

Vascular Access Port Terminology & Management

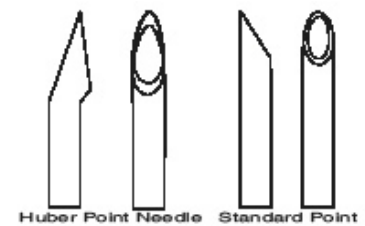
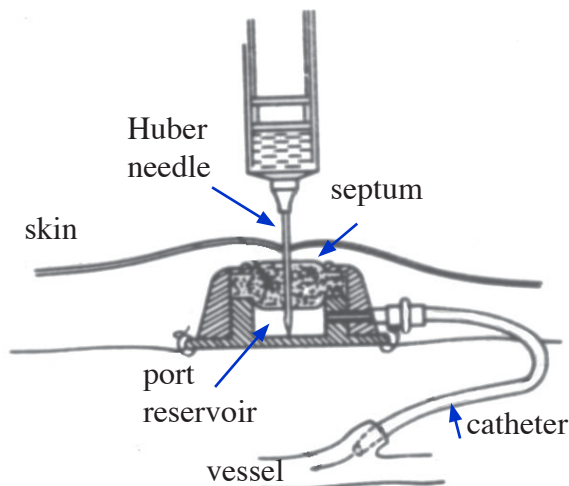


A Vascular Access Port is a totally implantable access system consisting of a compact injection reservoir, selfsealing septum and attached catheter. It is designed for repeated entry to the vascular system or body cavity for drug delivery or withdrawal of venous blood samples.

The port is accessed percutaneously with a Huber point needle.

A HUBER POINT (non-coring) needle **MUST** be used to access the port. The deflected point of this needle prevents the integrity of the port septum from being damaged. A **NEW STERILE NEEDLE** must be used for each access to avoid the risk of contamination and infection.

Pathway through the Vascular Access Port.



Once the port is accessed the fluid pathway is through the needle and skin into the port reservoir. From here the infusate enters the catheter and vasculature. During blood sampling the flow is reversed. Due to the 'closed' nature of the system, an infection, should it occur, comes from the accessing procedure - the organisms on the animals or brought in by technician.

AN ASEPTIC ACCESSING PROCEDURE IS ESSENTIAL AND THE KEY TO SUCCESS

BASIC PORT ACCESSING PRINCIPLES

1. **USE ONLY** a Huber point needle to access the port.
2. **DO NOT** reuse needles. Tip deformation may tear or damage the septum.
3. **DO NOT** use a syringe smaller than 5ml. Smaller syringes generate to great a pressure.
4. After withdrawing blood or infusing a compound, it is essential to flush the port with saline using positive pressure before instilling the lock solution.
Standing blood in the port and/or catheter can result in catheter occlusion.
5. After flushing, stabilize the port with your finger and thumb and remove the needle.
MAINTAIN positive pressure on the syringe to avoid the reflux of blood into the catheter tip. (See accessing guide for more details.)
6. Resistance encountered during infusion, may be the result of an occluded catheter. Over pressurization of an occluded catheter may occur when using syringe smaller than 5ml. Overpressurization may cause rupture of the catheter or port catheter connection. **If you determine the catheter or port is occluded, consider using an anti-thrombolytic agent to clear the occlusion.**
7. Occlusions and the subsequent inability to withdraw and/or flush the system can be the result of either a mechanical or chemical problem. The **ability to infuse but not withdraw** is known as a **Partial Withdrawal Occlusion (PWO)** while the **inability to infuse and withdraw** is known as a **Complete Catheter Occlusion**. (see the troubleshooting chart on the reverse).

Trouble Shooting the Vascular Access Port Provided as an educational resource by UNO and Access Technologies.

Complication	Symptoms	Possible Cause(s)	Solutions
Partial Withdrawal Occlusion (PWO) <i>often referred to as: Fibrin Flap / Sleeve Formation</i>	Can Infuse Cannot withdraw	1. Fibrin flap at catheter tip	1a. Pulsatile flushing using a two needle technique may dislodge fibrin flap*
		2. Catheter tip lying against vessel wall	1b. Instil anti-trombolytic into port and catheter and allow to dwell to dissolve fibrin flap
		3. Kink in catheter-mechanical problem confirmed on X-ray	2. Move animals neck to move catheter off the vessel wall
		4. Huber needle has not completely passed through port septum	3. After X-ray, determine if surgical intervention in need to “unkink” or replace the catheter.
Complete Catheter Occlusion	Can Infuse Cannot withdraw	1. Mechanical - kinking	4. Insert Huber Needle into the port and advance until you feel it hit the titanium base of the port
		2. Thrombus formation	1. After X-ray determine if surgical intervention is needed to replace or reposition catheter
		3. Drug Precipitates	2. Instil anti-trombolytic into port and catheter and allow to dwell to dissolve occlusion
Infection	Swelling, redness or tenderness around port area	? - Variety of causes	Call UNO - try using our Taurolidine Citrate Lock Solution (TCS) which is an antimicrobial and is known to prevent infections in human hemodialysis catheters.
Note: If you think the catheter is occluded, DO NOT overpressurize the vascular access port by smaller than a 5ml syringe			
* Place 2 needles attached to syringes into port septum. Fill with saline and push in with one and pull out with the other.			

