CAREPATHrx™
Specialty Pharmacy & Infusion Solutions

VASCULAR ACCESS DEVICE (VAD)
DRESSING AND NEEDLELESS CONNECTOR CHANGE

Section: Nursing
Compliance: ACHC Infusion Pharmacy
INS Standards: 8, 10, 11, 12, 13, 16, 17, 18, 21, 36, 41, 42
ACHC STANDARDS: DRX2-10D, DRX5-1D, DRX5-5E, DRX7-8I, DRX7-21A
TJC STANDARDS: IC.02.01.01, MM.05.01.07, MM.06.01.01, NPSG.01.01.01, PC.02.01.01, PC.02.01.03, PC.02.02.05, PC.02.03.01
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I. POLICY SCOPE

VAD site care, including skin antisepsis and sterile dressing change, is performed weekly and immediately if the dressing integrity becomes compromised (border edges lifted, integrity of transparent portion of the dressing is not intact, or if there is presence of blood, moisture, or drainage). Despite the various designs and applications of central venous access devices, certain aspects of dressing changes apply to all device types. Sterility and integrity of the device must be always maintained to reduce the risk of vascular catheter-associated infection.

Needless connectors (with or without extension sets) are used to connect syringes and administration sets to a VAD to eliminate the use of needles and reduce manipulation of the VAD. Needleless connectors are recognized sources of bacterial contamination, necessitating best practice be followed.

II. NURSING OVERVIEW

VAD transparent semipermeable membrane (TSM) dressing, securement device (if applicable) and needless connector change should be performed every 7 days (routinely) and immediately if any part of the dressing has been compromised or altered skin integrity under the dressing.

Clinician and caregiver to routinely assess VAD site integrity of the skin, dressing and securement device, as well as signs of complications and lumen patency. Clinician assessment occurs at each visit and instruct caregivers to assess site and patency daily or with each infusion. Caregivers are to be instructed to contact their home health care provider immediately when signs of complications are noted, including altered dressing integrity.

Sterile gauze dressing should be changed every 2 days, or sooner if dressing integrity is disrupted (damp, loose, soiled, etc.). Note: gauze underneath the TSM dressing is considered a gauze dressing, unless the gauze does not obscure the insertion site. If the gauze does not obscure the insertion site and is not saturated with drainage, the dressing change is to be performed every 7 days and as needed.

See Nursing Policy on Implanted Vascular Access Prot Guidelines for non-coring needle and dressing change procedures. For injection cap change for accessed implanted port, see below.

The needleless connector should be changed if the needleless connector has been removed for any reason, presence of residual blood in the connector, prior to drawing blood cultures, with dressing change and as clinical indicated (i.e., contamination, leaking, disfunction). Follow needleless connector manufacturer guidelines for product use.

Needleless connectors and dressings are to be changed by a trained nurse, with ongoing documented competence. Patients and/or caregivers may perform line care procedures with the below criteria met:

1. Physician ‘s order for patient/caregiver to perform line care.
2. Patient/caregiver is a medical professional or has received proper training by an RN and has demonstrated compliance and ability to assume responsibility for CVAD care in the absence of a clinician.

For tunneled, cuffed CVAD a dressing may not be required when the subcutaneous tunnel is healed.

Dressing and needleless connector changes on VADs are to be performed using Aseptic Non-Touch Technique (ANTT), for more information, refer to Nursing policy on Aseptic Non-Touch Technique.

A securement (integrated or combined) is to be utilized for all VADs to protect the site and provide a microbial barrier.

When a subcutaneous engineered stabilization device is used for securement, it is not removed with every dressing change. Refer to manufacturer instruction to remove at the time of catheter removal.

Never use scissors, hemostats, pins or other sharp object near the VAD. However excess hair is to be removed to facilitate application of the VAD dressing with great care, do not shave the site as this may increase infection risk.

Adhesive-backed tape, dressing and securement devices can cause skin tearing if removed improperly and in older adults. Skin sensitivities can also develop to adhesives, resulting in redness, itching, and rash, which can cause catheter dislodgment. Consider an alternative dressing if catheter associated skin injury is assessed with use of transparent or gauze dressing or securement.

Apply protective barrier solution to the skin prior to dressing and securement to reduce the risk of catheter-associated skin injury and site protection.

A single tubular sleeve that can be easily removed may provide additional site protection but is not indicated as the primary securement method. A rolled bandage (with or without elastic) is not appropriate for site securement or site protection. Skin injury or skin disorders may contradict the use of medical adhesives, making tubular gauze mesh the only appropriate dressing material.

Measure circumference of the extremity, for Peripherally Inserted Central Catheters (PICC) and Midline Catheters, and compare to the baseline measurement when clinically indicated by clinical symptoms associated with catheter-associated deep vein thrombosis (CA-DVT) (i.e., edema, redness, pain, sensation change, temperature changes). Extremity circumferences is to be measured when the line is placed, at the start of care, and when symptoms associated with CA-DVT are assessed. When measuring the circumference, the location of the measurement is to be documented along with the circumference in centimeters (cm).

Every effort is to be made to obtain the line insertion report, to assess the arm circumference, external length of the catheter, and the total length of the catheter at the time of insertion.

Never advance or readvance a dislodge VAD. A migrated VAD should be secured at the current location and assessed for proper placement. If line is assessed as out of position, a new site or line exchange may be indicated.

For showering or bathing, the VAD site is to be protected by covering the entire dressing site (including needleless injection caps and extension sets) with clear plastic wrap or device designed for this purpose.

