOUS CATHETER (CVC)



NON-TUNNELED



TUNNELED

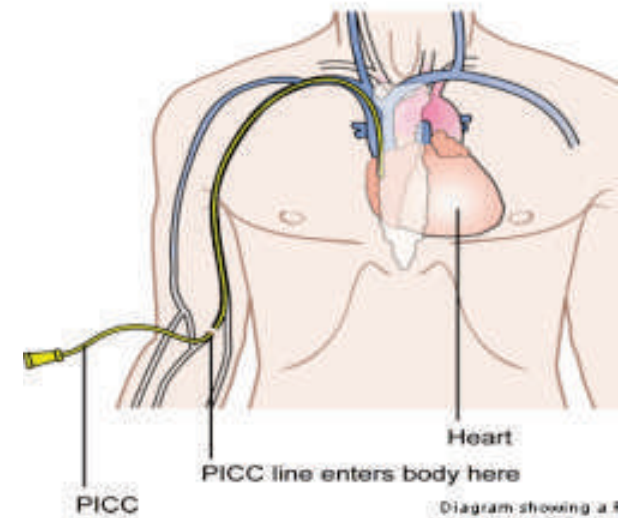
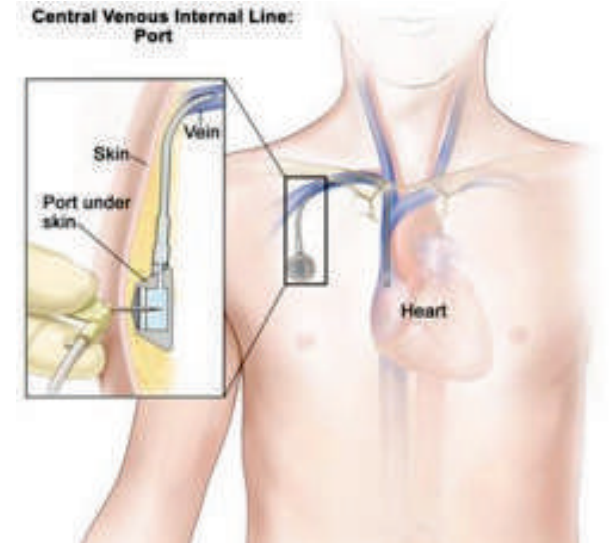


Diagram showing a PICC line

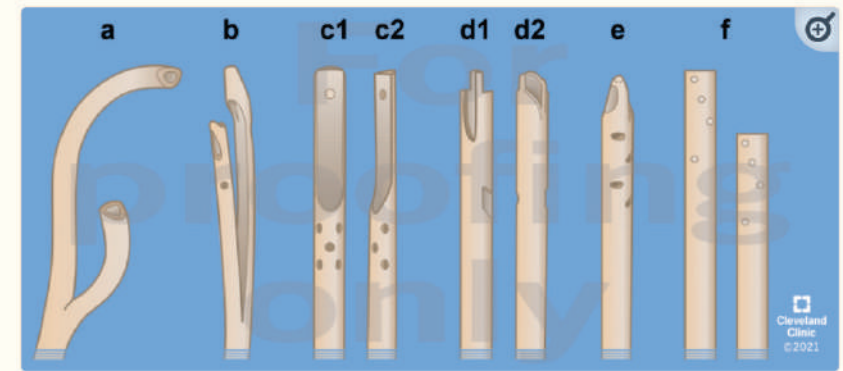
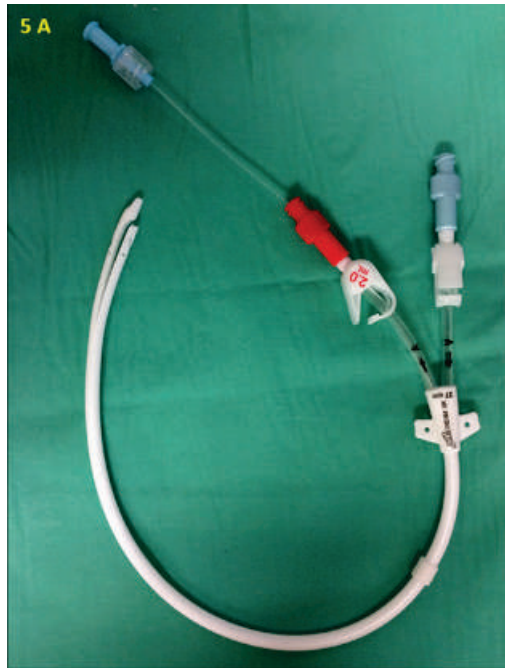


Figure 1

Tunneled hemodialysis catheter tips. (a) Split tip with preformed curved tips. (b) Split tip standard. (c) c1/c2—step tip. (d) d1/d2—symmetric tip with side slots. (e) Symmetric tip with side holes. (f) Dual catheter (e.g., Tesio twin catheter).



Insertion sites

1 Internal jugular vein

2 Femoral vein

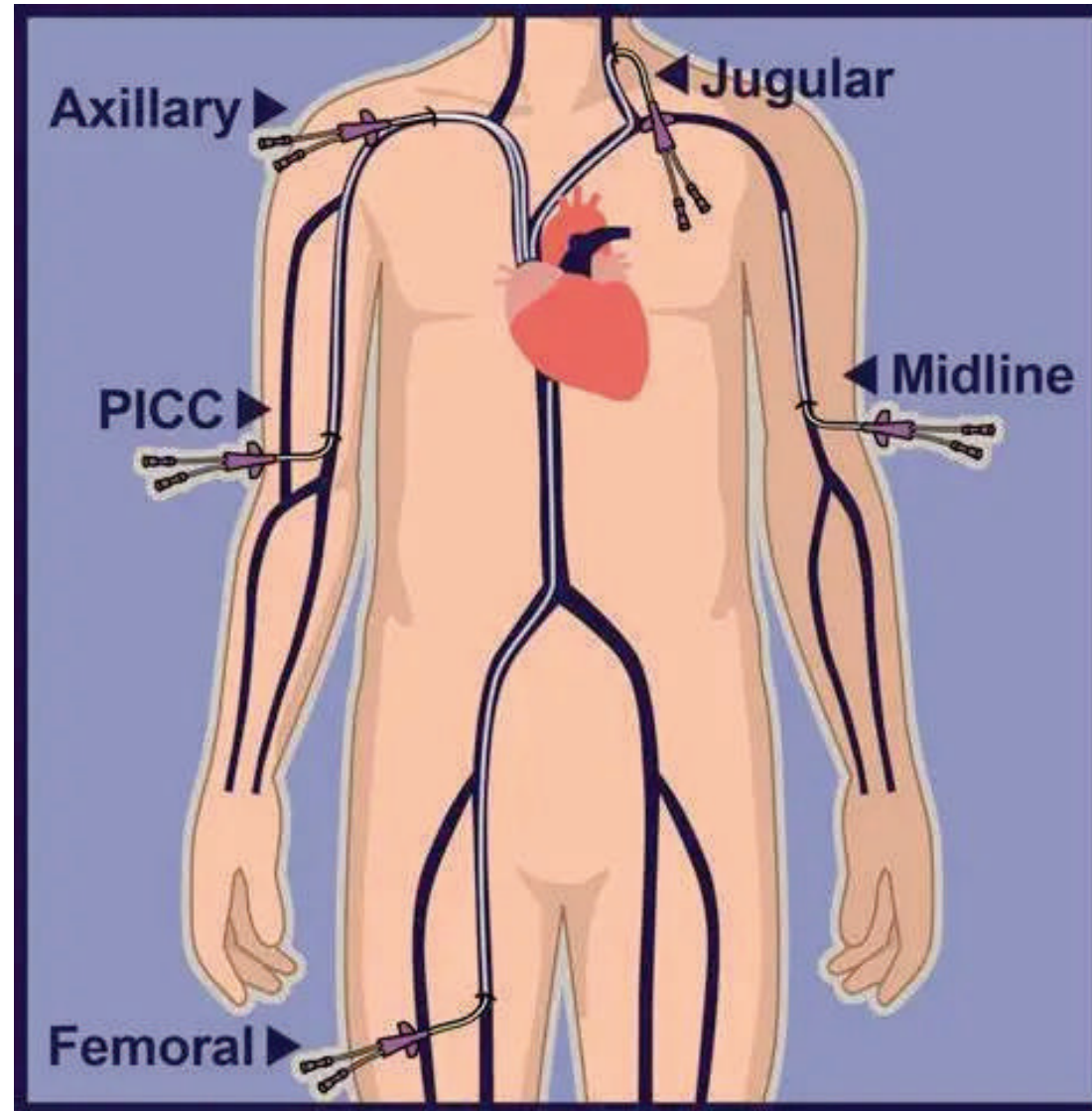
3 Subclavian vein

TABLE
7.1

Selected Factors Favoring Different Temporary (Nontunneled) Hemodialysis Catheter Insertion Sites

1. **Right internal jugular**
 - Critically ill and bed-bound with body mass index >28
 - Postoperative aortic aneurysm repair
 - Ambulatory patient/mobility required for rehabilitation
2. **Femoral**
 - Critically ill and bed-bound with body mass index <24
 - Tracheostomy present or planned in near-term
 - Need for long-term hemodialysis access present, highly likely or planned
 - Emergency dialysis required plus inexperienced operator and/or no access to ultrasound
3. **Left internal jugular**
 - Contraindications to right internal jugular and femoral sites
4. **Subclavian**
 - Contraindications to internal jugular
 - Right side to be used preferentially

