بسم الله الرحمن الرحيم

Intravenous access

Overview of central venous access in adults

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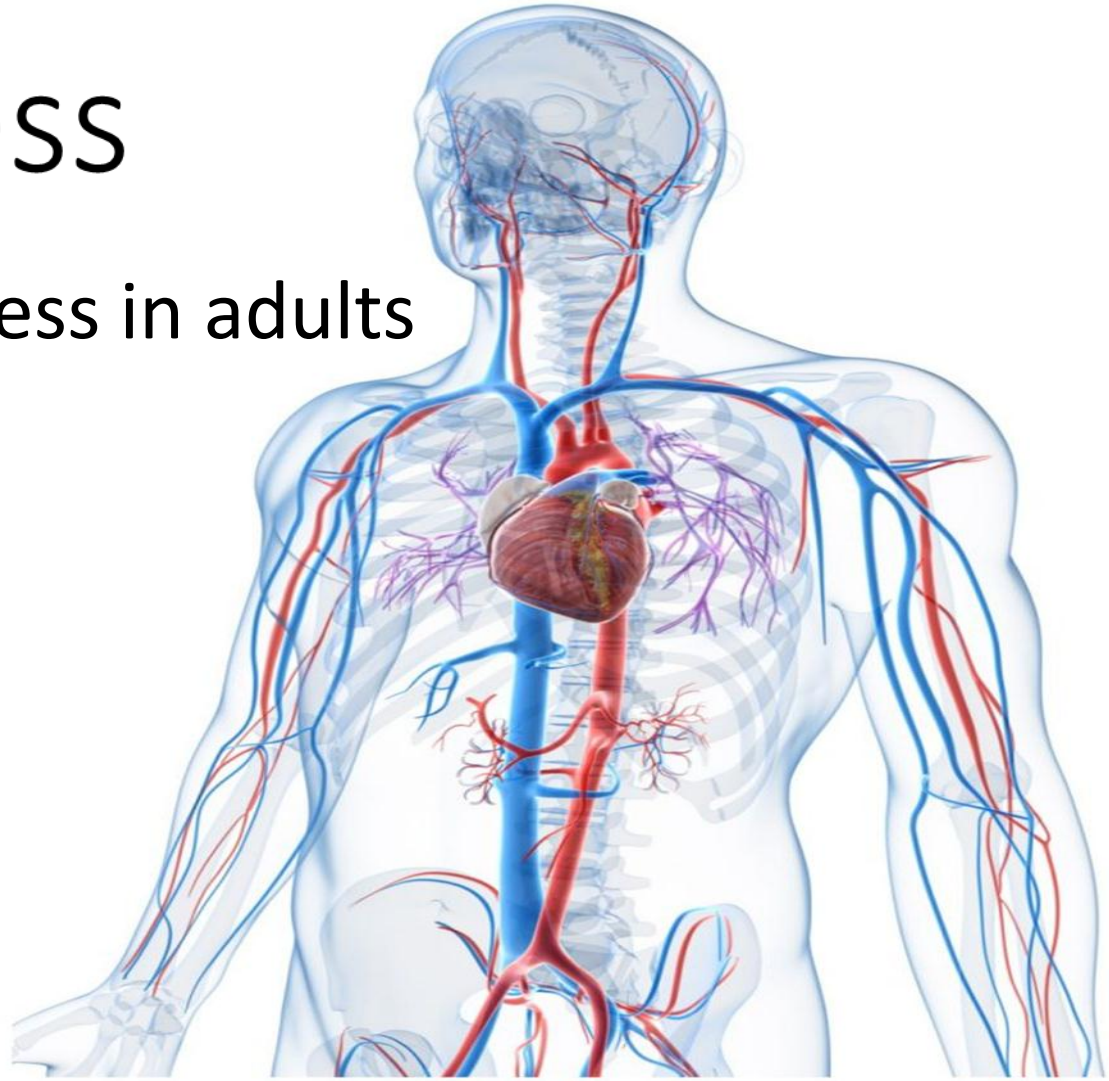
Reference : Uptodate



