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28. IMPLANTED VASCULAR ACCESS PORTS

Standard

28.1 Placement and removal of an implanted vascular access port are considered surgical procedures and are to be performed by a licensed independent practitioner (LIP) or advanced practice registered nurse (APRN) with validated competency operating within the state's rules and regulations for professional practice and according to organizational policies, procedures, and/or practice guidelines.

28.2 Implanted vascular access ports are accessed using noncoring safety needles.

28.3 Only implanted vascular access ports and noncoring needles designed for power injection are used with power-injection equipment for radiologic imaging in accordance with manufacturers' directions for use.

28.4 A sterile dressing is maintained over the access site if the implanted vascular access port remains accessed.

Practice Criteria

A. Confirm that the implanted port has a labeled indication for power injection before using it for this purpose.^{1,2} (V)

1. Use at least 2 identification methods that may include presence of identification cards, wristbands, or key chains provided by the manufacturer; review operative procedure documentation; and palpate the port.
2. Do not use palpation of the port as the only identification method as not all power-injection-capable implanted vascular access ports have unique characteristics identifiable by palpation.
3. During and after power injection be aware of the potential for catheter rupture, which can lead to extravasation, catheter fragment emboli, and the need for port removal and replacement. Suspect catheter rupture if the patient shows signs of localized swelling or erythema or reports pain (refer to Standard 51, *Catheter Damage [Embolism, Repair, Exchange]*).

B. Assess patient needs and preferences related to pain management during port access (refer to Standard 32, *Local Anesthesia for Vascular Access Device [VAD] Placement and Access*).

C. Adhere to aseptic technique during implanted port access, including use of sterile gloves and mask.^{3,4} (V, Committee Consensus)

1. Perform hand hygiene before and after examining the site to assess for swelling, erythema, drainage, venous patterns, or discomfort.^{5,6} (V)
2. Perform skin antisepsis prior to port access.
 - a. Use the preferred skin antiseptic agent of >0.5% chlorhexidine in alcohol solution.⁴⁻⁷ (I)
 - b. If there is a contraindication to alcoholic chlorhexidine, tincture of iodine, an iodophor (povidone-iodine), or 70% alcohol may also be used.⁵ (I)
 - c. Allow skin antiseptic agent to fully dry prior to port access.⁵ (V)
- D. Access the implanted vascular access port with the smallest-gauge noncoring needle to accommodate the prescribed therapy.
 1. To reduce the risk of needle dislodgment during access, use a noncoring needle of a length that allows the needle to sit flush to the skin and securely within the port.⁷ (V)
 2. Consider orienting the bevel of an implanted port access needle in the opposite direction from the outflow channel where the catheter is attached to the port body. In vitro testing demonstrates a greater amount of protein is removed when flushing with this bevel orientation.⁸ (IV)
 3. There is insufficient evidence to recommend an optimal time for replacement of the noncoring needle when the implanted vascular access port is used for continuous infusions.⁵ (V)
- E. Assess vascular access device (VAD) functionality by using a 10-mL syringe or a syringe specifically designed to generate lower injection pressure (ie, 10-mL-diameter syringe barrel), taking note of any resistance (refer to Standard 40, *Flushing and Locking*).
- F. Flush and lock the implanted vascular access port with preservative-free 0.9% sodium chloride (USP) or heparin lock solution (refer to Standard 40, *Flushing and Locking*).
 1. Flush accessed but noninfusing implanted vascular access ports daily.⁹ (IV)
 2. There is insufficient evidence to recommend the optimal frequency for flushing an implanted vascular access port that is not accessed for infusion; refer to manufacturers' directions for use and organizational policy.¹⁰⁻¹² (V)
 3. Anticipate use of antimicrobial locking solutions for patients who have a history of catheter-related bloodstream infections (CR-BSIs) (refer to Standard 40, *Flushing and Locking*).
- G. Use a transparent semipermeable membrane (TSM) dressing or gauze dressing that covers the noncoring needle and access site when the port is accessed. Change the TSM dressing every 5-7 days and gauze dressings every 2 days. When gauze is used under the TSM dressing to support the wings of an access needle and does not obscure the access site, change the TSM dressing every 5-7 days.^{5-8,13-16} (IV)

- H. Provide appropriate patient/caregiver education including placement procedure; type of port placed (eg, power injectable, number of lumens); importance of carrying port identification card (eg, in wallet); routine care, including frequency of flushing; expectations of aseptic technique during access; use of only noncoring needles (including appropriate type for power injection); and identification of potential complications and interventions.^{4,16} (V)
- I. Provide appropriate patient/caregiver education for patients who are receiving infusions at home via an accessed port, including checking the dressing daily; how to dress and undress to avoid pulling at the noncoring needle; protecting the site during bathing; making sure women's bra straps do not rub over the accessed area; immediately reporting any signs or symptoms of pain, burning, stinging, or soreness at the site; and recognizing the importance of stopping the infusion pump and immediately reporting any wetness, leaking, or swelling noted at the site (see Standard 8, *Patient Education*).¹⁷ (V)

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29. HEMODIALYSIS VASCULAR ACCESS DEVICES (VADs)

Standard

29.1 The selection of the most appropriate type of vascular access device (VAD) for hemodialysis occurs in collaboration with the patient/caregiver and the inter-professional team based on the projected treatment plan.

29.2 Placement and removal of a tunneled or implanted hemodialysis VAD, creation of an arteriovenous (AV) fistula, and insertion of an AV graft are considered surgical procedures and will be performed by a licensed independent practitioner (LIP) with validated competency operating within the state's rules and regulations for professional practice.

29.3 Removal of a temporary nontunneled or nonimplanted hemodialysis VAD is performed either by or upon the order of an LIP in accordance with state licensure rules and regulation and organizational policies.

29.4 Hemodynamic monitoring and venipuncture are not performed on the extremity containing an AV fistula or graft.

Practice Criteria

- A. Determine the access method in advance of beginning dialysis. The general order for vascular access preference is fistula, AV graft, and long-term VAD.