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Anatomy

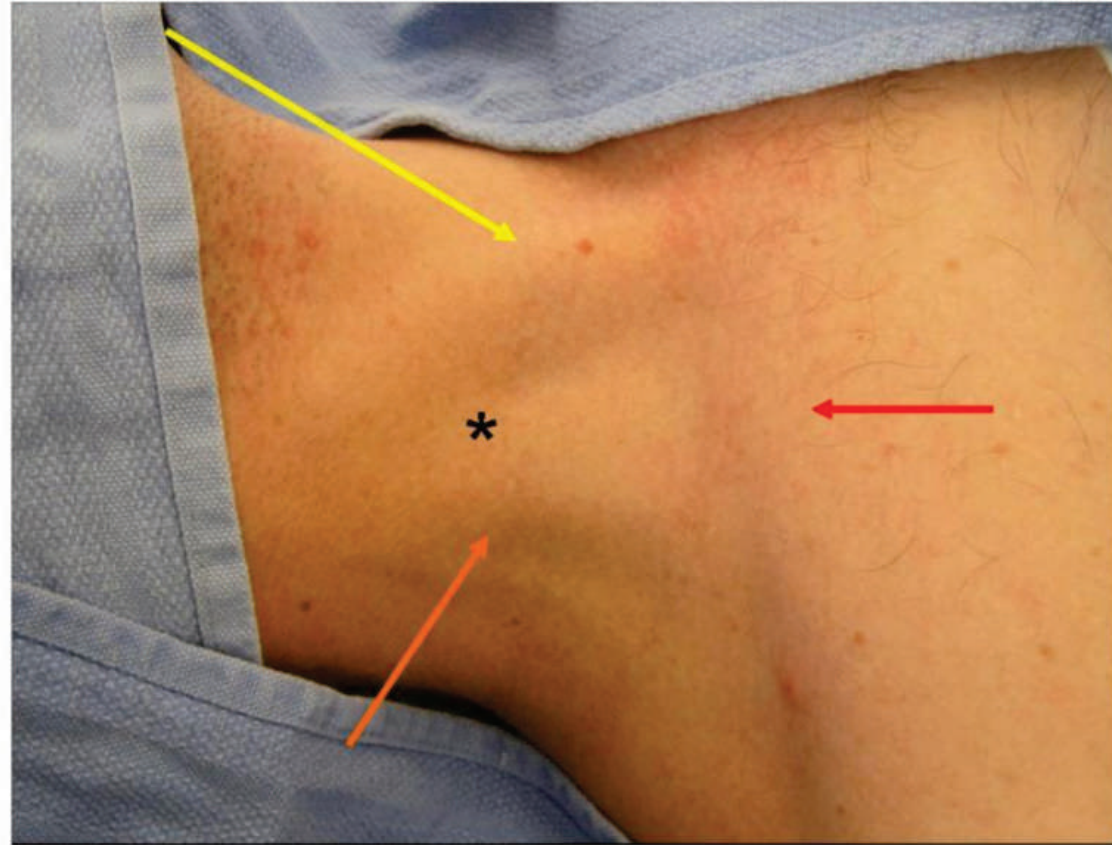
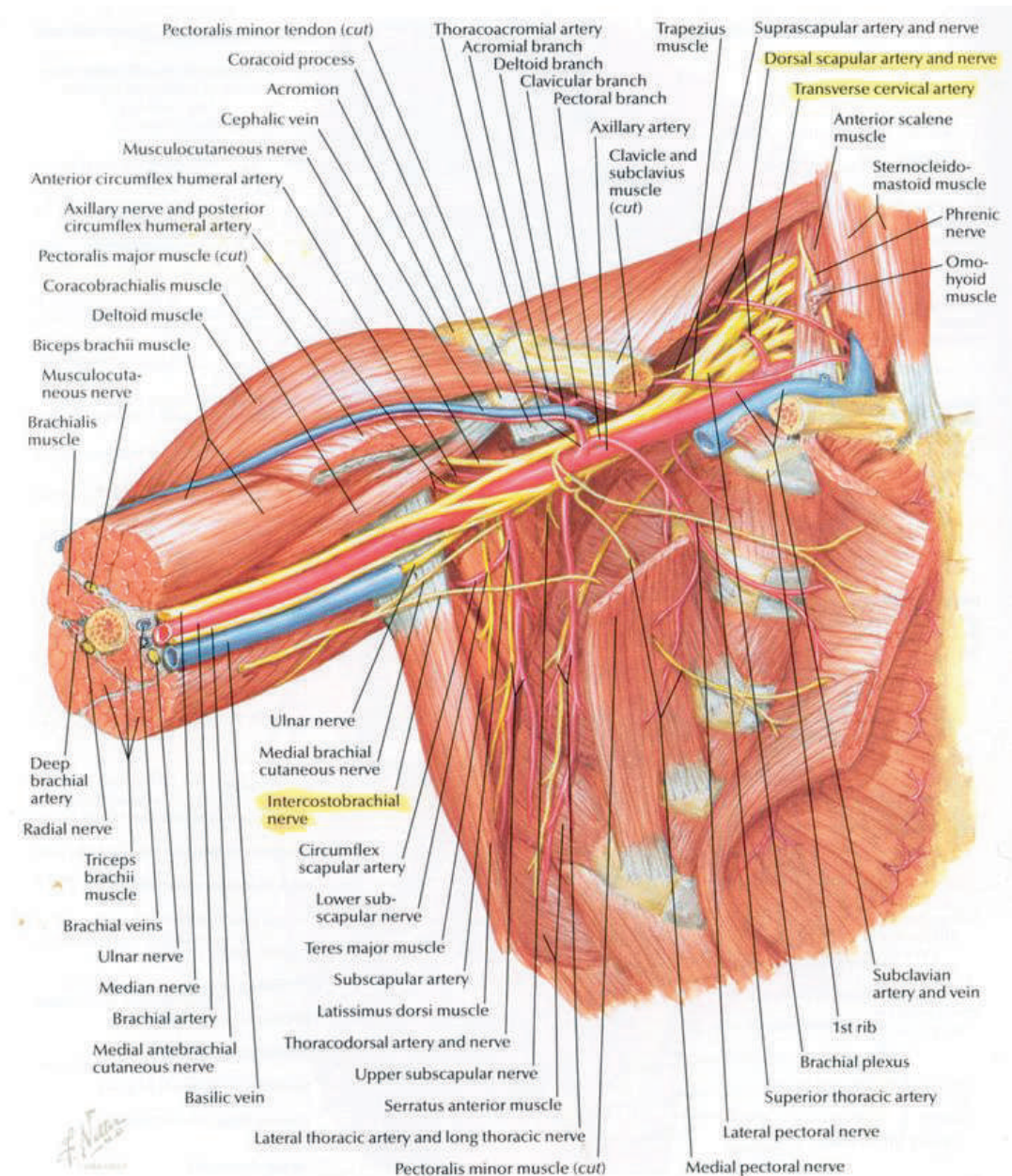
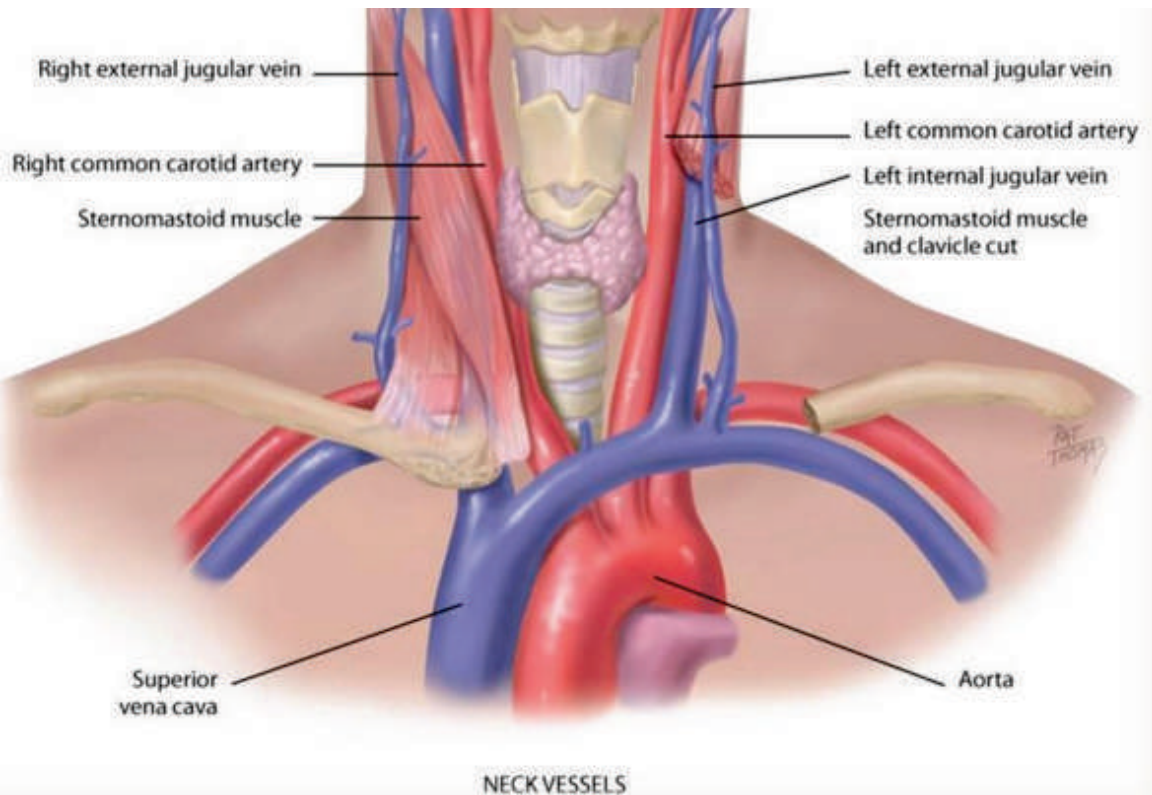
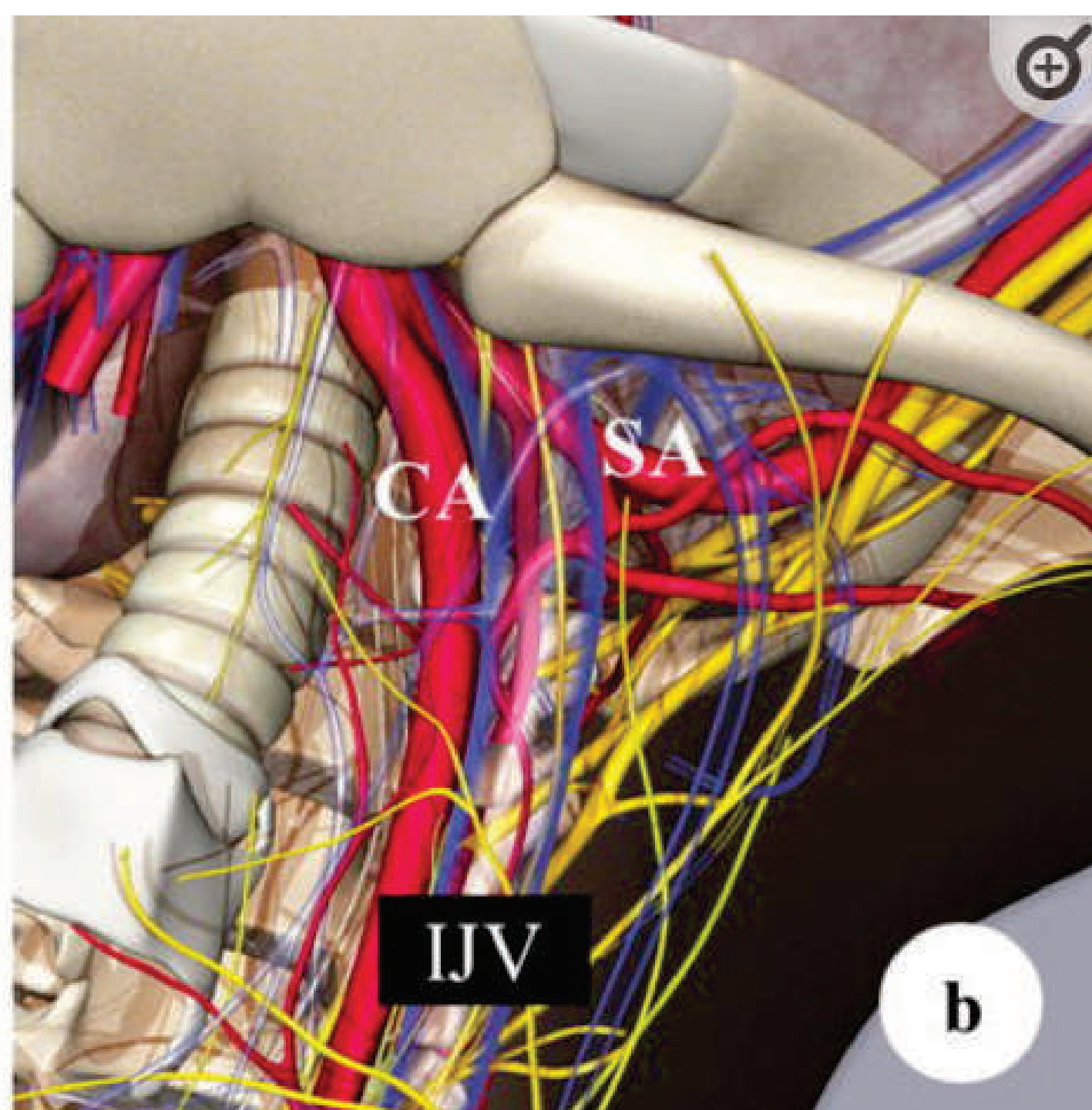
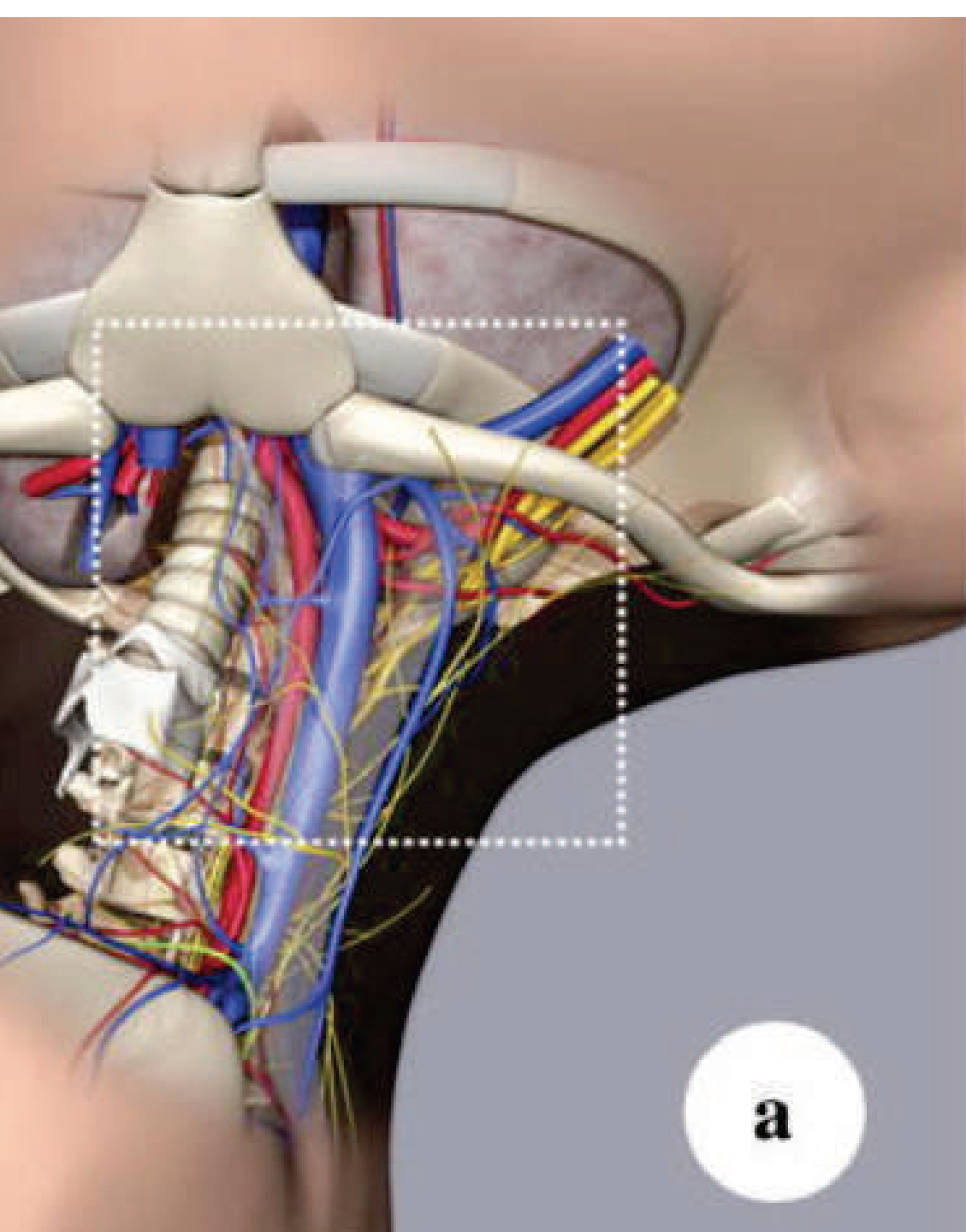
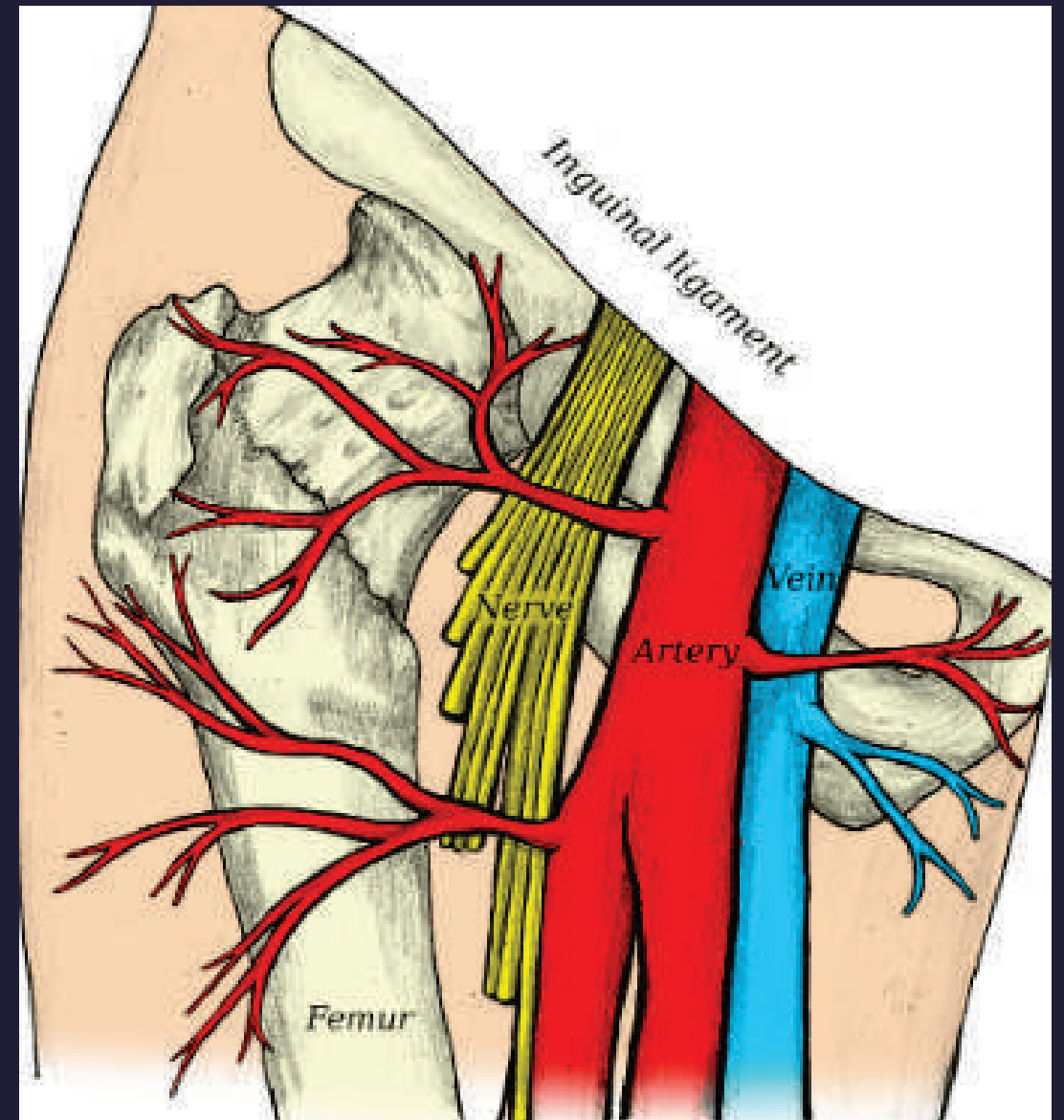
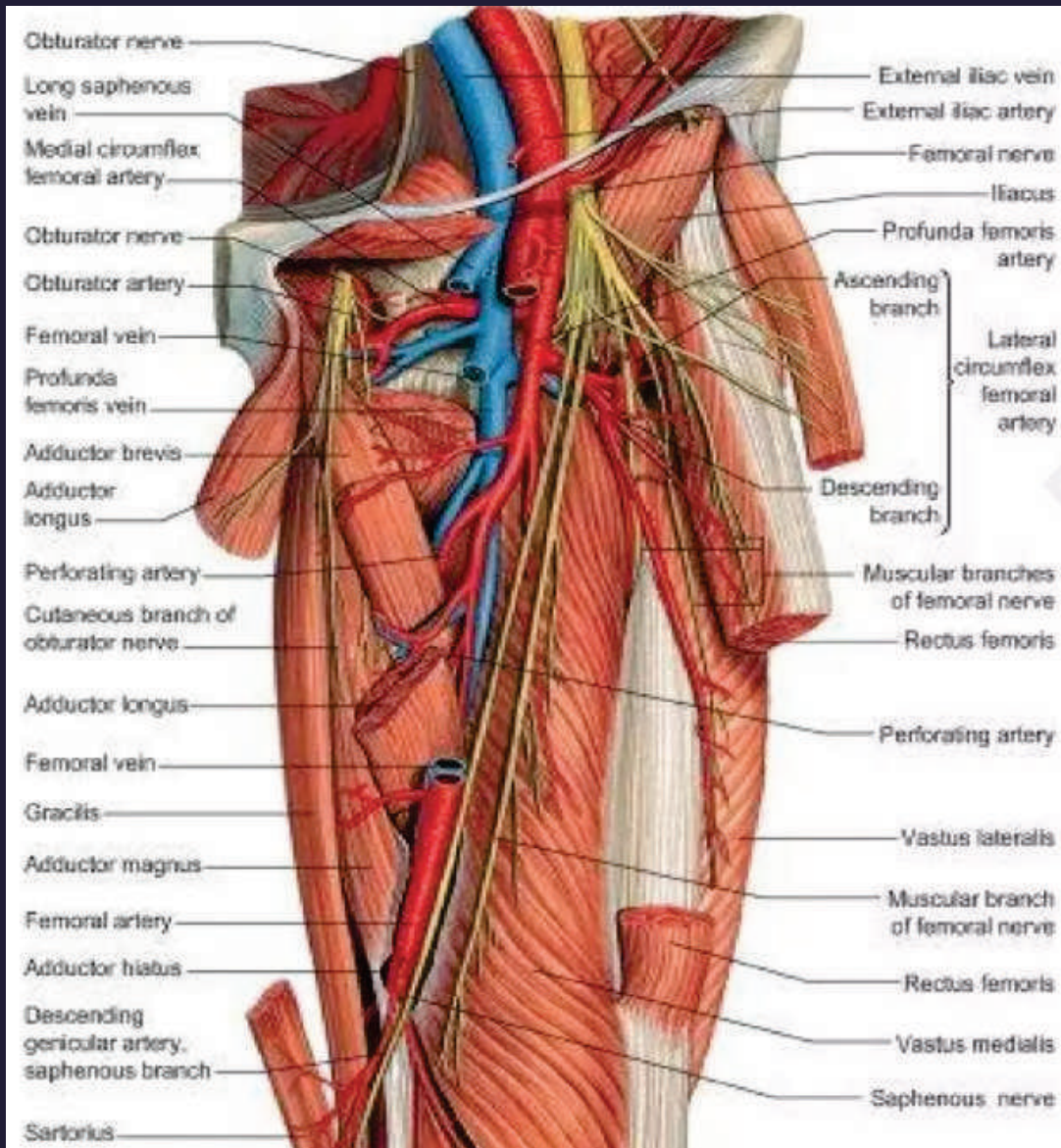


