

VASCULAR ACCESS CATHETER *TipS*

SHARING INFORMATION TO IMPROVE LONG-TERM VASCULAR ACCESS

NEWS YOU CAN USE - WHICH PORT SHOULD I USE !!!

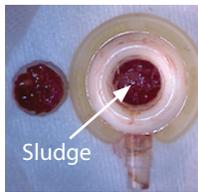
...similar to catheter choice, vascular access port choice model depends in large part on the species it will be placed in, the study design and implantation site. Answering the question "Which port (VAP) stays patent the longest?" is more complicated. There is no simple answer. It is because the vascular access port is simply a biocompatible device with no moving parts that does not degrade over time that makes the answer dependent on more than just the product itself. **Patency of the port depends on the skill and experience of both the surgeon, the maintenance team and....the internal fluid pathway i.e. the reservoir design.** It was in response to data presented by Lawson¹ and Frascini² in the early 1990's suggesting a strong correlation between the presence of sludge in the port reservoir and the incidence of occlusions and infections, that led our parent company, Norfolk Medical to focus on the internal fluid pathway and examine the reservoir more closely.

features to consider when choosing a VAP include....

- design of the port chamber/reservoir
- size and shape of the V-A-P shape to minimize necrosis
- ease of palpation and septum location
- number of needle sticks the septum will accept
- the dead space volume
- the septum's grip on the needle to limit dislodgement

WHY the reservoir or chamber shape is important ...FLOW DYNAMICS

it is well documented that the dead space in the port chamber retains thrombosed blood and drug residuals known as **SLUDGE** that builds up over time, like a sand castle, and may occlude the port. The three places where sludge can build-up are; in the corners where the septum joins the base, in the corners of the base and, where the catheter enters the port.



The withdrawal occlusion you see is likely the result of the needle eye being buried in sludge!! (fig 1)

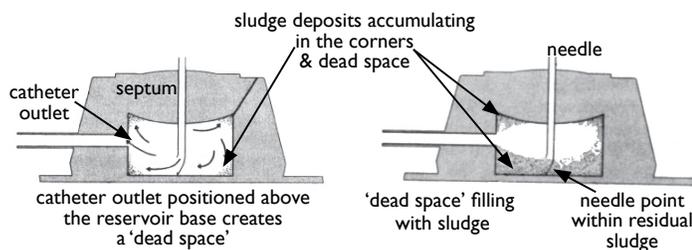


Fig. 1. Sludge build-up in a conventional port chamber

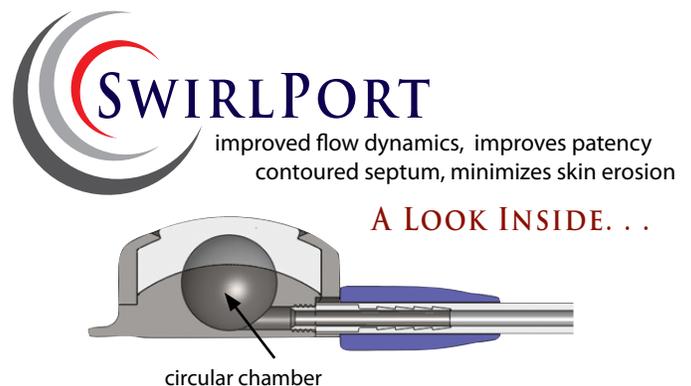
A Noteworthy Tip . . . when accessing a vascular access port, especially when withdrawing, be sure the needle tip hits the base of the port. You will hear a 'click' when the needle hits the base of the port that will confirm the needle eye/heel has cleared the septum. Maintain positive pressure as the natural tendency is to pull back on the needle when it hits the metal base.

If the deflected tip/needle heel does not totally clear the septum, withdrawal will be difficult due to the occlusion caused by the 'partially occluded needle eye'.

This leads to another question - **What is the best/optimal needle length?** More about needles in the next issue.

HOW we changed the reservoir to improve patency ...FLOW DYNAMICS

first we introduced the ClearPort series with rounded port reservoir and then, we went a step further, introducing the SwirlPort. This port has a spherical chamber, a smaller dead space volume and an enlarged and radiused septum. With a spherical flow pattern, no corners for sludge to accumulate the SwirlPort ensures complete flushing and has the lowest chamber flushing volume of any port on the market.



A Noteworthy Tip . . . when choosing a catheter, choose the smallest French size possible. The optimal proportion between the catheter diameter and the vessel diameter is a balancing act. Human studies have shown that larger catheter sizes produce higher rates of vein thrombosis. (Bedford 1977, Downs 1974). If the catheter is too large for the vessel, it may encourage stasis (one of the components of Virchow's Triad) and be a set up for "trouble down the pipe-line".

This leads to another question - **How large a catheter is too large?** More about catheter size in the next issue.



The TipS is a forum for sharing - your comments are important. Please consider sharing them.