PD Procedures: Exit Site Care
Post-Operative PD Catheter Insertion

BCRenal
Provincial Health Services Authority

1.0 Practice Standard

Indwelling catheters are at risk for the development of infections.

The Registered Nurse and the Licensed Practical Nurse who is trained and has demonstrated competency in Peritoneal Dialysis Procedures will use the outlined procedure to promote wound healing and minimize the risk of infection of the peritoneal catheter exit site post catheter insertion.

Initial dressing will remain in place for a minimum of 7 days following catheter insertion to promote wound healing.

Dressings to be performed weekly for 2 to 4 weeks post catheter insertion using the procedure outlined.

2.0 Definitions and Abbreviations

Exit site: point at which the PD catheter exits the body which includes the most external part of the sinus tract and the surrounding skin.

External exit site: visible exit site (outside of the sinus rim) which can be seen without lifting the catheter.

Tunnel: area created by the catheter position under the skin between the exit site and the point of entry into the peritoneal cavity. Located between the internal and external cuffs.

Visible sinus: outermost part of the sinus tract (inside the sinus rim) which is visible after lifting the catheter or moving it laterally.

3.0 Equipment/Supplies

- Chlorhexidine liquid pump soap or non antibacterial pump soap
- Masks (for patient and caregiver)
- Alcohol hand sanitizer
- Dressing tray
- 2 x 2 Sterile gauze
- 4 x 4 sterile gauze
- Sterile saline
- Absorbent, adhesive wound dressing (i.e. mepore)
- Clean gloves
- Sterile gloves
- Antibacterial cream/ointment as ordered

4.0 Procedure and Rationale

	PROCEDURE	RATIONALE
1	Mask self and patient.	Aids in the prevention of spread of air borne organisms.
2	Perform hand hygiene using chlorhexidine liquid soap or non antibacterial pump soap according to program policy.	Thorough handwashing reduces the risk of transmission of organisms from touch contamination .
3	Prepare dressing tray with sterile supplies.	
4	Apply clean gloves.	
5	Remove dressing and inspect exit site (external exit and visible sinus), and tunnel for: • drainage: type and amount • erythema • pain • swelling • leakage • catheter extrusion and or migration Note: See procedure "*Exit Site Care: Assessing and Classifying the Exit Site*".	
6	Inspect midline surgical incision for healing.	
7	Inspect PD catheter for integrity and ensure the adapter/connector is tightly connected.	
8	Remove gloves and perform hand hygiene with alcohol hand sanitizer.	
9	Apply sterile gloves.	
10	Using sterile saline soaked gauze, cleanse in a circular motion moving outward from the exit site to a radius of 10 cm. Repeat as required.	Saline is a non cytotoxic solution that aids in promoting wound healing. Avoid solutions such as betadine, chlorhexidine, peroxide or alcohol which are cytotoxic and delay healing.
11	Dry exit site thoroughly with gauze using circular motion from exit site outwards.	A moist environment creates a medium for growth of micro-organisms.
12	Apply antibiotic cream/ointment if ordered sparingly around the exit site.	Mupirocin has shown to reduce staphylococcus aureus exit site infection. Gentamicin has shown to reduce staphylococcus aureus and pseudomonas exit site infections.
13	Perform midline surgical incision care using sterile saline soaked gauze. Dry thoroughly following.	
14	Wrap a 2 x 2 gauze around the exit site (optional).	Absorbs drainage and protects skin from potential irritation.

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	PROCEDURE	RATIONALE
15	Wrap a 2 x 2 around the adapter/connector (optional).	Protects skin from potential irritation.
16	Allow the catheter to assume a natural lie on the abdomen ensuring that there are no kinks in the tubing and that the connector/adapter is not lying on the exit site.	Minimizes the occurrence of catheter occlusion and trauma/irritation to the exit site.
17	Cover the exit site with dressing.	Sterile gauze or transparent semi permeable dressings will be used to cover the exit site to keep clean, help secure the catheter and prevent irritation by clothing. The type of dressing may need to be individualized due to skin sensitivity, patient activity, personal hygiene, catheter stabilization.
18	Firmly secure the PD catheter and transfer set to the skin with tape or immobilizing device	Immobilization of the catheter at all times is critical to promote healing and prevent further trauma caused by mechanical action during handling and normal body movements.