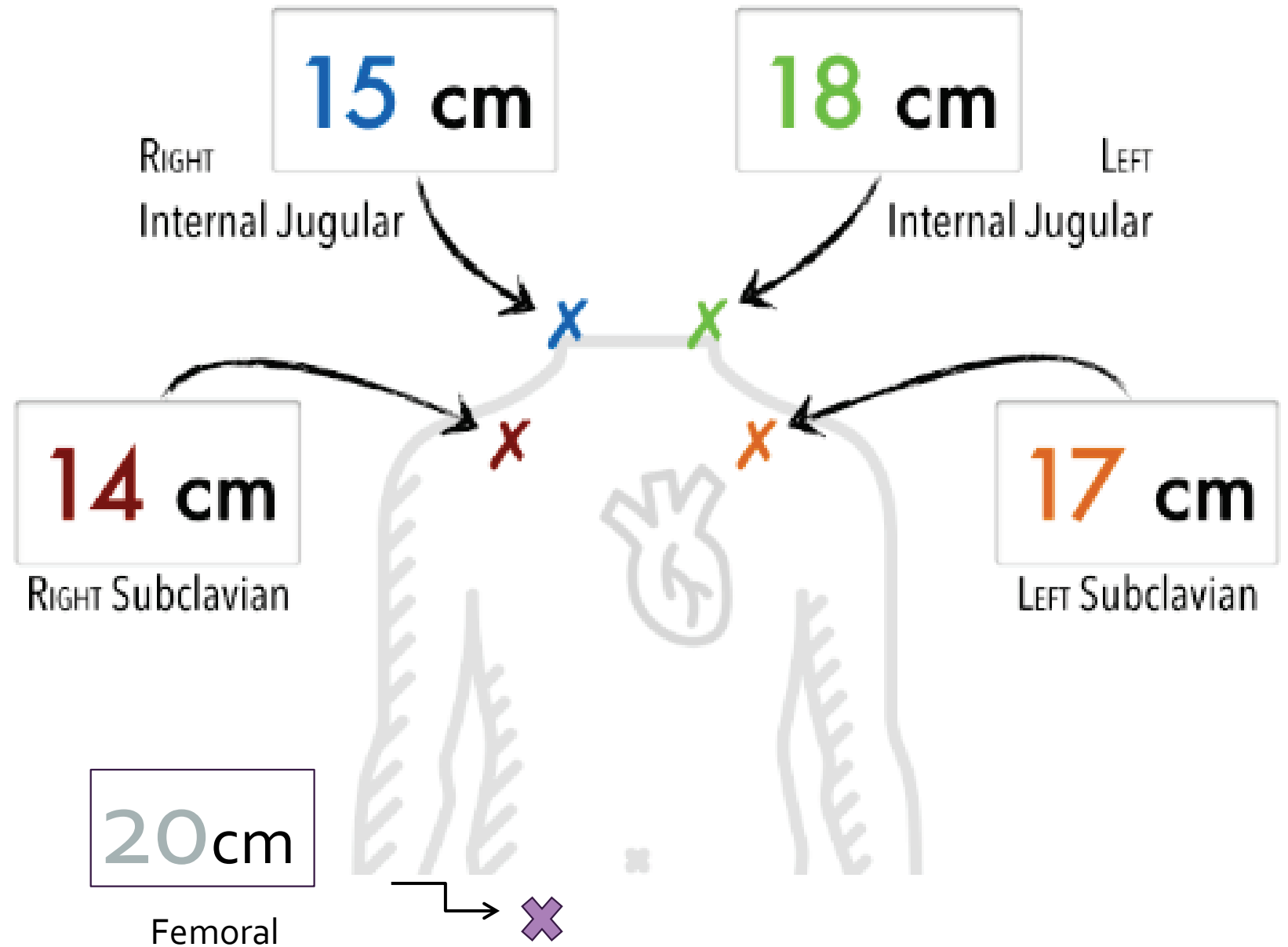
Figure 5 Sedillot's triangle: sternal head of sternocleidomastoid (yellow arrow), clavicular head sternocleidomastoid (orange arrow), clavicle (red arrow); and position of appropriate cutaneous puncture at apex of triangle (black star).



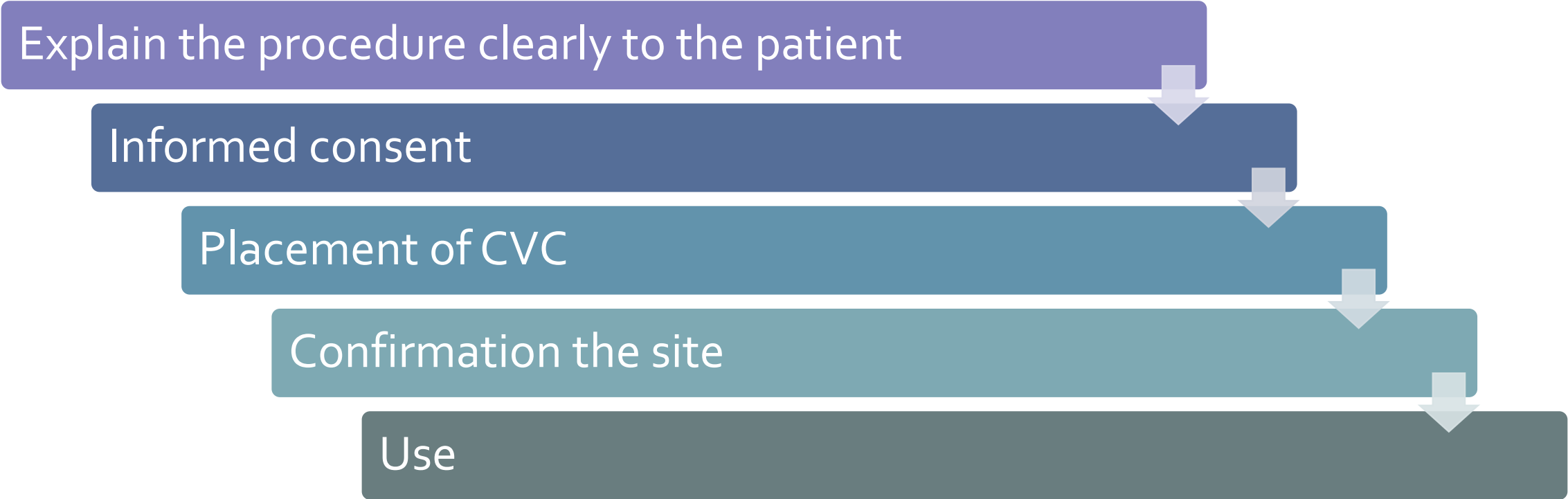




Length



Explain the procedure clearly to the patient



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graph TD; A[Explain the procedure clearly to the patient] --> B[Informed consent]; B --> C[Placement of CVC]; C --> D[Confirmation the site]; D --> E[Use];
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The diagram illustrates a five-step procedure for CVC placement. The steps are presented in a descending staircase format, with each step in a colored box and connected by downward-pointing arrows. The colors transition from purple at the top to dark grey at the bottom. The final step, 'Use', is contained within a large purple rectangular area at the bottom of the slide.

Informed consent

Placement of CVC

Confirmation the site

Use

Procedure

Equipment

Sterile gloves, gown, mask, and a large sterile drape

Sterile gauzes

Antiseptic solution such as chlorhexidine.

