Implanted Central Venous Access Ports (IVAP)

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Objectives

- Overview of identification, use, access, care, and maintenance of IVAPs.
- Review of current practice guidelines at MGH regarding IVAPs.
- Hands-on education with access/de-access.
Overview

► IVAPs are types of central venous catheters that are surgically implanted plastic or metal subcutaneous devices that permit long-term access to vascular system.
  ► The catheter attached to the chamber terminates in central vasculature (lower third of the SVC, RA, or cavo-atrial junction).

► Uses
  ► Blood sampling
  ► Administration of blood products
  ► Chemotherapy
  ► TPN
  ► Antibiotics
  ► IV fluids

► Risks/Complications
  ► Infiltration due to improper insertion of needle
  ► Occlusion issues if not accessed/flushed properly
  ► Infection
  ► Skin breakdown
  ► Catheter fracture/migration
  ► Thrombus
Types of Ports

- Power-injectable or non power-injectable
- Single or double lumen
- Chest, arm, translumbar, or transhepatic
- In most patients, the port reservoir is in the chest or upper extremity. In some patients, use of a translumbar or transhepatic port may be required. Always verify proper tip placement with radiology prior to use. If there is any question about type of port, call IR for clarification.
- Some patients have ports in the abdomen for intra-peritoneal infusions. Always clarify before use.
What is a Power Port?

- Power ports and power needles make it possible for the port to be used for power injections for radiologic studies, such as CT scans.
  - Can withstand 5ml/sec or 300psi
- Most ports placed at MGH are power-injectable ports.
  - Some ports are for specific procedures (e.g. AngioDynamics Vortex port for pheresis)—must also be identified as they have specific instructions for use. Call IR with any questions.
Identification of Type of Port

- All ports require verification of type of device and tip placement prior to first use
- Power ports require 2 methods of identification prior to use
- Methods of identification
  - IR or surgical report/note
  - Communication with IR (ext. 6-8314) to confirm type of device placed
  - Patient port ID card or ID bracelet (supplied by VAD company)
  - Letter “CT” visible on power port seen on CXR
  - Port placement records from facility that device was placed at
Bard PowerPort

- Available in SL and DL
- Newer Bard ports have less prominent ‘nubs’, as they can cause skin erosion. Some have none at all.
- SL is triangular in shape
- Imaging of port can detect flipped port; should see “CT”
Xcela Power Injectable Port

- CT lettering confirms port is power/Not flipped
- Power injectable
- Available in SL and DL
- Does not have palpable ‘nubs’
Medcomp Power Ports

- Dignity 6F mid size power port
- Profuse 8F large power port
Access

- Prior to initial use, confirm tip placement (IR note, CXR) and document on flowsheet in LDA
- Confirm power vs. non-power
- Verify provider order for access and flush
- A power port can be accessed with a non-power needle. If you anticipate pt will need scan, confirm and access with power needle to avoid multiple sticks.
- Do not access port and contact provider if erythema, edema, pain, hematoma noted over site
- Needle change q 7 days
- Access and flush every 1-2 months if not in use
What needle do I use?

- Depending on the type of port—a Gripper Plus non-coring needle for adults (for non-power) or PowerLoc (for power) is used.

- A 22G or 20G ¾ length needle is sufficient for most ports that can be palpated at the skin’s surface.

- Essential to choose right needle size—too long and needle can fracture on back of port; too short and solution can infiltrate into tissue.

- All needles available from materials management (see Ellucid policy)
Access

- Gripper Plus or PowerLoc needle
- Needleless connector
- Sterile saline syringes
- Central line dressing kit
- Biopatch-3/4 inch (smallest) - need Biopatch for any port accessed >24 hours
- Sterile field
- Extra mask for patient
Troubleshooting*

- No blood return
  - 1st- change needle; may not be right size
  - Confirm tip placement with CXR
  - TPA
- Positioning- supine or Trendelenburg best
- Consult IR if port continues to not have blood return
- Concern for infection
  - Erythema/edema/pain
  - Consult IR/ID for recommendations
  - Ethanol locks to ports require approval from IR re: ethanol can compromise integrity of the port

*Refer to “Guidelines for Troubleshooting Central Venous Lines” in Ellucid
Care and Maintenance

- **Dressing**
  - Established deaccessed port does not need to be dressed
  - Accessed ports
    - Dressing where site can be visualized - q 7 days or when soiled/non-occlusive per central line policy
    - Occlusive dressing where site cannot be visualized - q 48 hours or when soiled
  - Advanced Tegaderm (in central line dressing kit)
  - Secure Needle
  - Allow for visualization of port site
  - ¾ inch biopatch for port that will remain accessed >24 hrs

- **Flushes**
  - When the port is in use - flush with 10-20ml NS following infusion/blood sampling
  - When the port is not in use (i.e. after de-accessing or q 4-8 week maintenance flush)-flush with 10ml saline followed by 100units/mL heparin 5ml/lumen using push/pause technique (see Ellucid for pediatric volumes)
  - Provider order and document on MAR in Epic
### Blood Specimen Collection Status

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<thead>
<tr>
<th>Property</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Blood Specimen Collection</td>
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<tr>
<td>Dominant Hand</td>
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<tr>
<td>Which is your dominant hand?</td>
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</table>

### Double Port Implanted Venous Access (Port A Cath) Right Chest Powerport

<table>
<thead>
<tr>
<th>Property</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Medical Access Action</td>
<td>Accessed</td>
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<td>Medical Access by</td>
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<tr>
<td>Medical Needle Change Due</td>
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<tr>
<td>Medical Needle Type</td>
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<td>Medical Needle Size (gauge)</td>
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<tr>
<td>Medical Needle Length</td>
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<tr>
<td>Lateral Access Action</td>
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<td>Lateral Access by</td>
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<tr>
<td>Lateral Needle Type</td>
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<tr>
<td>Lateral Needle Size (gauge)</td>
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<td>Lateral Needle Length</td>
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<td>Dressing Type</td>
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<tr>
<td>Time</td>
<td>Drug</td>
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<tr>
<td>-------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>0600</td>
<td>heparin (PF) 100 units/mL flush 6 mL</td>
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<tr>
<td>0800</td>
<td>sodium chloride (NS) 0.9 % syringe flush 3 mL</td>
</tr>
</tbody>
</table>

Ordered Admin Amount:
- heparin (PF) 100 units/mL: 5 mL
- sodium chloride (NS) 0.9 %: 3 mL
Resources

- Guidelines for the Prevention of Intravascular Catheter Related Infections

- Identification and Access of Implantable Central Venous Access Devices, MGH Nursing Policy

- Excellence Every Day Central Lines
  - http://www.mghpcs.org/eed_portal/EED_centrallines.asp