Dressing Change: Post Op Cardiac Surgery

Site Applicability

SPH ONLY: restricted to patients on 5A, 5B, CSICU, OR

Practice Level

Basic: within the scope of practice of every nurse (RN)

Need to Know

- This procedure applies to patients who have had coronary artery bypass surgery (including graft harvest sites), heart valve surgery, heart transplant, ventricular assist device (VAD) surgery for sternal and leg wounds.
- This dressing change procedure does not apply to TAVI, TEVAR, lead extraction, device implant or removal, chest tube sites, VAD drive-line site, cannulation or cut down sites. These procedures will continue to use the standard adhesive island dressing (e.g. Mepore) or other appropriate dressing.
- The best environment for the natural wound healing process is a warm, moist and non-toxic environment. The ideal temperature has been identified as body temperature, as a reduced temperature may stop the cell activity involved with healing. Having the incision covered and undisturbed for 72 hours provides an optimum healing environment.
- Health care providers should not lift the dressing to assess the incision within the first 72 hours. This will disrupt the warm, moist healing environment.
- The initial dressing should be applied in the operating room.
- The dressing should remain in place for 72 hours from time of application and then be removed.
- The only time a dressing should be changed before 72 hours is dressing is if 80% saturated. This is usually when drainage is within 1 cm of the edge of the dressing's pad as this indicates the dressing is saturated.
- Do not reinforce composite surgical cover dressings (e.g. Mepilex Post-Op Border).
- If dressing must be changed before 72 hours, see Table 1: Choosing the Appropriate Dressing Protocol for Post-Cardiac Surgical Incisions
- Incisions left open to air should be assessed daily by RN for satisfactory healing. Patient (if able) should be instructed to gently cleanse their incision with a clean cloth and ph-balanced cleanser/ mild soap and water. If patient unable to cleanse incision themselves, the nurse can cleanse as per procedure below.
- Patients who have vein/artery grafts will return from the operating room with tensor bandages on the affected limb(s). The tensors remain in place for 72 hours. Unwrap the tensor once per shift and assess for complications (hematoma, dressing integrity). Rewrap the limb beginning at the distal end (bottom) and wrapping to the top (toes to thigh or fingers to armpit) ensuring the entire limb is

wrapped and not just the area of the incision. The tensor can be permanently removed 72 hours after initial application unless otherwise ordered.

Signs and Symptoms of Infection

- If signs and symptoms of infection are noted (i.e. increased WBC, increase pain at site, temperature discoloured drainage on dressing); have NP/MD assess wound. See Appendix A: Clinical Signs and Symptoms (S&S) of a Wound Infection for more detail.
- Swab incision for C&S, if ordered.
- If signs and symptoms of infection are present, application of an antimicrobial product will likely be necessary. Refer to Dressing Selection Quick Reference Guide or consult Nurse Specialized in Wound, Ostomy and Continence (NSWOC) for guidance on product selection. Cover with Mepore or Mesorb dressing and secure with paper tape or Mefix.

Procedure for Cardiac Dressing Change

Equipment and Supplies

Cover Dressing (e.g. Mepilex Border Post-op, Mepore, Mesorb, etc.)
Normal Saline
Dressing tray
Clean gloves
Personal Protective Equipment (PPE) as required

Steps	Rationale
1. Gather Supplies • Select the correct dressing as per Table 1	Choosing the appropriate cover dressing is integral to wound healing and depends on many factors. See Related Documents for more information if required. The correct dressing should ensure there is 2.5 cm margin between the edge of the incision and the edge of the padded/ island section of the dressing.
2. Perform hand hygiene and don gloves.	
3. Prepare the patient: • Verify the correct patient using two identifiers as per policy. • Assess the patient's pain and administer appropriate analgesia. • Position the patient for the procedure.	
4. Set up sterile dressing tray and sterile field.	
5. Don clean gloves and remove dressing by lifting gently from the edges.	Prevents transmission of infectious organisms from dressing to nurse's hands.

Observe appearance of drainage on dressing; assess for colour and consistency. Discard dressing and remove gloves	To minimize trauma to the per-incisional skin. Provides estimate of drainage amount and assessment of wounds condition.
6. Perform hand hygiene and apply new gloves.	
7. Perform wound/ incision assessment.	Indicates state of wound healing.
8. Cleanse and apply cover dressing as per Table 1. below	
9. Doff gloves and perform hand hygiene.	

Table 1: Choosing the appropriate Dressing Protocol for Post-Cardiac Surgical Incisions (sternal and leg wounds)

Before 72 hours

- Do NOT cleanse the incision with any solution. If drainage present, gently dab this area on incision only with sterile gauze. Use Normal Saline only to cleanse the peri-incisional skin.
- Apply composite surgical cover dressing (e.g. Mepilex Border Post-Op).

After 72 hours

- Do NOT apply composite surgical cover dressings (e.g. Mepilex Border Post-Op) as these dressing may increase moisture to incision line which may lead to breakdown.
- If applying dressing over only one area of incision, use paper tape, silicone tape or silicone foam dressing only over newly epithelialized incision.

Amount of Exudate	Cleansing agent	Cover Dressing	Frequency of Dressing changes	Rationales
None to minimal	• pH-balanced cleanser (e.g. Remedy No-Rinse cleanser) + soft cloth (e.g. Wypall) OR • Normal saline	• Leave open to air (OTA) Or • If patient prefers apply adhesive breathable island cover dressing (e.g. Mepore)	*OTA* • cleanse/ gently wash daily while in hospital *Island Dressing* • change every 1 to 3 days while in hospital • Discontinue dressings when possible.	A superficial skin layer to seal the incision develops in 48 to 72 hours therefore no covering is required. A breathable dressing (e.g. Mepore) will ensure new skin layer remains dry and risk of skin breakdown is not increased by excess moisture.