Ultrasound machine with a sterile probe cover

Central line kit: introducer needle, guidewire, dilator, and catheter

Syringes (5/10/20cc)

Scapel and blade #11

Stapler set

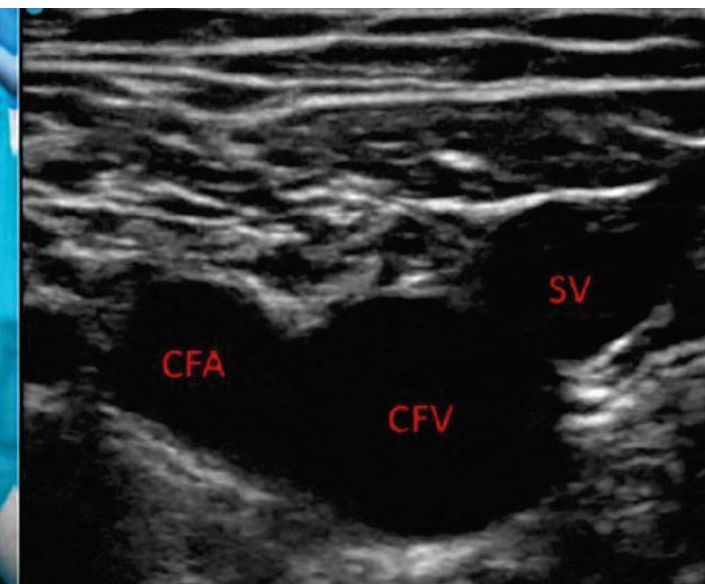
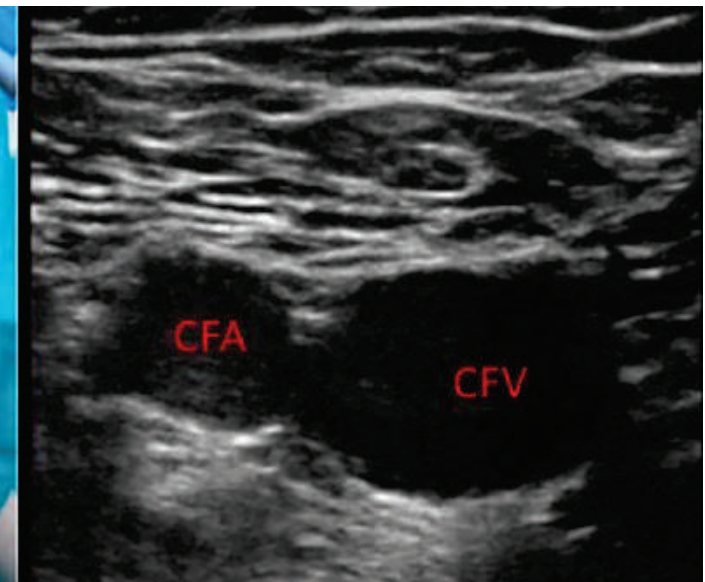
Saline flushes

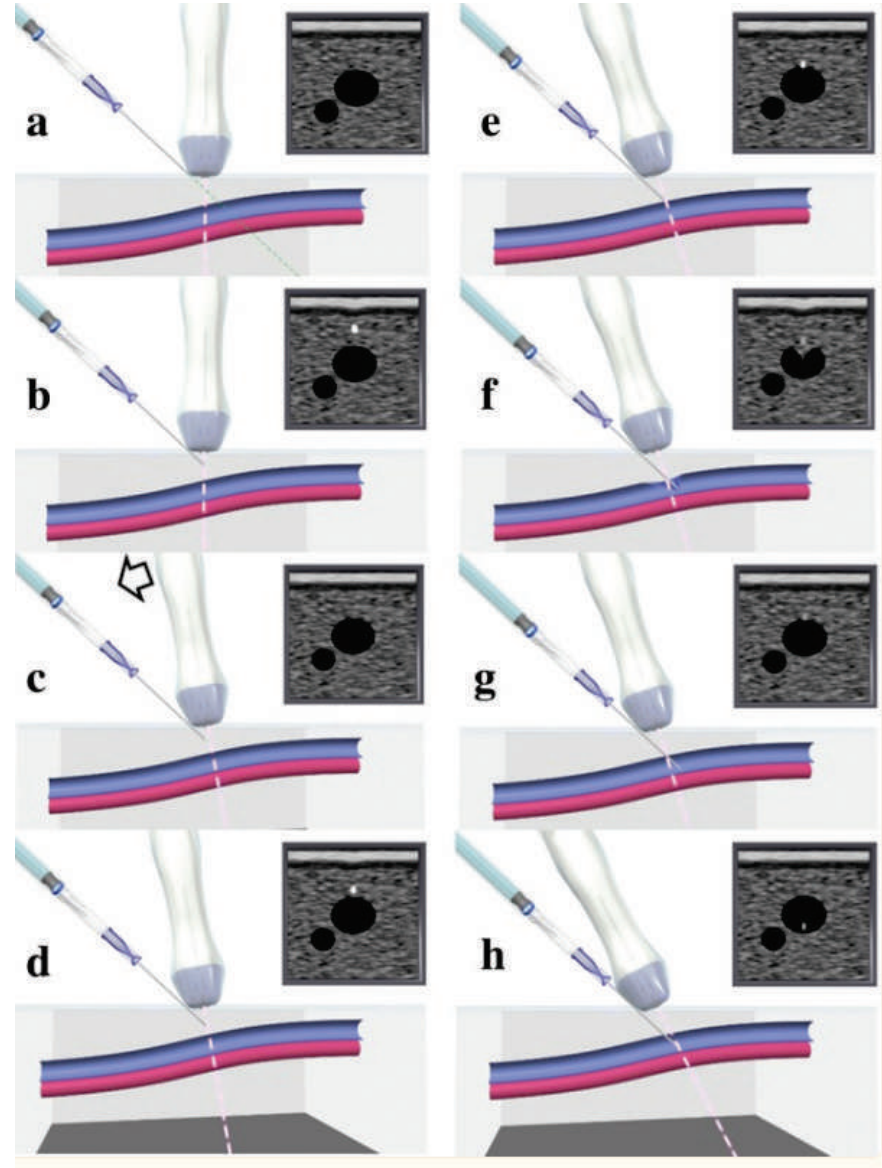
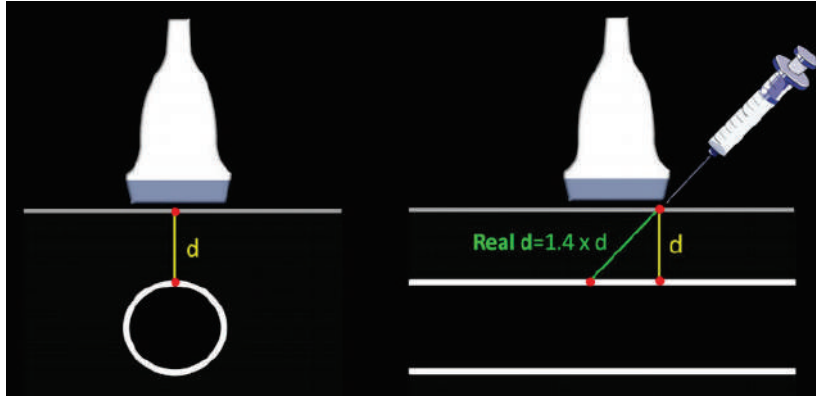
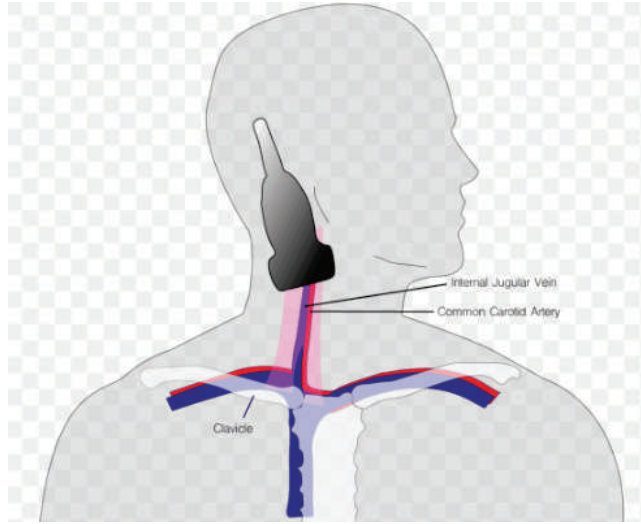
Local anesthetic with syringe and needle.



Ultrasound guidance

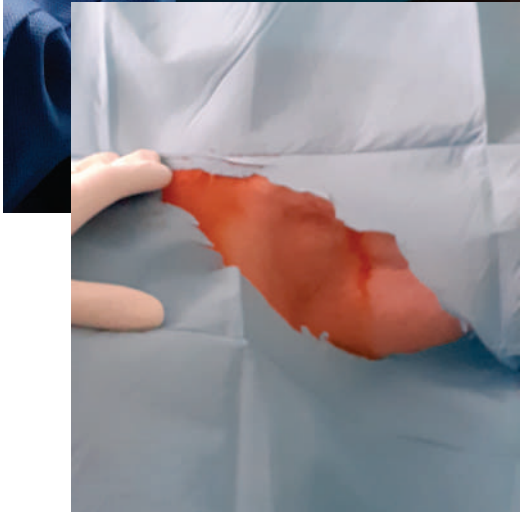




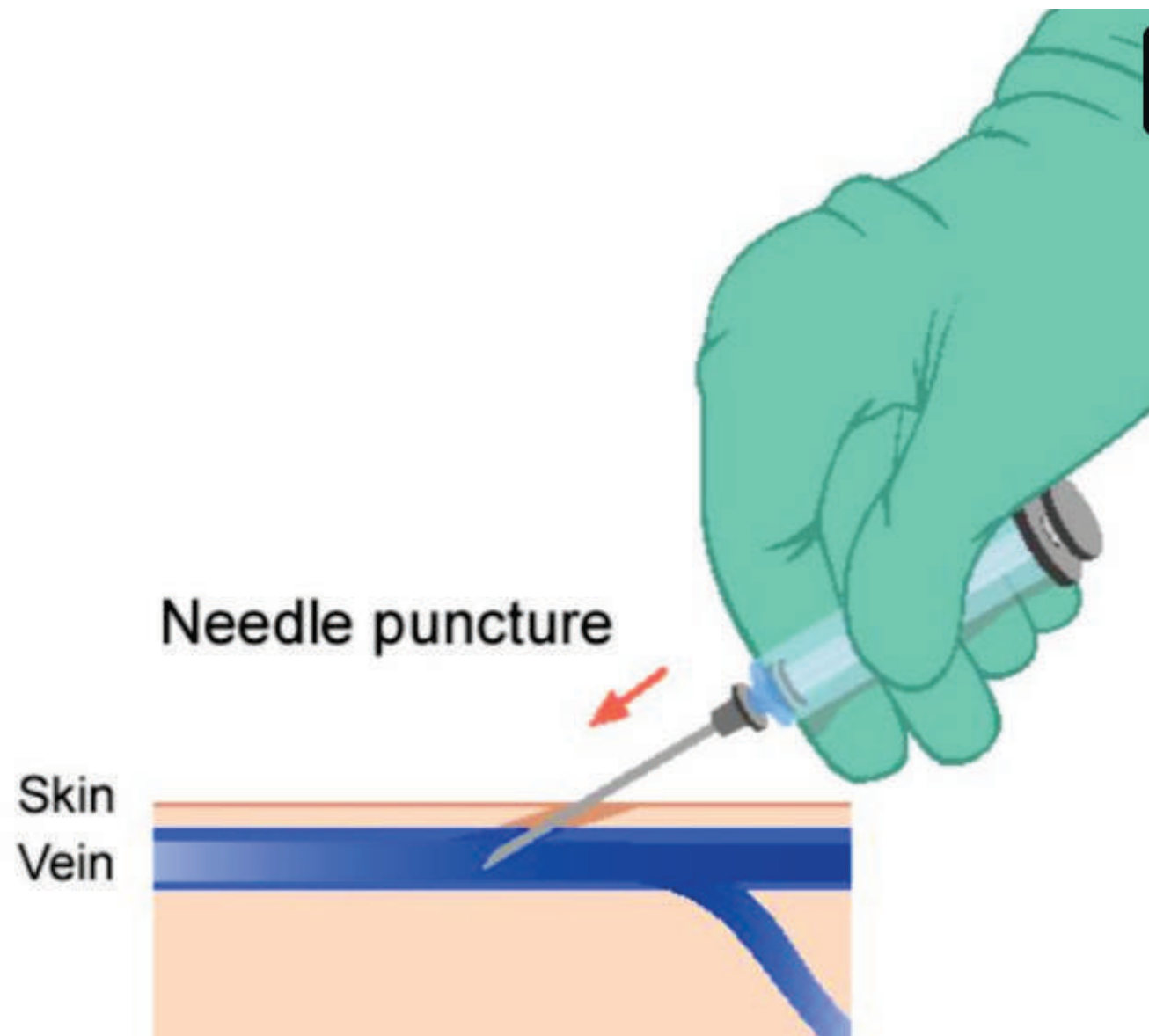


The slide features a decorative layout with a solid purple rectangle at the top left, a larger light purple rectangle below it, and a vertical grey bar on the right side. The word "Preparation" is centered in a purple serif font.

