Port Sim Steps

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| **PRIOR** | **LONGER OPTION FOR BETA** | **SHORT FOR BETA** |
| 0. Preprocedure Neck Ultrasound | Ultrasound the Neck to find target Vein (IJ) | Ultrasound Neck |
| 1. Prep and Drape | Sterilize the field (Prep and Drape) | Prep and Drape |
| 2. Port Assembly | Assemble the catheter and hard tunneling device for use later (assemble) | Pre-assemble Catheter |
| 3. Procedure Neck Ultrasound | Now that you’re sterile, find the target vein again | Now sterile, use US to find vein again |
| 4. Local anesthesia to intended Venous Puncture Site | Anesthetize where you want to enter the vein (venous puncture site) | Apply local anesthesia |
| 5. Dermatotomy and Dissect Tract with Kelly Clamp | Make a small cut that the needle and catheter can fit through (dermatotomy site) | Make a nick in neck for the needle |
| 6. Venous Puncture with Micropuncture Needle | Through the dermatotomy site, puncture the target Vein with your Needle | Puncture the vein |
|  | Put a sheath in at the dermatotomy site and attach a syringe to the end, closing the vein to the outside of the body. | Secure access at the neck with wires, sheath and syringe |
|  | Move your attention to the chest |  |
|  | Pick a site to place body of port | Pick a site to place body of port |
| 7. Local anesthesia to the port Pocket Site | Anesthetize the port site | Apply local anesthesia |
| 8. Port Site Incision | Make an incision that the port can fit through | Make an incision for the port |
| 9. Dissect Port Pocket with Kelly Clamp and Flush Pocket | Through the incision, make a subcutaneous pocket for the port to fit | Make a pocket in the SQ tissures |
| 10. Tunnel Catheter to neck incision | Take the catheter you assembled before and tunnel it from the port site to the neck | Use the pre-assembled catheter to tunnel to the neck  **User pre-assembled catheter, tunnel to neck.** |
| 11. Advance Amplatz / Kit Wire Down to IVC | Take off the syringe you placed before, put wire down to the IVC | Remove previously placed syringe and place a wire down the IVC  **Remove placed syringe, place a wire down IVC**  **(or keep old one)**  **(still a bit too long imo)** |
| 12. Place Peel Away Sheath and Advance Catheter | Place a peel away sheath over the wire | Place a peel away sheath over the wire |
|  | Pull the wire out of the sheath and in its place, thread the catheter through the sheath. | Remove the wire. Place the catheter through the sheath. |
| 13. Position Catheter Tip at Cavoatrial Junction | Use fluoro to check that the tip of the catheter is at the Cavoatrial Junction | Check that the tip of the catheter is at the Cavoatrial junction.  **Check catheter tip location.** |
| 14. Cut Catheter at port site | Cut the catheter so it ends at the cavoatrial junction | Cut the catheter to proper length |
| 15. Connect Port Resevoir to Catheter | Connect the port to the properly sized catheter | Connect the port body to the catheter. |
| 16. Test Flush and Insert Port into Pocket | Flush the port with saline | Flush the port with saline |
|  | Insert the port into the pocket on the chest wall | Put the port into the port pocket |
| 17. Fix Catheter at Neck and Re-check Position under fluoro | Make sure that the catheter tip ends at the cavoatrial junction, if it doesn’t then try to readjust | Confirm catheter tip at cavoatrial junction |
| 18. Flush with Heparin | Flush Port with Heparin | Flush the port with Heparin |
| 19. Suture and Glue | Suture and Glue the port site closed | Suture and Glue the port site |
|  | Glue the venotomy site at the neck close | Glue the venotomy site |
|  | Apply sterile bandage | Apply sterile bandage |

1. Preprocedure Neck US 🡪 To identify abnormalities of Jugular Vein

2. Prep and Drape (neck and chest) 🡪 Sterile Technique

3. Port Assembly 🡪 Flush and pre-assemble port

4. Procedure Neck Ultrasound 🡪 To identify tract for puncture ( low as possible but above confluence w SC vein)

5. Local anesthesia to intended Venous Puncture Site 🡪 wheal to delineate where dermatotomy will be

6. Dermatotomy (0.5 – 1 cm, 11 blade) with tract dissection (Kelly clamp used to blunt dissect to allow for space for sheath)

7. Venous Puncture (under US) with Micropuncture Needle (with confirmation via blood return, 0.018 wire through needle🡪 needle exchanged for a 5 Fr introducer 🡪 inner dilator of introducer is removed and introducer is flushed with saline and syringe attached)

8. Local anesthesia to the Port Pocket Site (pocket at least 2 fingerbreaths below clavicle, identify and avoid breast tissue, place port above ribs to facilitate access by having a hard surface against which the port can be pressed when being accessed)

9. Port Site Incision (approx. 2 – 3 cm depending on port size, if not big enough, best to lengthen with an 11 blade)

10. Dissection of port site (create a tight fit to prevent future flipping)

11. Tunnel Catheter to neck incision (taking care to exit lateral to the micropuncture introducer, tunnel should be superficial to the clavicle while being deep to the dermis for maximal patient comfort)

12. Place Amplatz (0.035) Wire through introducer at neck, down to IVC (watch under fluoro, monitor for cardiac ectopy)

13. Place Peel Away Sheath and Advance Catheter

* Introducer is exchanged over a wire for a peel away sheath, which is advanced into the right atrium
* inner dilator and wire are removed in one quick movement and finger is immediately placed over the open end of the indwelling sheath to prevent air embolism
* tunneled catheter is then advanced into the sheath and positioned at the CA junction and peel away sheath is removed
* previously removed introducer inner dilator is placed under the catheter loop at the venotomy site which later allows for final positioning of catheter

14. Position Catheter Tip at Cavoatrial Junction (by pulling catheter from where it is at at port site)

15. Cut Catheter to size (maintain firm grip to prevent air from being drawn into open lumen, and to prevent loss of catheter into the venous system)

16. Connect Port to Catheter (outside the body)

17. Test Flush and Insert Port into Pocket

18. Fix Catheter at Neck and Re-check Position (check position under fluoroscopy looking specifically for tip position and areas of kinking

19. Heparin Flush (port accessed by hubner needle and flushed with heparin)

20. Suture and Glue (port incision sutured closed with absorbable suture, close deep layer with suture and superficial later with glue; close the neck incision with glue only)