Minimal to moderate	• Normal saline	• Adhesive breathable Island cover dressing (e.g. Mepore)	• Change Daily while in hospital • Discontinue when no longer draining	Small amounts of exudate require only an Island type dressing as it is likely to be removed the next day.
Moderate to heavy	• Normal saline	• Composite, absorbent cover dressing (e.g. Mesorb). Secure with paper tape or Mefix. • If packing is needed, change wound care treatment plan to healing by secondary intention protocol	Change every 1 to 3 days as per amount of exudate or wound care treatment plan.	Composite absorbent cover dressings are breathable dressings that absorb exudate and do not trap excess moisture onto the wound/ incision bed. They also are semi- or non-adherent pad so the dressing will not stick to wound bed.

Documentation

- In Cerner PowerChart, document:
  - Time and date of dressing changes
  - All procedures, including assessments, dressing changes (including type of dressing applied) and patient response to procedure
  - All communications with health care team
  - Condition of dressing each shift

Patient and Family Education

- Educate patient and family on signs and symptoms of infection and instruct them to monitor incision(s) for these signs and symptoms
- Instruct patients and family not to apply antibiotic creams, lotions or other topical creams or lotions to the incision(s)
- Instruct patient and family to report to health care provider increased drainage, redness or pain at the incision site(s)

Related Documents

1. BD-00-12-40072 - Wound Cleansing Procedure
2. BD-00-12-40073 - Wound Packing Procedure
3. BD-00-07-40098 - Wound Management for Adults and Children
4. BD-00-07-40022 - Wound Dressing Selection Guideline for Adults & Children

5. B-00-14-10001 - Wound Dressing Selection Quick Reference Guide:
6. B-00-07-10072PHC Quick - Digital Photography of Wounds & Ostomies
7. Product Information Sheets:
    a. Mepilex Border Post-Op
    b. Mesorb

References

Harris CL, Kuhnke J, Haley J, Cross K, Somayaji R, Dubois J, et al. (2017). Best practice recommendations for the prevention and management of surgical wound complications. In: Foundations of Best Practice for Skin and Wound Management. A supplement of Wound Care Canada; Retrieved from: https://www.woundscanada.ca/docman/public/health-care-professional/bpr-workshop/555-bpr-prevention-and-management-of-surgical-wound-complications-v2/file

National Institute of Clinical Excellence. (2019). Surgical site infections: Assessment and treatment. https://www.nice.org.uk/guidance/ng125/chapter/Recommendations

Provincial Nursing Skin & Wound Committee (2020). Guideline: Assessment, Prevention & Treatment of Wound Infection. Retrieved from: https://www.clwk.ca/buddydrive/file/guideline-wound-infection-2017-january/

Appendix A: Clinical Signs and Symptoms (S&S) of a Wound Infection

Clinical Signs and Symptoms (S&S) of a Wound Infection **Two (2) or more of the S&S below are sufficient for a clinical diagnosis of potential or actual wound infection.** **One (1) or more of the S&S below is sufficient for a client with DM, PAD or who is immunocompromised.**		
Contamination Microorganisms are transient, wound closes	• There are no signs of infection (erythema, pain, or excess wound exudate). • The wound progresses to closure in a timely manner.	Vigilance Required

Colonization
Microorganisms present without usually impeding wound healing
	• There are no signs of infection (erythema, pain, or excess wound exudate).
	• The wound progresses to closure with minimal delay:
	  ◦ If microbial colonization increases, there may be subtle delays in the wound healing progression, and/or
	  ◦ Biofilm may develop, and interfere with the wound healing progression by contributing to chronic inflammation and may lead to a localized infection.
		Increasing Clinical Concern(s)

Local Infection Microorganisms invade leading to healing impairment. Subtle S&S of infection may evolve into more classic S&S of infection.	• Increase and/or new onset of wound pain or increasing pain. • Periwound erythema, induration, warmth less than 2 cm. • Delayed healing and/or wound enlargement: less than 10% change in wound measurements after 1 week of care or less than 30% healing in 3 weeks. • Friable granulation / hypergranulation / bright red granulation tissue in the wound bed. • Epithelial bridging and pocketing in granulation tissue. • Increase in exudate and/or change in the exudate characteristic e.g., purulent. • Onset of, or increased, malodour after wound cleansing.	Intervention(s) Required
Spreading Infection Microorganisms invade with classic S&S of wound infection	• Increased wound size with the presence of satellite, or new satellite wounds. • Periwound skin warmth extending 2 cm or greater and/or 2-3°C change in temperature with an infrared thermometer. • Periwound erythema and induration extending 2 cm or greater. • Mild to moderate periwound swelling/edema. Soft tissue crepitus around the wound may be present. • Increasing malodour after wound cleansing. • Changes or increased blood glucose • Lymphangitis (inflammation of the lymphatic system) or general malaise/lethargy.	
Systemic Infection Microorganisms invade with classic S&S of systemic infection	• Increasing general malaise/lethargy. • Fever, rigor and/or chills. • Change in behaviour or cognition e.g., acute delirium. • Increased in blood glucose levels e.g., clients with diabetes mellitus. • Autonomic Dysreflexia in clients with T6 spinal cord injuries or above. • Rapid, elevated heart rate and respirations. • Elevated white blood cell (WBC) count. • Severe sepsis leading to septic shock leading to multi-organ failure and/or death.	

Provincial Nursing Skin & Wound Committee, 2020. Retrieved from: https://www.clwk.ca/buddydrive/file/guideline-wound-infection-2017-january/

Developed By

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