Preparation

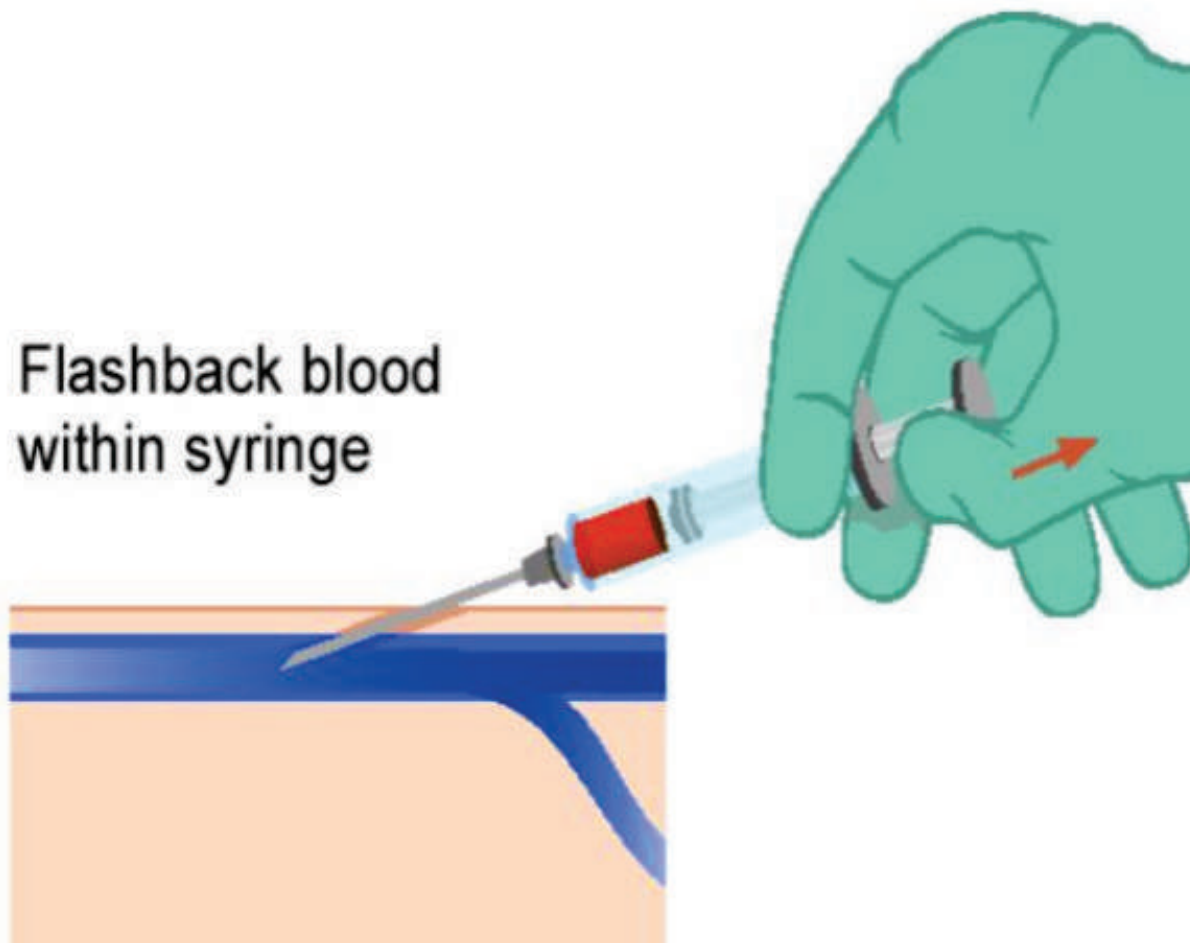


SELDINGER's Technique

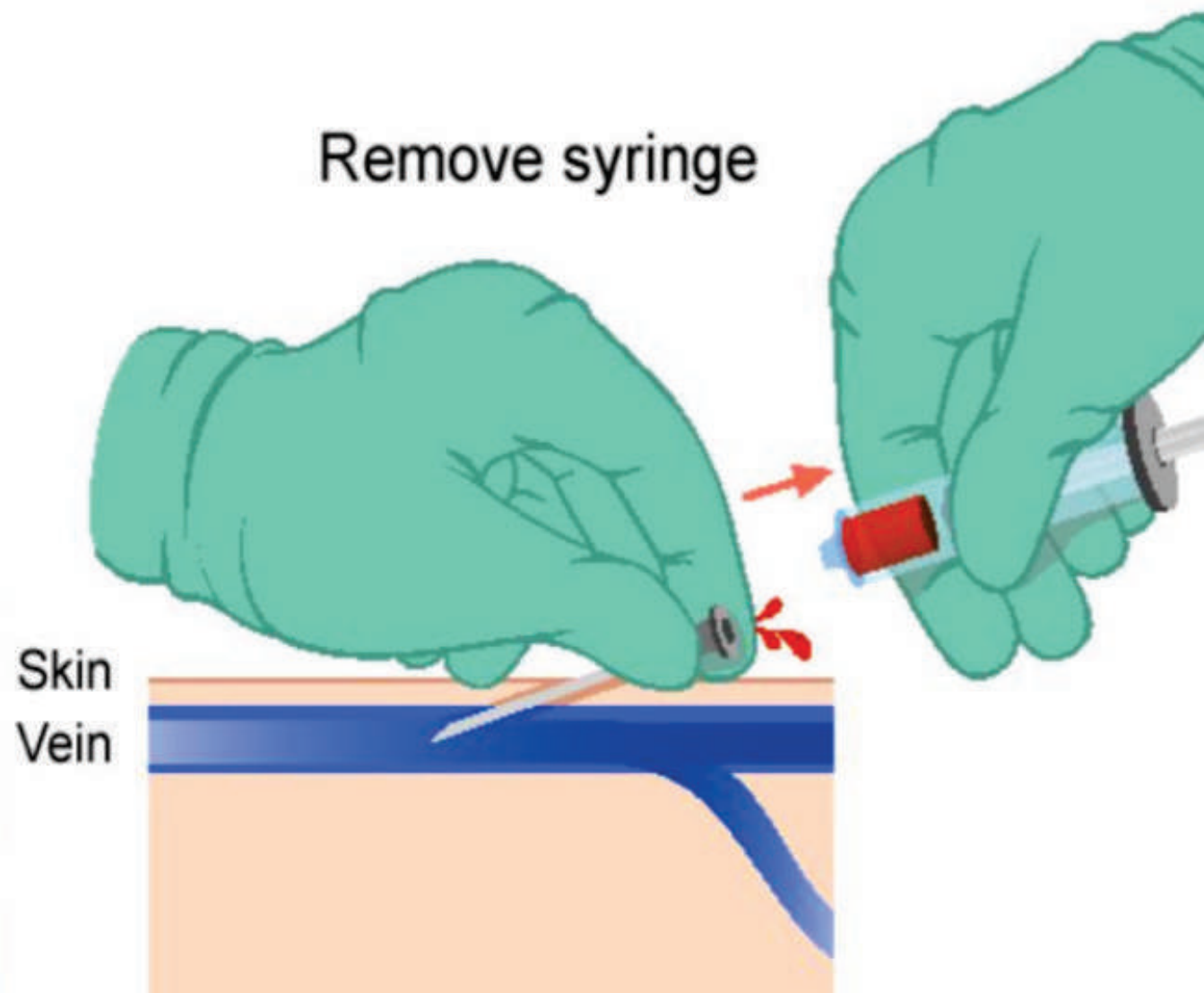


Flashback blood
within syringe

Skin
Vein

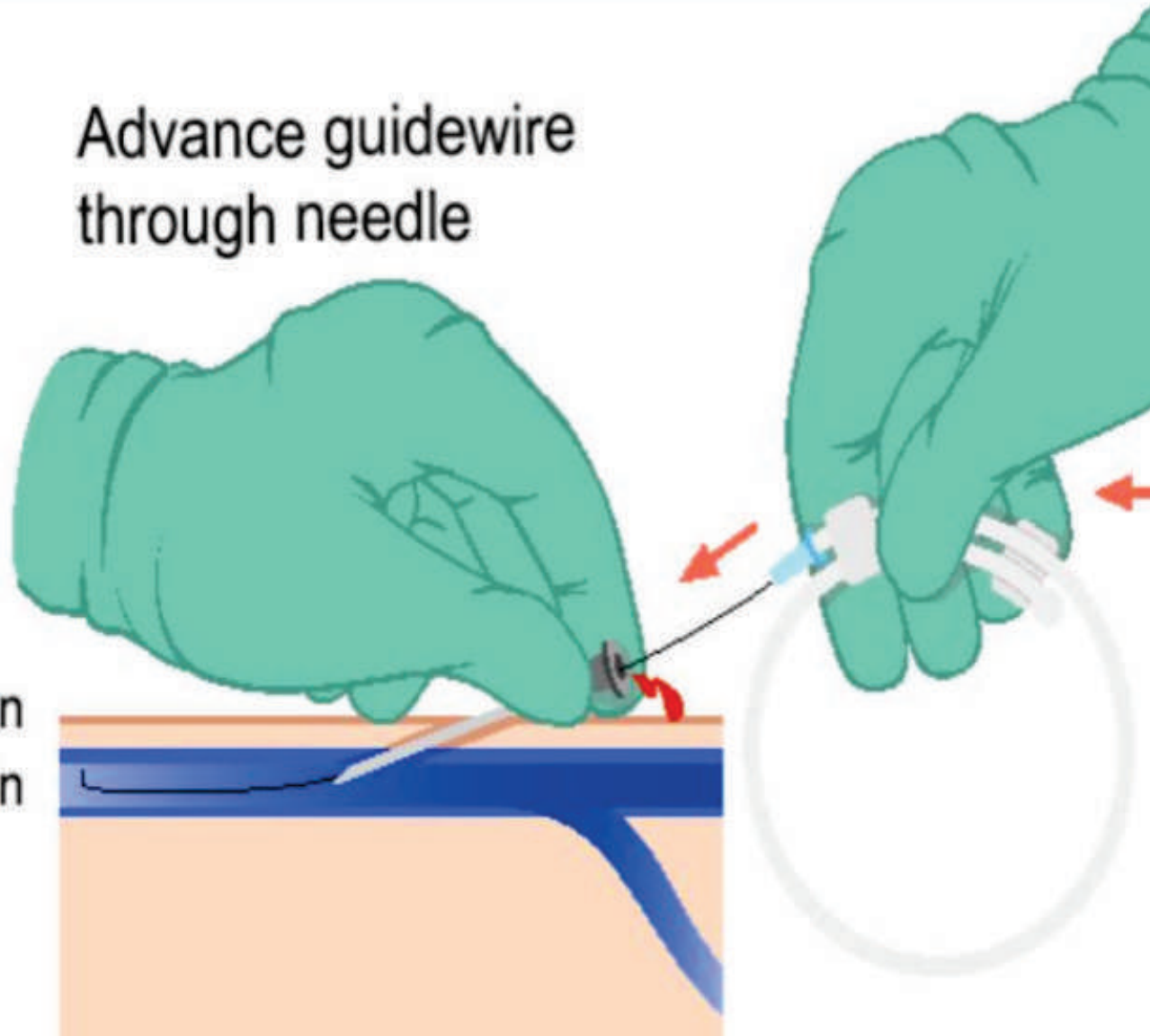


Remove syringe



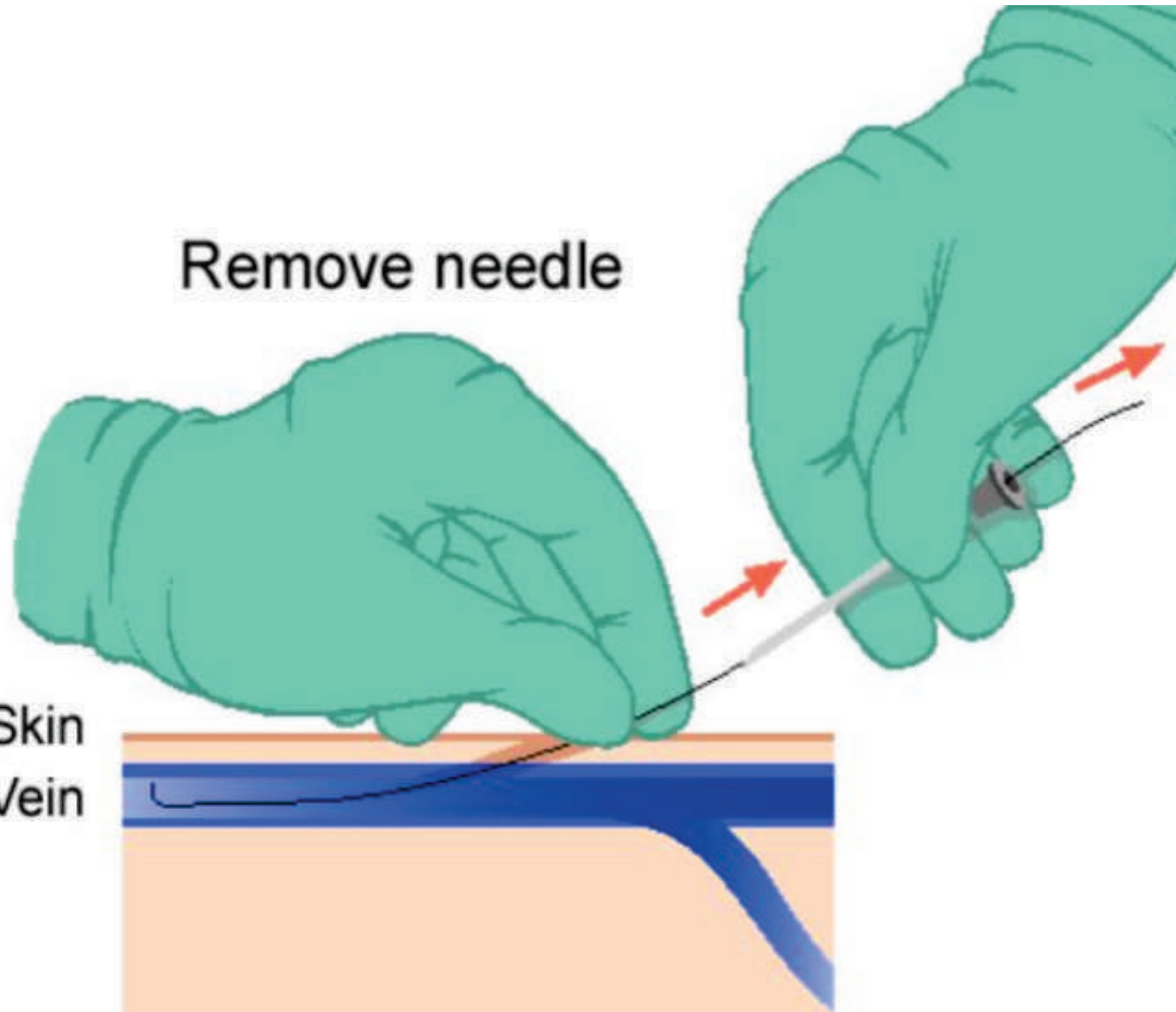
Advance guidewire