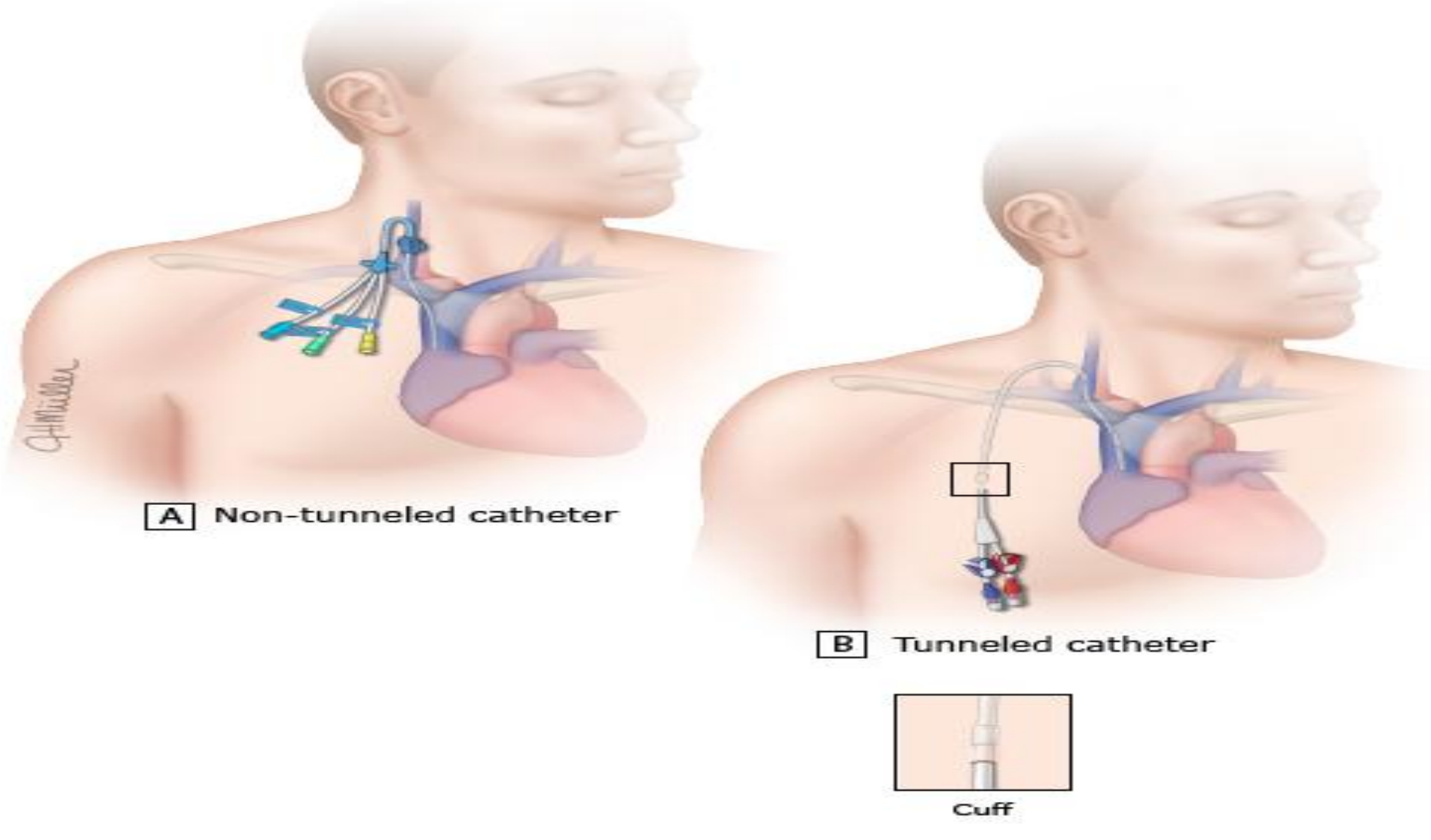
Central venous access

