

Nursing Management of Venous Access Devices: *Implanted Central Venous Access Devices (Ports)*

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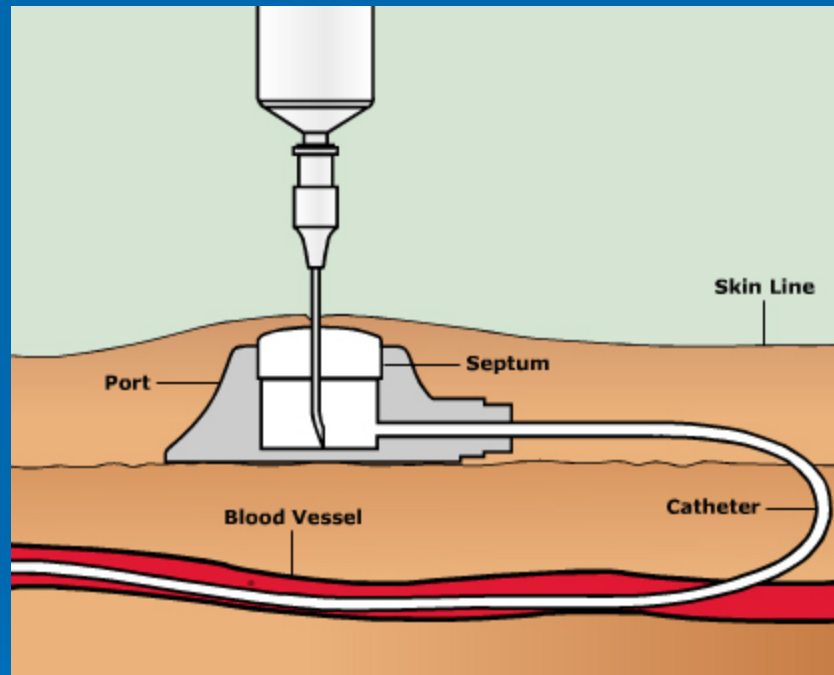
Implanted VADs: Portacath/Passport

- Implanted chamber placed in the subcutaneous tissue usually on the chest wall, but may be in other areas such as the arm.
- Catheter attached to chamber terminates in central vasculature.
 - Ports placed over the lower rib cage or abdomen may be for intra-peritoneal use – verify prior to use
- Available in low, moderate and high profile
- Types:
 - Single
 - Double
 - Passport
 - Powerport (SL and DL)



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Cross Section of Implanted Port



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Port-a-caths/Passports

➤ **Benefits:**

- Long term access – can be years
- Aesthetics/patient body image
- Central line for blood drawing and medication administration
- May administer continuous infusion IV vesicants
- Ports placed for patients receiving chemotherapy are NOT generally restricted to chemotherapy infusions only
- Lowest incidence of catheter- related bloodborne infections (CDC, 2002)

➤ **Risks/Complications**

- Infiltration due to improper insertion or dislodgement of needle
- Occlusion issues if not accessed or flushed properly
- Skin breakdown
- Infection
- Thrombus formation
- Catheter fracture or migration

Know What You Are Accessing!

- Most single lumen ports being placed currently at MGH are power injectable ports made by Bard (PowerPort®) or Navilyst (Xcela®).
 - MGH is also placing Bard double lumen PowerPorts®.
- Many PowerPorts® feel like the smaller double lumen implanted ports when palpated.
- Some ports are dedicated for specific procedures (example: Angio Dynamics Vortex port used exclusively for photopheresis; accessed by Blood Transfusion staff only).
- Always verify the type of port, especially non-power versus power prior to use.

Power Ports

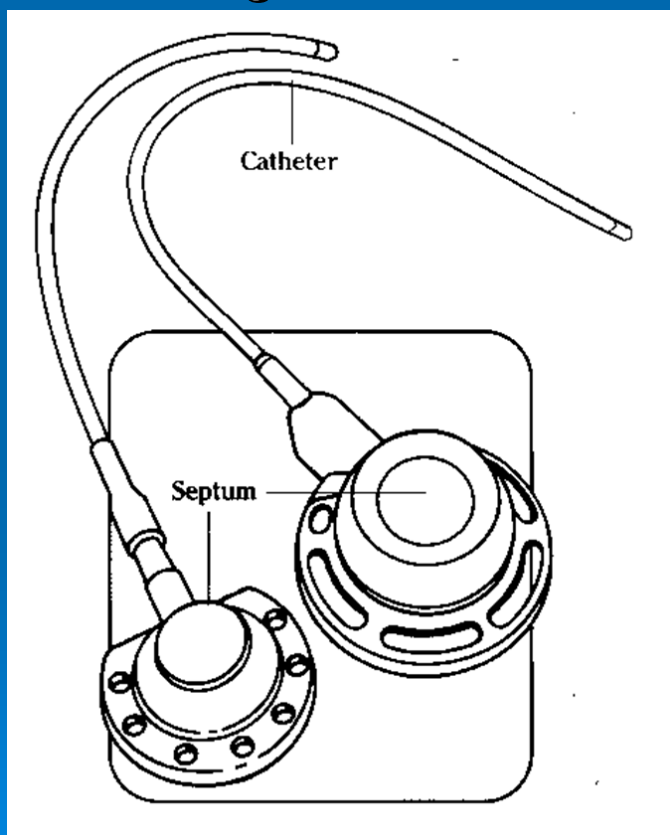
- Recent developments in implanted ports and non-coring needles have made it possible to use some ports for “power injections “ associated with radiological studies such as CT scans .
- These devices are designed to withstand 5ml/sec power injections at 300 psi.
- Use of power-injectable ports for power injection requires use of a needle designed to withstand higher PSI, such as a PowerLoc[®] needle.

