Placement of Subclavian Central Venous Catheter

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Indications

- Central venous access
- Central venous pressure monitoring
- Placement of Swan-Ganz catheter
- Hemodialysis

Essential Steps

1. Position patient supine and in a slight Trendelenburg position.
2. Prep the skin and set your sterile drapes over the field. Include the neck on the chosen side in case of change to an internal jugular line.
3. Apply local anesthesia.
4. Identify your landmarks and insert the needle at 30° aiming for the sternal notch.
5. Once the vein is located, place catheter via Seldinger technique.
6. Ensure catheter is working properly: aspirate from each port and then flush each port with saline/heparinized saline.
7. Secure the catheter in place and apply sterile dressing.
8. Obtain a chest x-ray to assess proper line placement, and rule out complications such as hemothorax or pneumothorax.

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Note These Variations

- Use of ultrasound guidance.
- Hickman catheter.
- Subcutaneous port.
- Kits vary; be familiar with the one you are using.
- Passage of Swan-Ganz catheter.

Complications

- Pneumothorax
- Hemothorax
- Venous air embolus
- Arterial puncture
- Line infection
- Venous thrombosis
- Hematoma

Template of Operative Dictation

Preoperative Diagnosis *Hemodynamic instability/need for total parenteral nutrition/other*

Procedure Placement of central venous catheter via *right/left* subclavian route

Postoperative Diagnosis Same

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Indications This ___-year-old *male/female* required central venous access for *hemodynamic monitoring/central venous nutrition/other* due to complications of ___. The subclavian route was chosen.

Description of Procedure Informed consent was obtained. Time-outs were performed using both preinduction and pre-incision safety checklist to verify correct patient, procedure, site, and additional critical information prior to beginning the procedure. The patient was supine and the bed was placed in a 15-degree Trendelenburg position. The skin over the left/right clavicle was inspected for any signs of infection. The skin was scrubbed thoroughly with chlorhexidine and the site was draped.

The central line kit was opened, and each of the central line lumens was flushed with saline/heparinized saline. The skin and subcutaneous tissue were anesthetized with *1% lidocaine*. Anatomic landmarks were identified, and a site was chosen for puncture 2 cm lateral and 2 cm inferior to the bend of the clavicle. The needle was inserted at an angle of 30° to the skin with the long axis of the needle aimed at the sternal notch. The needle was advanced parallel and just posterior to the clavicle until the vein was accessed. The needle was stabilized while the syringe was removed, and the hub of the needle was occluded with a finger. The J-tipped end of the guidewire was then introduced into the needle and advanced without resistance. No arrhythmias were seen on the EKG monitor while advancing the guidewire. The needle was removed over the guidewire leaving the guidewire in place. A 2 mm skin incision was made at the base of the guidewire. The guidewire was held in place while a dilator was gently advanced and removed over the guidewire. The catheter was advanced over the guidewire to the desired depth, and then the guidewire was removed.

All of the catheter ports were checked for return of blood and flushed with *saline/heparinized saline*. The catheter was secured in place with *3-0 silk sutures* and a sterile dressing was applied. The patient tolerated the procedure well and there were no immediate complications. A debriefing checklist was completed to share information critical to postoperative care of the patient. A chest x-ray was obtained demonstrating the *catheter tip at the junction of the SVC and the right atrium* (*describe any other findings*).

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