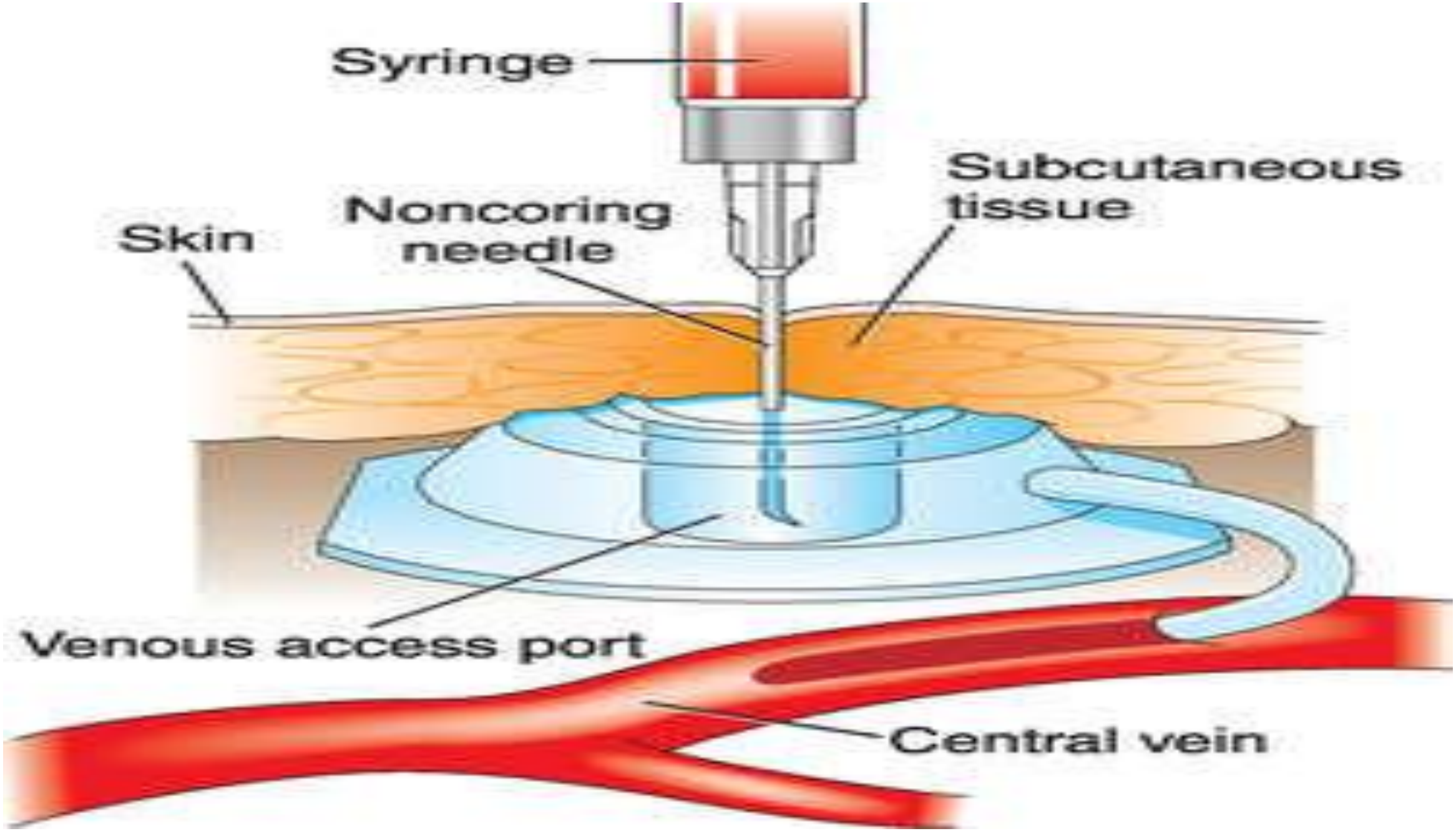
Introduction:

Located in the superior vena cava , inferior vena cava

Types :

١. peripherally inserted central catheters (PICC)
٢. Central venous catheters :tunneled
non-tunneled
port


A Non-tunneled catheter
B Tunneled catheter
Cuff


Syringe
Noncoring needle
Subcutaneous tissue
Skin
Venous access port
Central vein

Central venous access

Indications :

١. Inadequate peripheral venous access
٢. Peripherally incompatible infusions
٣. Hemodynamic monitoring
٤. Extracorporeal therapies

Central venous access

Contraindications :

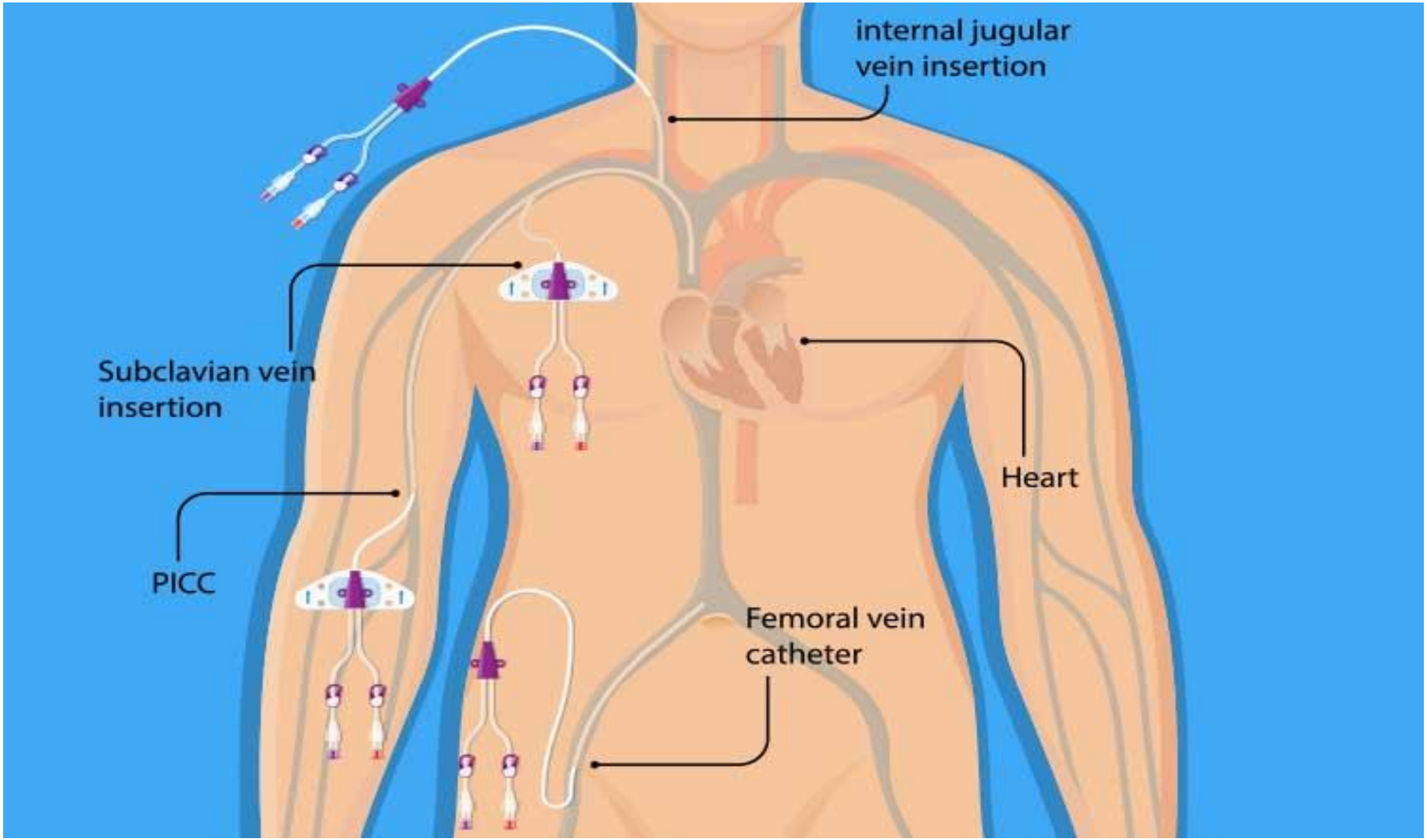
١. Coagulopathy and /or thrombocytopenia