through needle

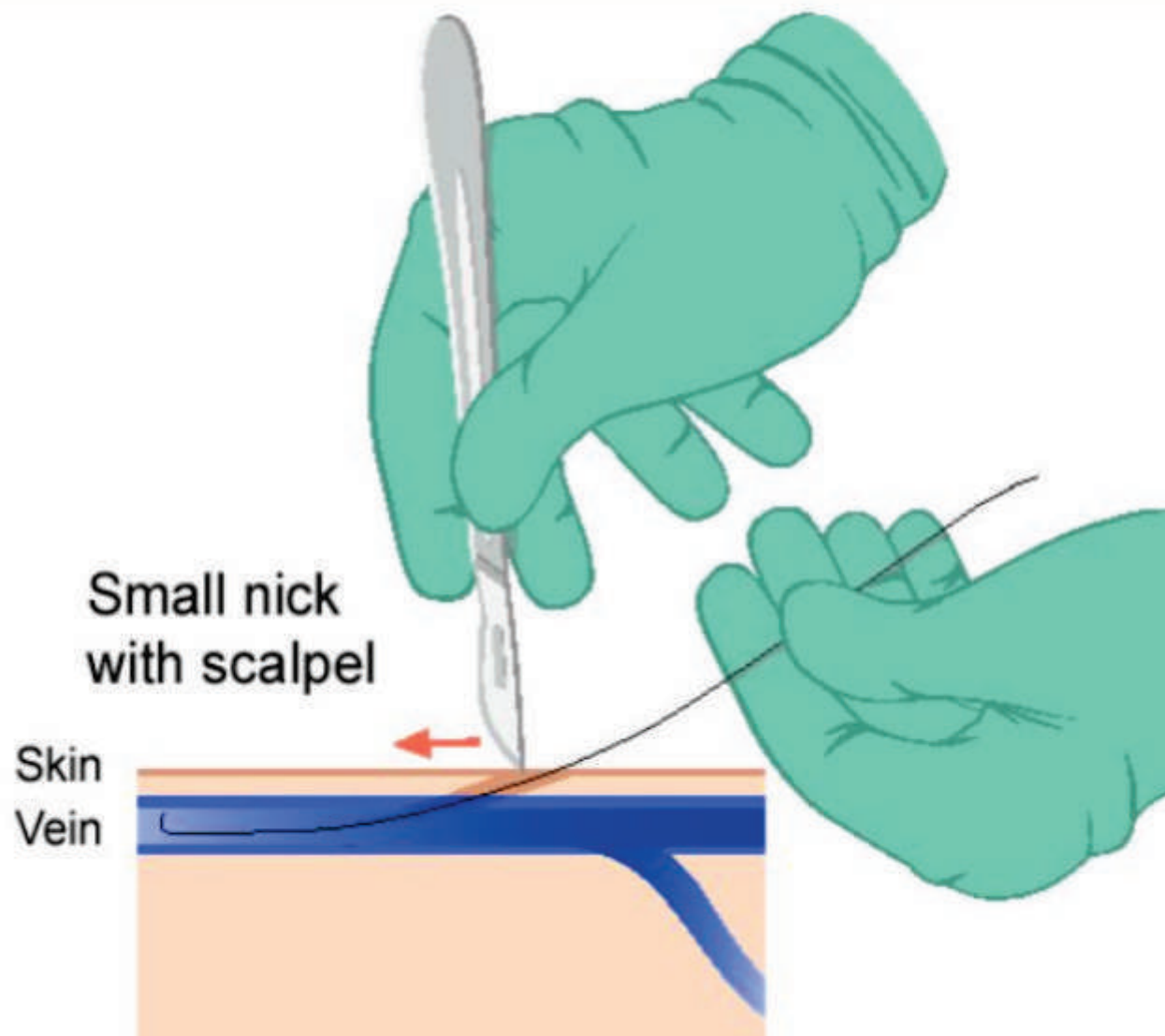
Skin
Vein

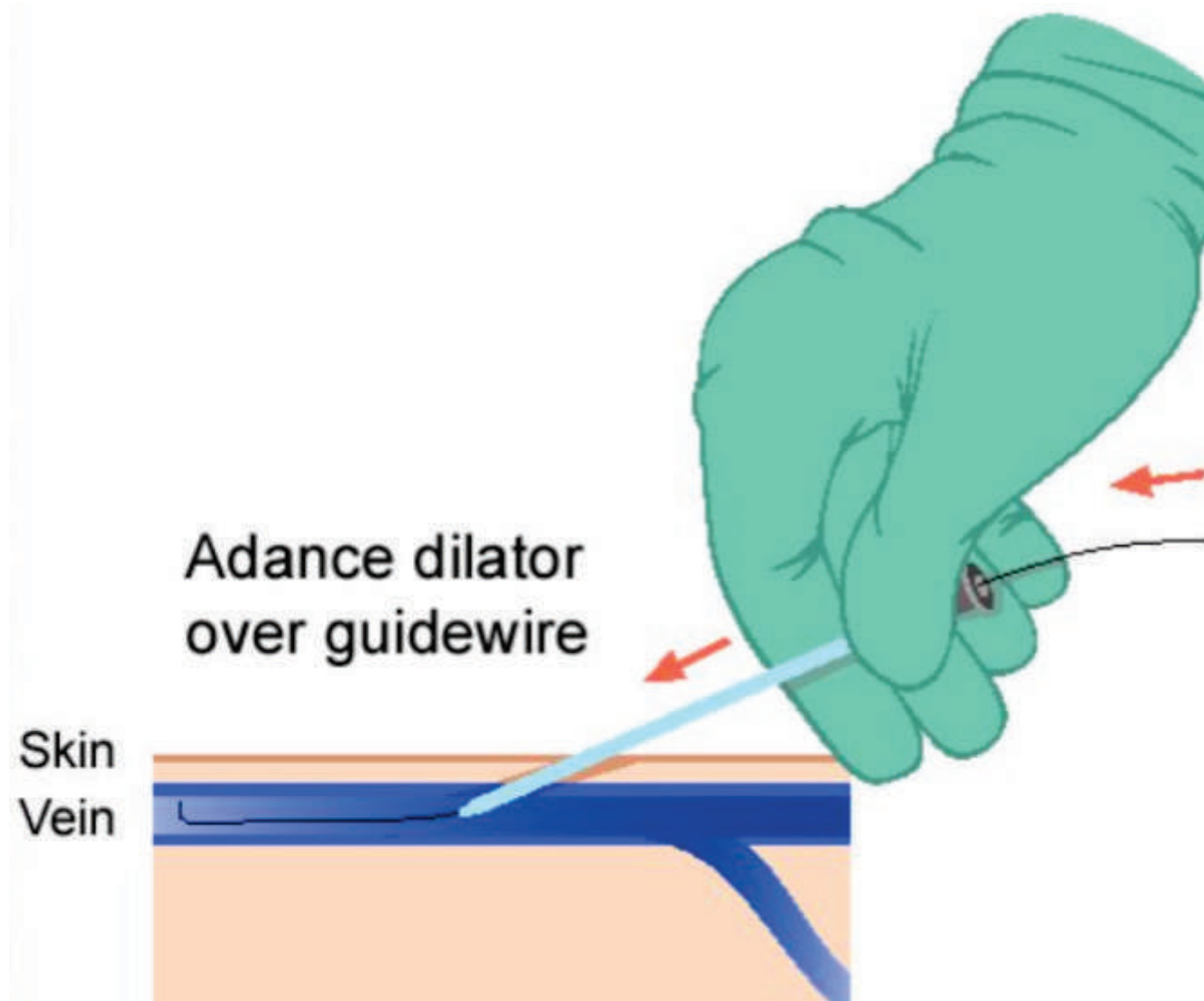


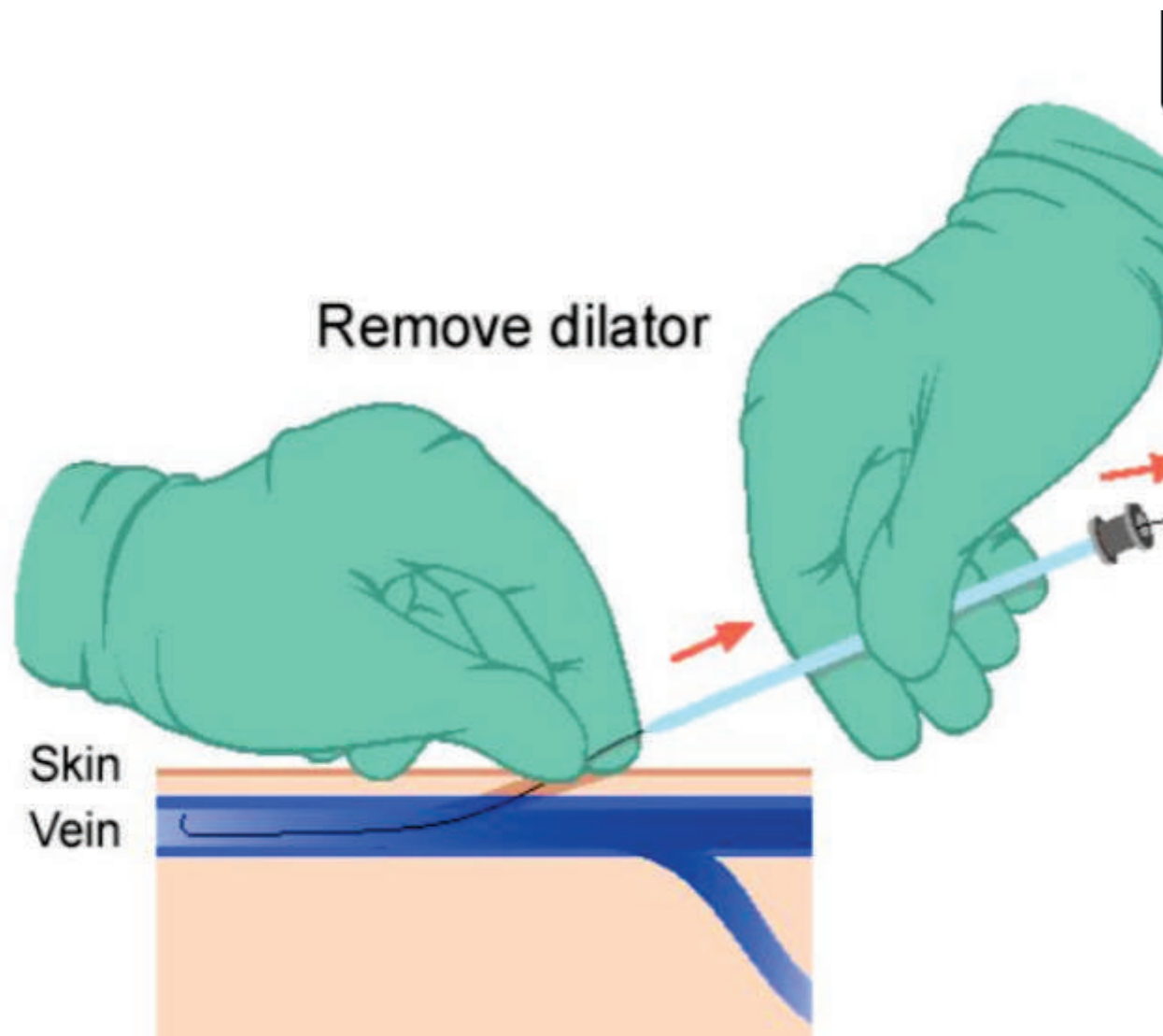
Remove needle

Skin
Vein



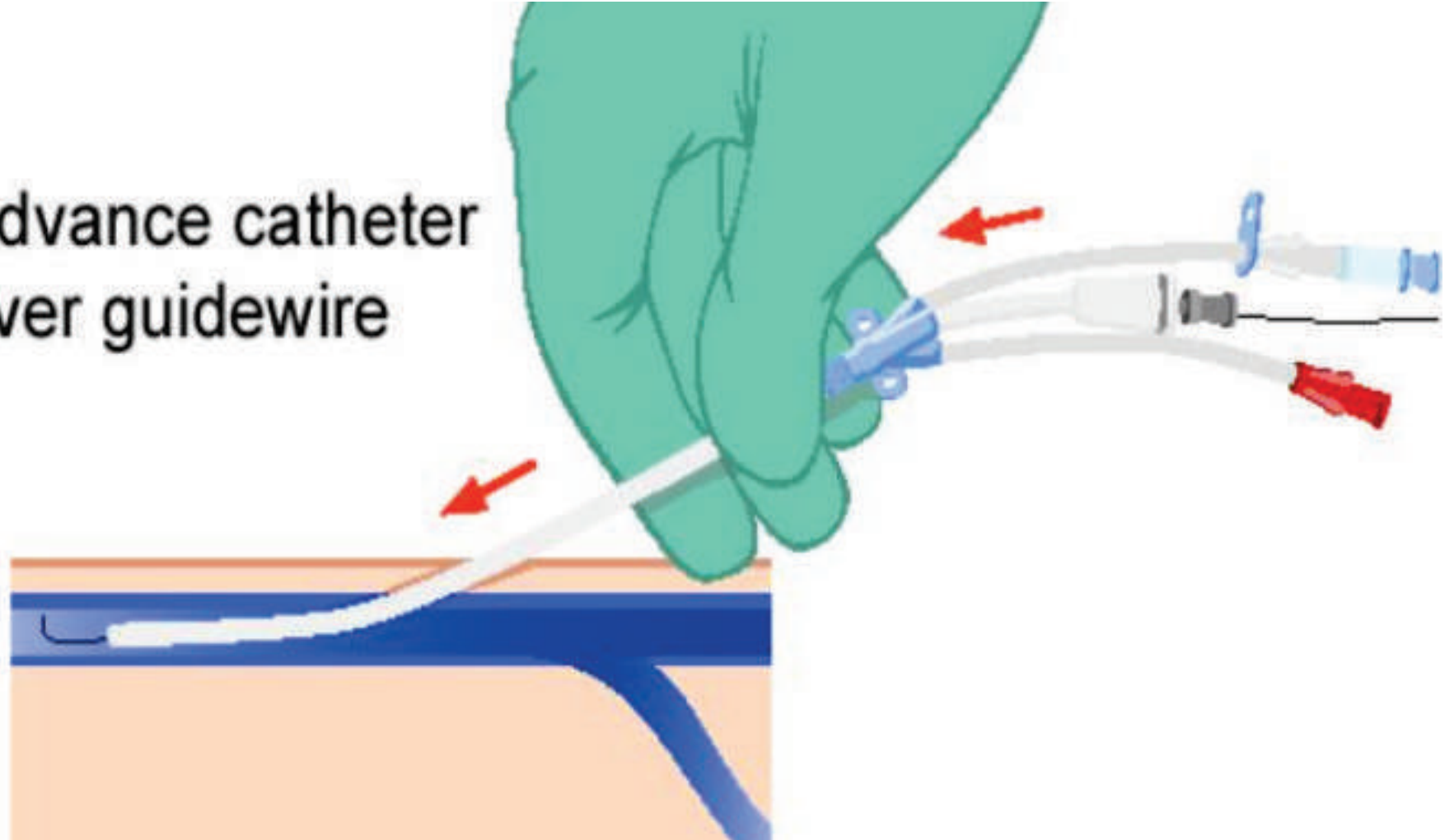




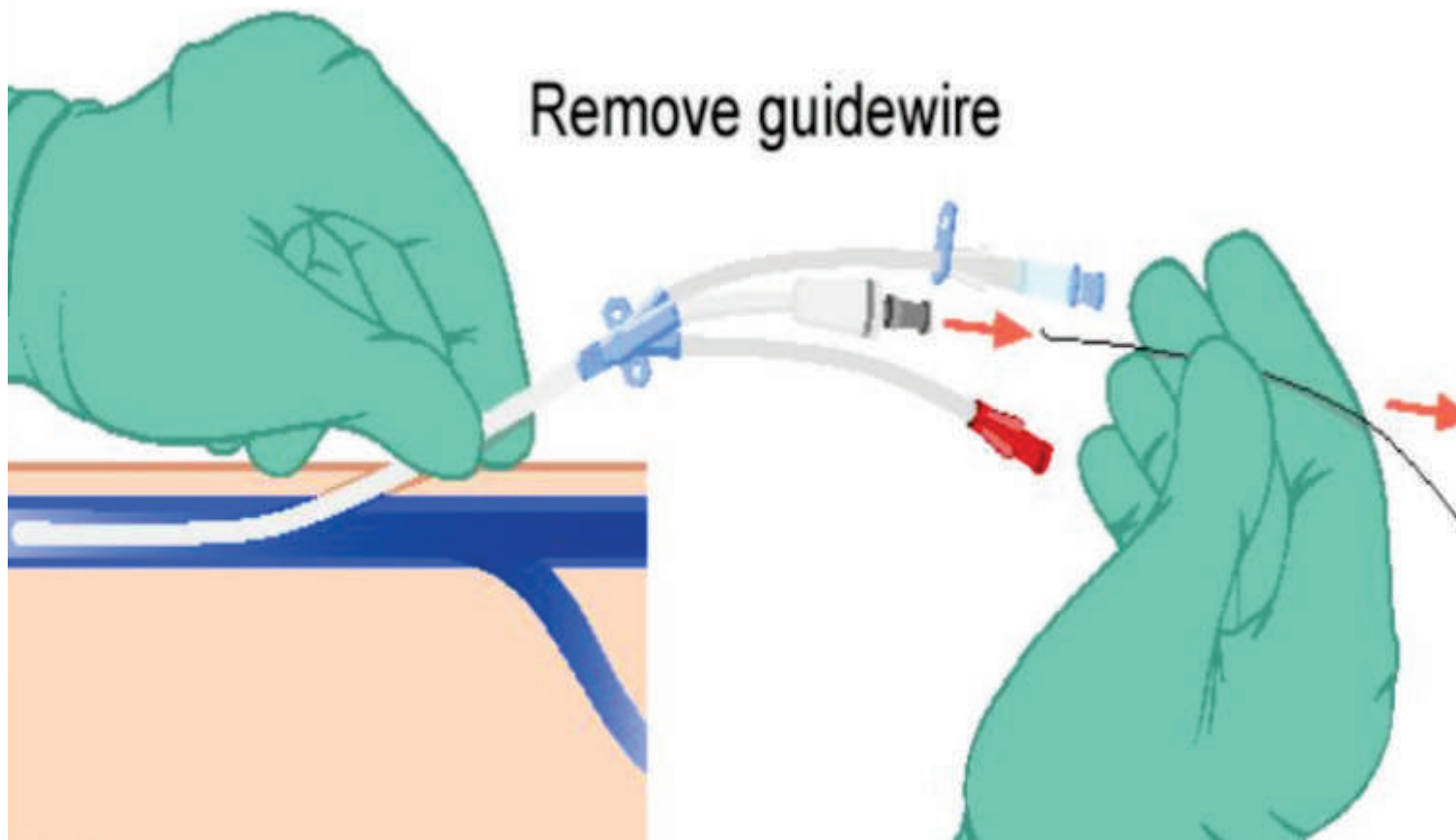


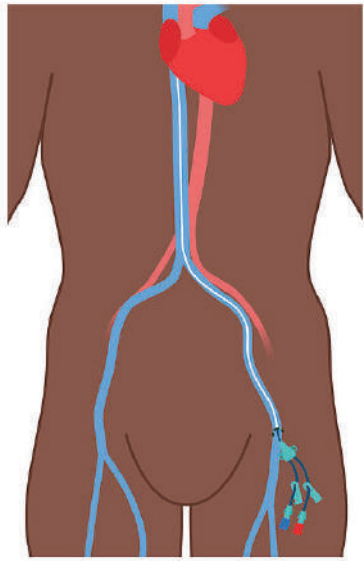