Avoid pressure over the site/upper extremity of PICC or Midline placement, by avoiding blood pressure measurements or tourniquet placement over the site/extremity.

III. PROCEDURES

A. Cap Change Procedure:

1. Supplies:

    a. Alcohol swabs
    b. 0.9% sodium chloride syringe (1 per each needleless connector)
    c. Needleless connector
    d. Gloves

2. Review prescriber's order or standard protocol.

3. Confirm patient identity.

4. Explain the procedure to patient/caregiver.

5. Assemble equipment on clean, disinfected, aseptic field. Confirm all equipment is not expired or defective.

6. Perform hand hygiene in accordance with Nursing policy on Hand Hygiene and don the non-sterile gloves.

7. Open needleless connector package using aseptic technique, attach syringe with 0.9% sodium chloride and prime connector.

8. Clamp catheter lumen(s).

9. Remove the existing cap without touching the hub of catheter and discard cap

10. Scrub female threads of catheter hub with alcohol for 30 seconds, being careful to only touch the catheter hub with the alcohol wipe. Allow alcohol to dry for 60 seconds.

11. Attach new primed needleless cap ensuring a secure luer lock connection.

    a. Refer to Nursing policy on Flushing and Locking Catheters for information on catheter flushing and patency.

12. Documentation: Date and time of needleless connector change.

B. VAD Dressing Change procedure:

1. Review prescriber's order or standard protocol.

2. Confirm patient identity.

3. Explain procedure to patient/caregiver.

4. Supplies:

    a. Central line dressing change kit:
        - Mask (Central and Midline Catheters only)
        - Gloves (sterile)
        - Sterile drape
        - Antiseptic cleanser
        - Skin protective barrier swab
        - TSM dressing
        - Tape measure, sterile (PICC and Midline Catheter)
        - Label
    b. Gloves (non-sterile)
    c. Securement device (if applicable)
    d. Chlorhexidine-impregnated sponge (if applicable)
    e. Acetone-free adhesive remover (if applicable)
    f. Site dressing (if applicable, for alternate dressing)

g. Preservative-free 0.9% sodium chloride prefilled syringe(s)
h. If ordered, Heparin prefilled syringe

5. Assemble equipment on clean, disinfected, aseptic field. Confirm all equipment is not expired or defective.

6. Perform hand hygiene in accordance with Nursing Policy on Hand Hygiene and don non-sterile gloves.

7. Using aseptic technique, open the dressing supplies onto a sterile field

8. Both patient and clinician to don mask. Any other individuals to leave room or don mask.

9. Assess insertion site for redness, tenderness, swelling, drainage, or catheter migration. Assess catheter for cracks, leakage, kinking or pinching, and mechanical problems. Assess patency catheter by flushing with 0.9% sodium chloride in accordance with Nursing policy on Flushing and Locking Catheters.

10. Remove existing dressing by gently grasping the dressing at the device hub and pulling perpendicular to the skin toward the insertion site.

11. Remove Chlorhexidine-impregnated sponge, if present.

12. Remove the securement device if present, according to manufacturer instructions

13. Remove gloves and perform hand hygiene.

14. Don sterile gloves.

15. Cleanse the insertion site with the chlorhexidine swab, using multi-directional/back and forth friction from the clean to the dirty areas for 30 seconds and allow to dry for at least 60 seconds or until completely dry.

    a. Use tincture of iodine, Povidone-iodine, or alcohol swabs for patients with chlorhexidine sensitivities. Appling povidone-iodine at the catheter insertion site and moving outward in concentric circles, and then allow the solution to remain on the skin until it dries completely (for at least 1½ minutes).

16. Apply skin barrier to the outside boarder

17. Apply new chlorhexidine sponge if applicable.

18. Apply new securement device if applicable.

19. Apply sterile dressing to insertion site.

20. Measure the external length of the catheter at each dressing change and when catheter malposition is suspected and compare it to the length documented at insertion. A 2cm increase in external catheter length is indicative of line migration and provider/pharmacy must be notified.

21. Measure mid-upper-arm circumference if clinically indication. Location of measurement must be noted for comparison.

    a. Compare the circumference of both extremities if unilateral edema is noted.
    b. A 3cm increase in midarm circumference, pain/edema/erythema in the extremity, shoulder, neck, or chest and engorged peripheral veins of the extremity is associated with CA-DVT.

22. Dispose of waste in an appropriate container.

23. Remove gloves and discard.

24. Perform hand hygiene.

25. Label dressing with date, time, and initials. Avoid placement over the insertion site.

C. Documentation:

1. Date and time of dressing change
2. Any abnormal site assessment findings
3. Type of dressing and securement device
4. Measurement of external length of catheter
5. Measurement of mid arm circumference and any symptoms of CA-DVT
6. Patency of catheter
7. Infection Prevention
8. Patient's response to the procedure
9. Patient education provided (written or verbal)
10. Provider and pharmacy communication, if applicable

IV. TRAINING

This policy will be posted on the Company shared drive.

V. REFERENCES

Nickel B, Gorski L, Kleidon T, et al. Infusion Therapy Standards of Practice, 9th Edition. *J Infus Nurs.* 2024;47(1S Suppl 1): S1-S285. doi:10.1097/NAN.0000000000000532

Lippincott Nursing Procedures | R2 Digital Library. (2023). Central Venous Access Catheter Care. https://www.r2library.com/resource/detail/1975178580/ch0003s0109