5.0 Patient Teaching Considerations

	PATIENT TEACHING	RATIONALE
1	Instruct patient to report any serious complications or evidence of excessive serous or sanguineous drainage on exit site dressing, leak, trauma or signs or infection to PD program.	Assessment of exit sites based on appearance and specific characteristics aids in the early diagnosis, prevention and effective treatment of exit site infections. Early identification of complications permits implementation of appropriate interventions.
2	Patients will be instructed to avoid tub baths, hot tubs, swimming and or any activity where the exit site is submerged.	Submerging of the exit site in water is not permitted on peritoneal dialysis to prevent infection. (patient to discuss swimming options with the PD program once the exit site is well healed).
3	Patients will be instructed to avoid showering until the exit site is assessed as healed by the PD training program.	Showering is not permitted until the exit site is assessed as healed by the PD program. Healing of the exit site does not occur for 2 to 3 weeks post implantation.
4	Instruct patients to avoid any heavy lifting, coughing, straining or constipation.	May cause complications such as leak, trauma and bleeding. Constipation can cause the peritoneal catheter tip to migrate out of the lower pelvis. Discuss with patients the need for stool softeners to maintain daily bowel movements.
5	Ensure patient is aware of all follow up PD appointments.	
6	Ensure patient has been provided with all post op program information for peritoneal dialysis.	

6.0 Documentation Considerations

Documentation on patient record to include:

- Assessment of the exit site mid line surgical incision appearance with each dressing change. Document any significant findings.
- Refer to protocol "*Exit Site Classification"* for further reference.

Report and document any complications including:

- excessive serous, purulent or sanguineous drainage
- evidence of leak
- trauma
- signs of infection
- pain

7.0 Special Considerations: Interventional Guidelines

(does not replace individualized care and clinical expertise)

- For the first 3 weeks after catheter insertion, sterile dressing changes should be limited (weekly) to allow new tissue to heal without being disturbed. If the dressing is wet or loose it must be changed more frequently.
- Research indicates that wound cleansing reduces infection rates; however potential advantages and disadvantages of cleansing wounds exists. Exudate itself may very well contain growth elements and chemokines which contribute to wound healing.
- Studies show that bacterial colonization of the wound does not necessarily indicate infection and that there is no need to remove the bacteria in the absence of clinical signs of infection.
- It has also been suggested that wound cleansing helps to optimize the healing environment and decrease the potential for infection by loosening and washing away cellular debris such as bacteria, exudate, purulent material and residual topical agents from previous dressings.
- The characteristics of an ideal wound cleansing solution are:
    - non-toxic to human tissues;
    - remains effective in the presence of organic material;
    - reduces the number of micro-organisms;
    - does not cause sensitivity reactions; is widely available; is cost-effective; and is
    - stable with a long shelf life.
- Normal saline is felt to meet the listed criteria listed. Normal saline (0.9%) is the favored wound cleansing solution because it is an isotonic solution and does not interfere with the normal healing process, damage tissue, cause sensitization or allergies or alter the normal bacterial flora of the skin (which would possibly allow the growth of more virulent organisms).
- Cytotoxic solutions such as betadine, chlorhexidine, peroxide and alcohol must be avoided as they may inhibit new cell and tissue growth and healing.
- The catheter should be immobilised as much as possible with tape or other type of immobilizer to protect the catheter and exit site and prevent trauma. Research indicates that ES infections are frequently a result of trauma to the exit site. To protect the integrity of the skin at the exit site and cuffs the catheter should always be gently handled especially when cleansing. Secure the catheter to prevent pulling but not so tightly that there is tension on the exit site itself. Other risk factors that may alter the appearance of the exit site and delay healing

are removing of scabs, aggressive exit site cleansing, cytotoxic cleansers, allergies to tape and/or cleansing solutions and irritation resulting from tight clothing or belts.

- Chemical trauma to the exit site can occur as a result of solutions used. Consideration of skin allergies/sensitivities to solutions such as chlorhexidine must be considered when performing exit site assessments and incorporating solutions into exit site practices.
- Scabs and crusts should not forcibly be removed as they act as a natural barrier. Aggressive exit site cleansing should be avoided to minimize trauma to the exit site. Softening of the crust or scab with saline soaks may assist with easier detachment.

8.0 References

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