Advance catheter
over guidewire

Skin
Vein

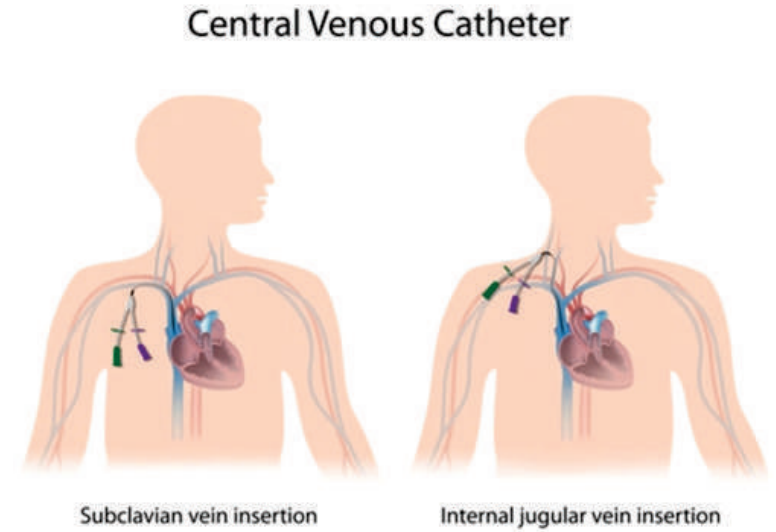
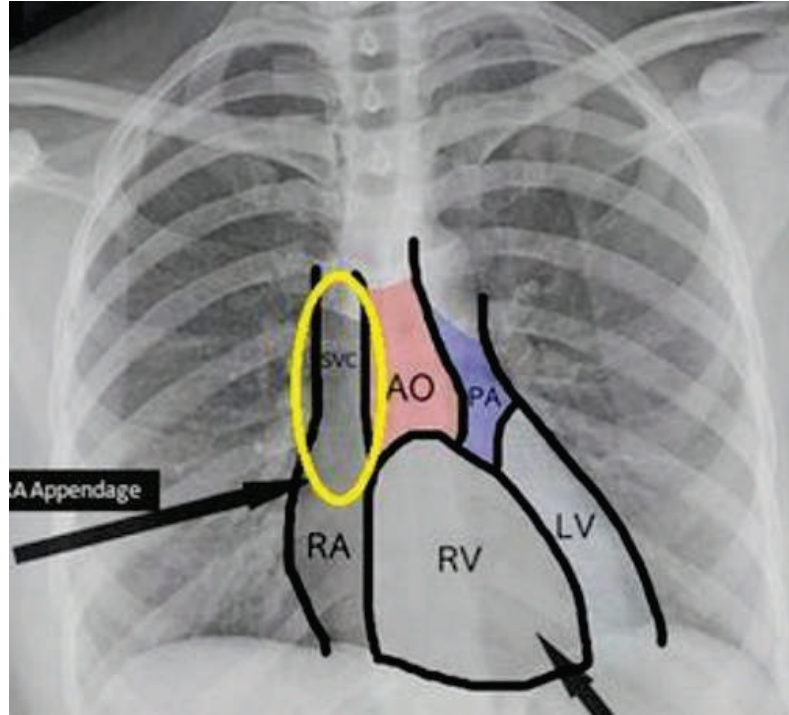


Remove guidewire





FEMORAL LINE



Position Confirmation

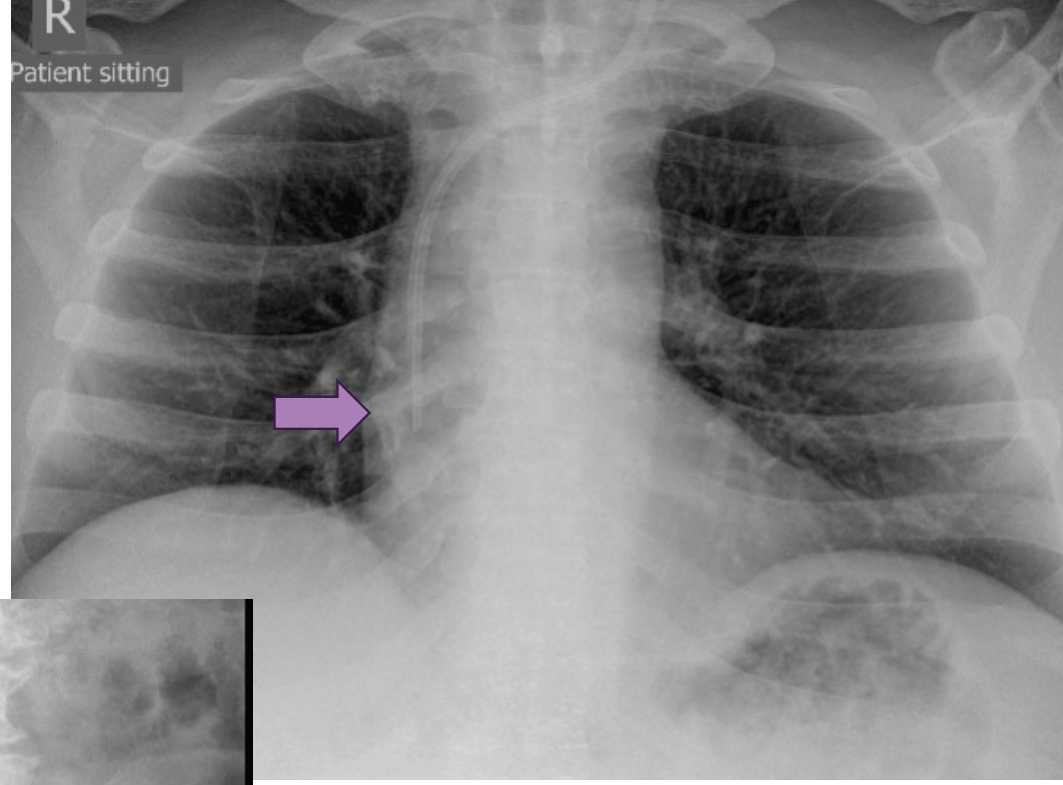
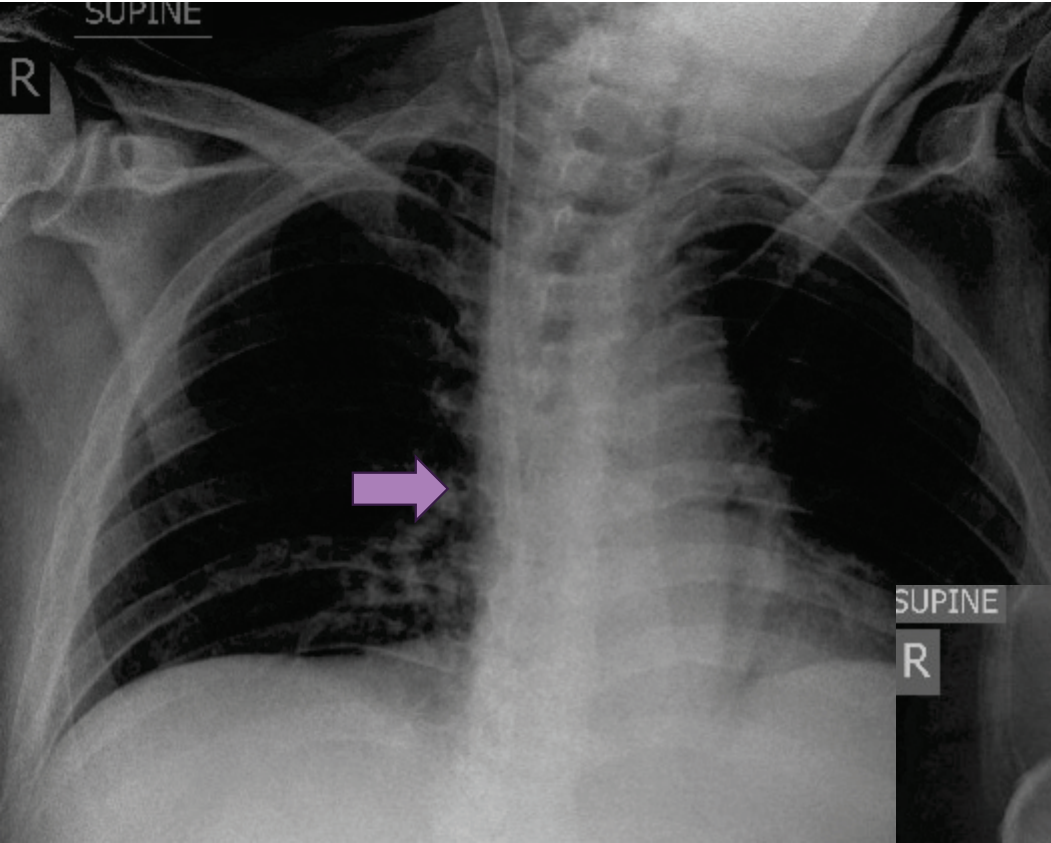


