

PRE- EXISTING VASCULAR ACCESS DEVICE (PVAD) Access Review For El Dorado County Paramedics



PVAD Review

INDWELLING VENOUS CATHETERS:

- Hickman/Leonard



Hickman and Leonard catheters access the subclavian vein. The distal end of the catheter comes out of the chest close to the nipple. This creates a "tunnel" which decreases the risk of infection. These catheters are made of a silicone elastomere. They come in double-lumen and triple-lumen varieties and can stay in place for weeks to months; some patients have had the same catheter for years.

PVAD Review

INDWELLING VENOUS CATHETERS:

- Broviac

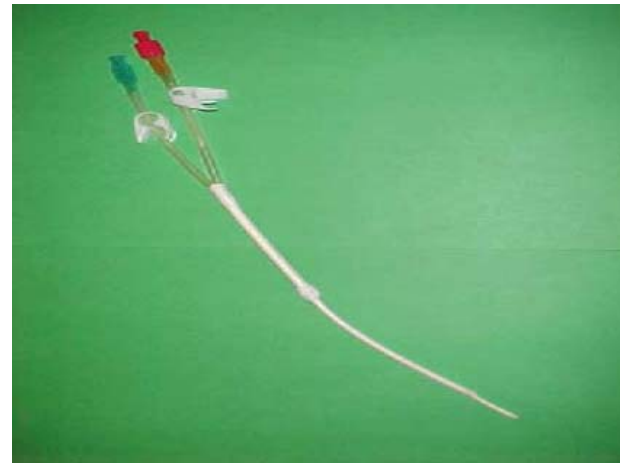


The Broviac catheter is similar to the Hickman catheter, but is of smaller size. This catheter is mostly used for pediatric patients.

PVAD Review

INDWELLING VENOUS CATHETERS:

- Pheresis (VasCath)

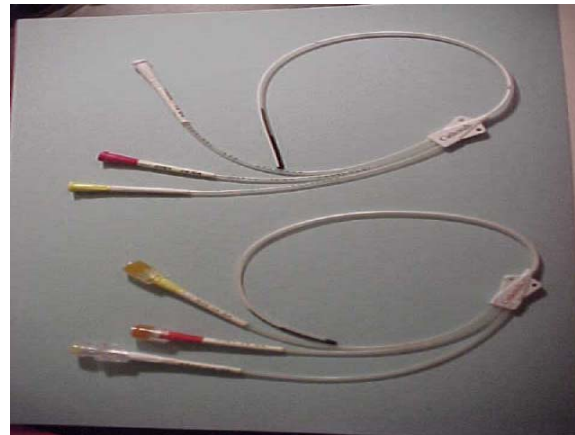


Pheresis catheters are larger and sturdier than Hickman catheters, they can be used for hemodialysis, and are often called "dialysis catheters".

PVAD Review

INDWELLING VENOUS CATHETERS:

- Groshong



The Groshong catheter is also very similar to the Hickman catheter, but has a valve at the tip of the catheter which makes it unnecessary to leave a high concentration of heparin in the catheter.

PVAD Review

INDWELLING VENOUS CATHETERS:

-All in-dwelling venous catheters share some common characteristics:

- They have a catheter that is placed in the superior vena cava to provide central circulation access.
- They can be accessed by using an external port.
- Aseptic technique is required when utilizing them. If the patient is in extremis (and no other IV/IO access is available) you can access indwelling ports and lines to give meds/fluids just like a peripheral IV line.

PVAD Review

INDWELLING VENOUS CATHETERS:

These catheters have an external hub or hubs connected to a surgically implanted or placed catheter. The hubs usually exit the skin in the anterior thoracic region or upper arm. Most utilize a special material to prevent infection where the catheter enters the skin. All of them end up in the central circulation, usually the superior vena cava.



PVAD Review

- **ACCESSING INDWELLING VENOUS CATHETERS:**

The patient and their family will likely have extensive knowledge about the line and how to properly care for it. In fact, there are some videos on “YouTube” showing proper care by family members. The lines are heparinized to prevent clotting of the end of the catheter in the blood stream.

PVAD Review

- **ACCESSING INDWELLING VENOUS CATHETERS:**

Required Equipment:

10mL syringe (empty)

10mL saline syringe

Chlorahexadine preps

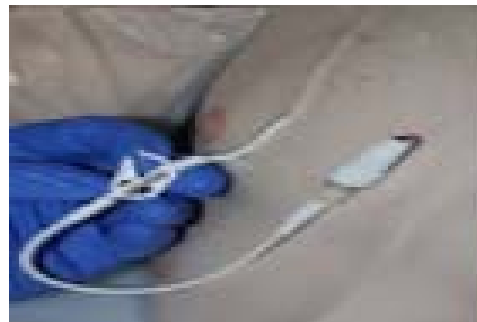
INT hub

Saline IV setup (primed and ready)

PVAD Review

- **ACCESSING INDWELLING VENOUS CATHETERS:**

Step 1: To access the line first clamp off the hub line you intend to use. It's important to clamp off the line to prevent air from being sucked in to the line and blood stream. Any of the hub lines can be used, they all go into the venous system.



PVAD Review

- **ACCESSING INDWELLING VENOUS CATHETERS:**

Step 2: Once you have the line clamped off, expose the end of the hub (it may have a cap or be taped over) clean it well with a chlorahexadine prep and connect an empty 10mL syringe to the hub.