How Do I Know It's a Power Port?

- Minimum of two identifiers:
 - Interventional Radiology reports
 - Patient should be carrying identification material, such as an ID card or ID bracelet
 - Power Ports have the letter "CT" visible on them when viewed radiographically; contact IR for any uncertainty
- If the port was placed at outside institution:
 - contact facility that placed device and ask to have information faxed
 - Recommend a chest x-ray to verify tip placement

Implanted Ports

Single Lumen



Double Lumen



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Bard PowerPort®

➤ Features:

- Triangular shape (SL)
- Available in single and double lumen
- Three nubs, per septum, which are palpable
- **If accessed with a Power-Loc needle**, designed to withstand increased PSI of power injectors for instillation of CT scan dye
- Imaging of port can detect flipped port



Xcela[®] Power Injectable Port

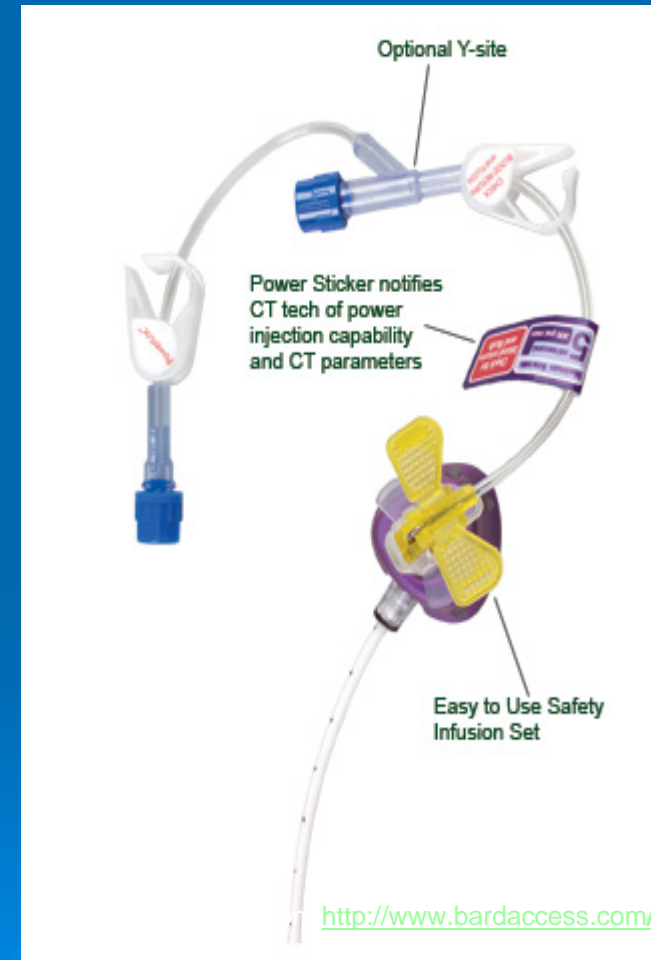
➤ Features:

- Power injectable up to 5mL/sec at 300 psi when accessed with a Power Port Needle
- Radiopaque "CT" lettering confirms if port is power injectable or flipped



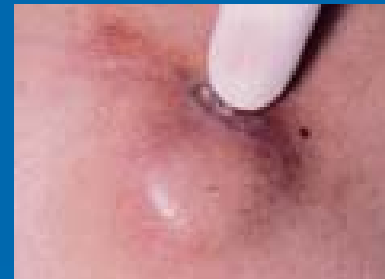
Power Injectable Ports

- Accessing: what needle do you use?
 - If you suspect pt will require scans during admission, suggest using PowerLoc[®] needle to avoid need for re-accessing.
 - May use the non-power needles, such as the Gripper,[®] to access power injectable ports if the port is not being used for power injection.
- If accessing with a PowerLoc[®] needle you MUST verify that the port is a power injectable port using minimum of two identifiers.
- Once patency is established and verification of power injectable port has occurred, the RN MUST place purple flag on PowerLoc[®] needle confirming RN verification of power injectable port or radiology will not use for high-psi injection.



Accessing Ports

- Prior to initial use, verify provider order and line placement; catheter tip should ideally be at cavo-atrial junction
- Assess exit site and ipsilateral chest carefully. Notify physician and do NOT access port if any of the following are present over the port site:
 - Redness
 - Tenderness
 - Warmth
 - Swelling
- To access, use:
 - non-coring (huber) needle
 - shortest needle possible
 - Sterile pre-filled saline syringes
 - reaccess with new non-coring needle every seven days
- Document the gauge and length of needle used.



Ports-Miscellaneous

- **Maximum flow rates for Bard ports with:**
 - 19g non-coring needle - 1680ml /hour
 - 20g non-coring needle - 960ml /hour
 - 22g non-coring needle - 312ml /hour

Implanted Ports: Flushing

➤ **Adults/Adolescents:**

- 10-20ml saline per lumen, then
- 5ml (100 units/ml) heparin = 500 units
- Maintenance flush every 4-6 weeks when port is not accessed (monthly is recommended)

➤ **Toddlers/Infants:**

- 3-5ml (10 units/ml) heparin after use (30-50 units)
- 3-5ml (100 units/ml) heparin for monthly maintenance flush when port is not accessed (300-500 units)