TABLE 7.2 Complications of Central Venous Catheterization

Immediate Complications

- Arterial puncture (all)
- Pneumothorax (IJ, SC)
- Hemothorax (IJ, SC)
- Arrhythmias (IJ, SC)
- Air embolism (all IJ, SC >> F)
- Perforation of cardiac chamber (IJ, SC)
- Pericardial tamponade (IJ, SC)
- Retroperitoneal hemorrhage (F)

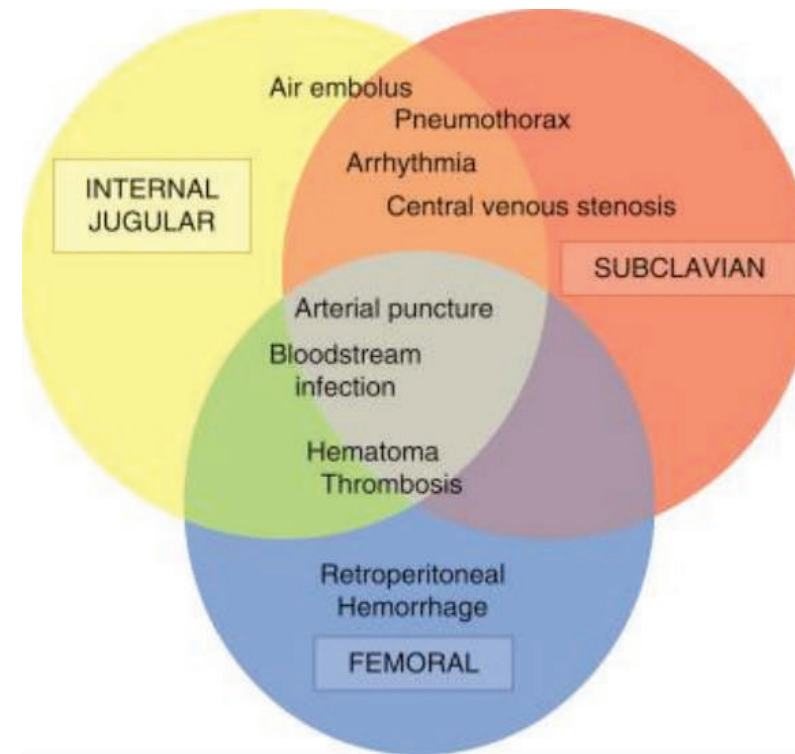
Delayed Complications

- Thrombosis (all)
- Infection (all)
- Central venous stenosis (SC >> IJ)
- Arteriovenous fistula (all)

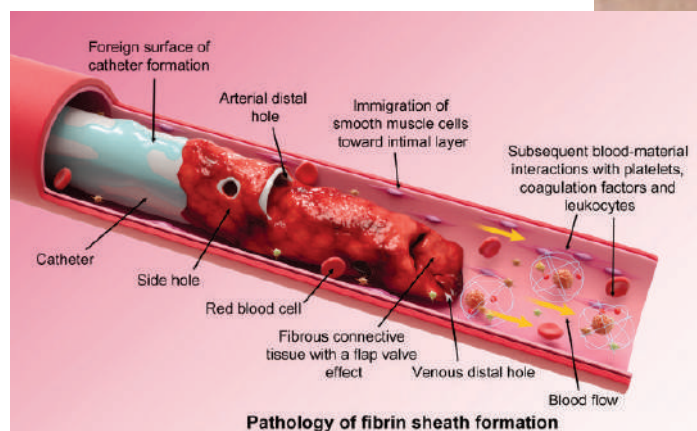
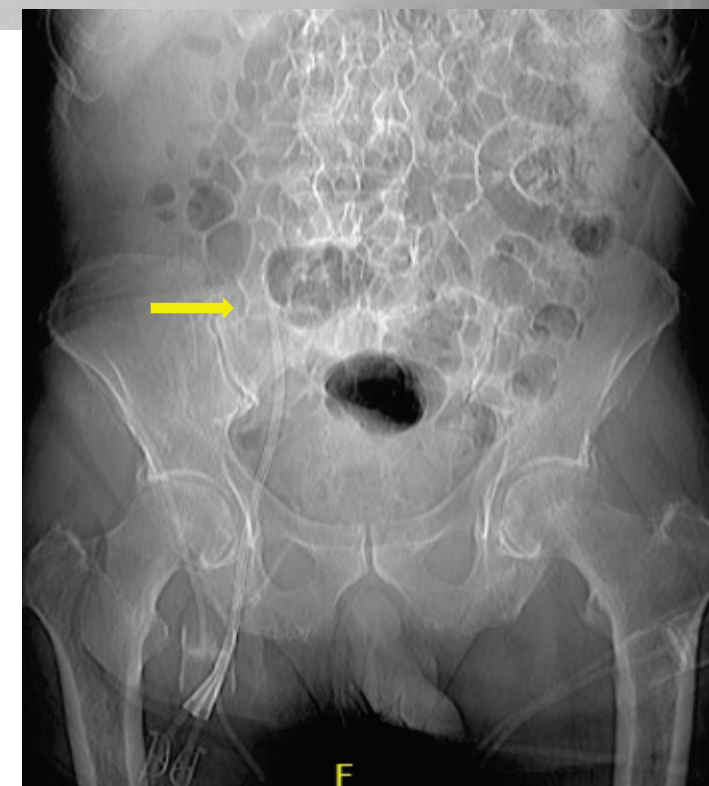
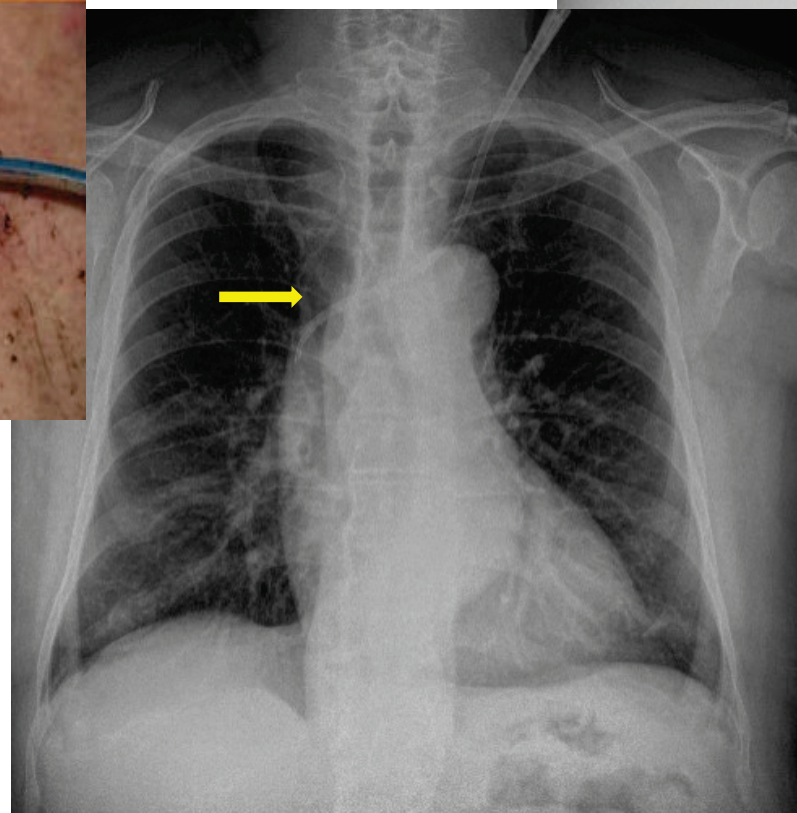
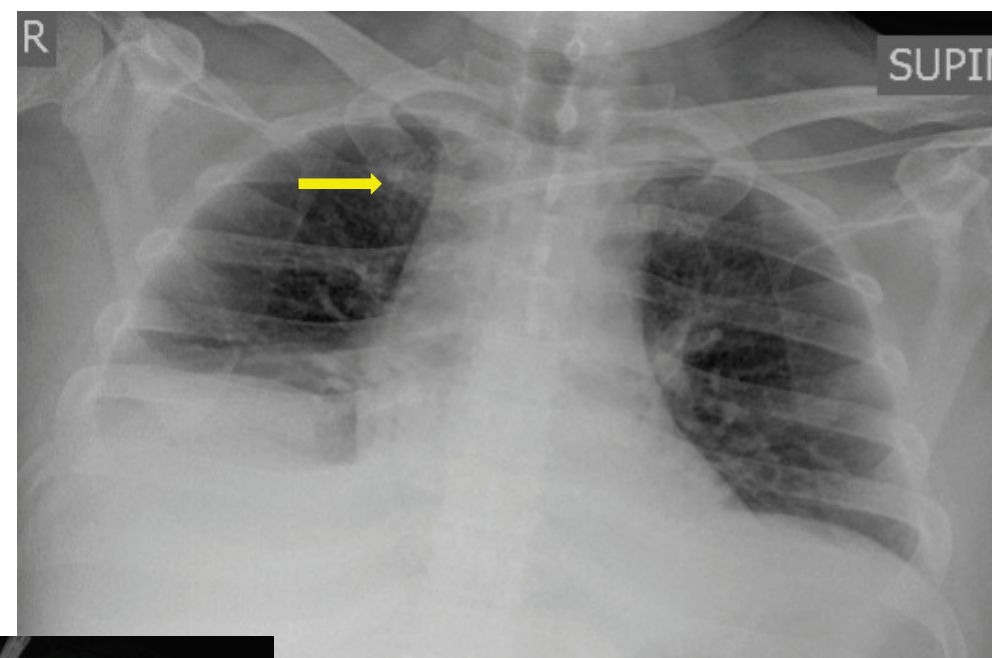
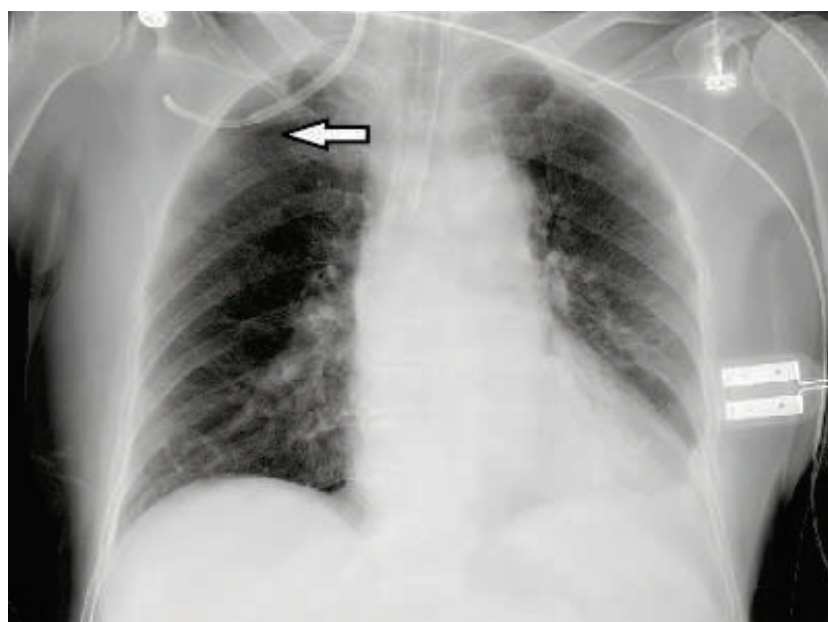
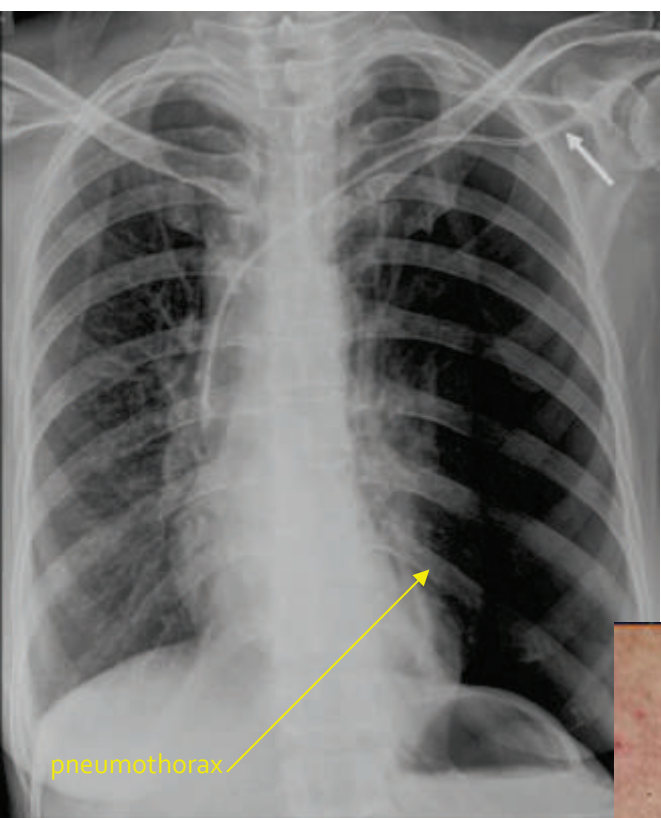
Injury to Adjacent Structures

- Brachial plexus (IJ, SC)
- Recurrent laryngeal nerve (IJ, SC)

IJ, internal jugular; SC, subclavian; F, femoral.



Complications



Take home messages....

- **Preparation**
- **Right method**
- **Practice**



The background features two large, solid purple geometric shapes. On the left is a parallelogram, and on the right is a triangle, both pointing towards the center where the text is located.

Thank you for your
attention