Sterile technique is critical!



PVAD Review

- **ACCESSING INDWELLING VENOUS CATHETERS:**

Step 3: With the syringe in place you can unclamp the tubing and aspirate about 5ml of blood and heparin to confirm the line is in place, discard the syringe and contents as biohazard waste. There should be no resistance to aspiration.



PVAD Review

- **ACCESSING INDWELLING VENOUS CATHETERS:**

Step 4: If there is resistance, don't force it. It's possible that the line is pinched off internally. The patient and the family will likely be familiar with the situation and will know how to move the arm around to reduce the pinch. Talk to the patient and family, if possible. They know about this thing!



PVAD Review

- **ACCESSING INDWELLING VENOUS CATHETERS:**

Step 5: Attach a saline flush syringe to the hub and flush it gently.

Step 6: Attach a flushed IV tubing and saline bag and run it into the line at the appropriate rate. Flow the saline at a minimum of TKO rate to prevent clotting off since we don't have heparin available.

Step 7: Use the y-sites on the IV tubing to give meds as needed; make sure to clean the y-site correctly and flush with the saline IV line after each med.

PVAD Review

- **PORTA CATHS AND OTHER INTERNALLY IMPLANTED DEVICES**

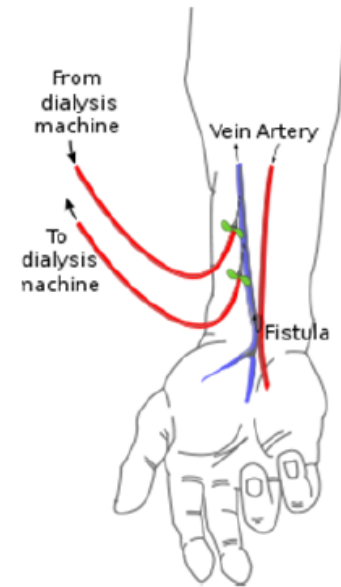


PARAMEDICS ARE NOT ALLOWED TO ACCESS THESE TYPES OF DEVICES IN EL DORADO COUNTY

PVAD Review

ACCESSING AV FISTULAS AND GRAFTS

- Arteriovenous (AV) Fistulas
- A fistula used for hemodialysis is a direct connection of an artery to a vein. Once the fistula is created it is a natural part of the body. This is the preferred type of access because once the fistula properly matures and gets bigger and stronger; it provides an access with good blood flow that can last for decades.

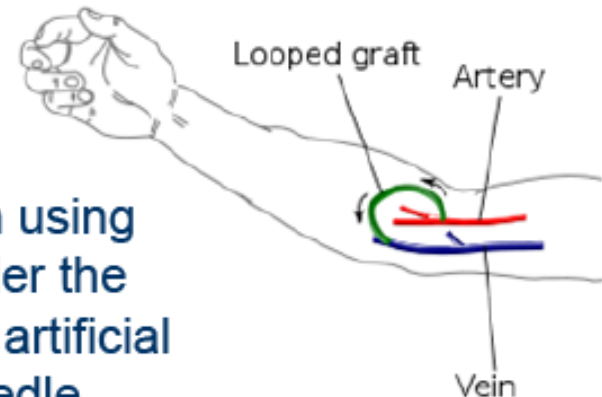


PVAD Review

- **AV FISTULAS AND GRAFTS**

Arteriovenous (AV) Grafts

If the patient has small veins that won't develop properly into a fistula, they can get a vascular access that connects an artery to a vein using a synthetic tube, or graft, implanted under the skin in your arm. The graft becomes an artificial vein that can be used repeatedly for needle placement and blood access during hemodialysis



PVAD Review

- AV FISTULAS AND GRAFTS



PVAD Review

- **ACCESSING AV FISTULAS AND GRAFTS:**

Step 1: Assess the site: Check for “thrill” or “bruit”. The vibration of blood going through the patient’s arm is called the “thrill.” You should check this prior to accessing the site. If a “thrill” is not felt there may be poor perfusion of the fistula/graft and you may want to check for a “bruit” with a stethoscope. To hear a “bruit,” place the stethoscope directly on the fistula/graft and listen for the sound of blood “whooshing” through the access.

PVAD Review

- **ACCESSING AV FISTULAS AND GRAFTS:**

Step 2: Look for a section of the fistula/graft approximately 1/4" from a previous insertion site, if possible. Avoid scarred or lumpy areas of the access.

Step 3: Cleanse the site with a chlorahexadine prep. Sterile technique is critical!



PVAD Review

- **ACCESSING AV FISTULAS AND GRAFTS:**

Step 4: Insert the IV catheter (18 gauge or larger preferred) at an angle to prevent perforating the other side of the access.

Step 5: Secure the IV.

Step 6: A pressure bag may be needed if the patient has a blood pressure due to arterial pressures.

Step 7: If the IV catheter is dislodged from the fistula or graft, it may bleed like an artery. Hold pressure dressing at the site.

PVAD Review

- Remember:
 - Ask the patient or the patient's family for assistance when accessing a PVAD, they probably have more experience with these devices than you do.
 - This is only for life saving interventions when you are unable to obtain IV/IO access through other sites