٢.Site specific considerations

Central venous access

Access sites :

١. Jugular
٢. Subclavian
٣. Femoral
٤. PICC


internal jugular
vein insertion
Subclavian vein
insertion
PICC
Heart
Femoral vein
catheter

FACTORS INFLUENCING CATHETER SELECTION

١. Duration of venous access
٢. Nature of infusate
٣. Number of lumens needed
٤. Patient considerations

Site selection :subclavian

Advantages

- Easier to maintain dressings
- More comfortable for patient
- Better landmarks in obese patients
- Accessible when airway control is being established

Disadvantages

- Increased risk of pneumothorax
- Bleeding less amenable to pressure
- Risk for stenosis

Selection :Duration

Duration IV access required	Selection of cannula
< ٧ days	Peripheral IV access forearm > hand > foot > cubital fossa Ultrasound guided peripheral IV access (may last up to ٧ days)
٧-١٤ days or failed peripheral IV attempts	PICC (peripherally inserted central catheter) or Percutaneous CVAD (Central Venous Access Device)
> ١٤ days / longer term	PICC, percutaneous CVAD, port

Complication:

- Immediate :
- Bleeding
- Arterial puncture
- Arrhythmia
- Air embolism
- pneumothorax

- Delayed :
- Infection
- Venous thrombosis
- Venous stenosis

Venous thrombosis

- Doppler
- Anticoagulant

Infection control :

- Hand hygiene
- Skin antisepsis
- Max barrier
- Avoid femoral vein
- Remove unnecessary CV line

Five steps to prevent central line infections

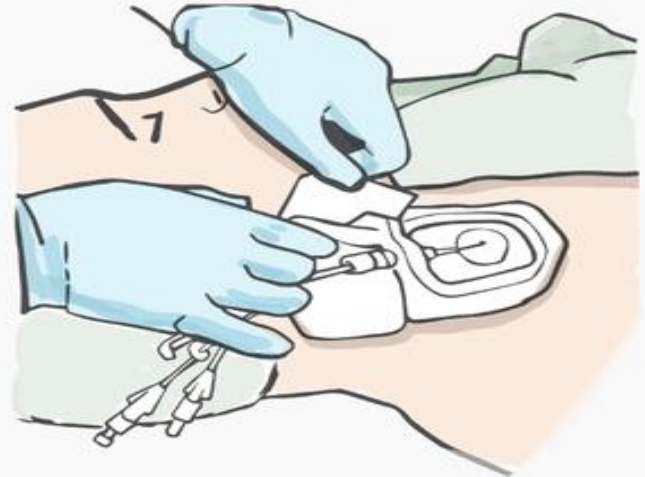
1 Wash hands using soap or alcohol prior to placing the catheter.

2 Wear sterile gloves, hat, mask and gown.

3 Completely cover the patient with sterile drapes. Avoid placing the catheter in the groin, if possible.

4 Clean the insertion site on the patient's skin with chlorhexidine antiseptic solution.

5 Remove catheters when they are no longer needed.



SOURCE: *Safe Patients, Smart Hospitals.* Peter Pronovost

Vox

USE OF ULTRASOUND

- Guide to best site
- Reduce the time and complication
- Detection of complications

CONFIRMATION OF CATHETER TIP POSITION

باتشکر از توجه شما