

Cavity wounds

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Question

What is the best available evidence regarding the management of cavity wounds?

Clinical bottom line

Cavity wounds can result from a number of causes including the following:¹

- Surgery that requires the wound to heal by delayed primary or secondary intention; for example, wounds that are characterised by a sinus tract or abscess, or wounds that require surgical debridement.
- Surgical wounds that have become infected; for example, as a result of suture line dehiscence.
- Chronic wounds that have developed cavity formations.
- Physical trauma.

Cavity wounds are often allowed to heal by delayed primary intention or by secondary intention; this refers to a wound that needs to remain open in order to heal from the wound base upwards by laying down new tissue. This approach to healing may also be selected when the location of a wound increases the likelihood of infection¹ (Level I).

Cavity wounds that require surgical debridement or the excision of tissue to lay open tracts have traditionally been packed with ribbon gauze soaked in solution (antiseptic or saline). Advanced technology continues to influence and increase wound care dressing choices and, in particular, seeks an alternative to wound packing with ribbon gauze that has a tendency to dry out and harden, causing pain and discomfort to the patient at dressing changes and increases the risk of damaging the wound bed further upon removal of the dressing² (Level IV); ¹(Level I).

While strong evidence supporting one type of wound packing material over another is lacking, experience with alternatives to gauze as a packing material is reported in the following studies:

- Foams: the use of foam instead of gauze for packing surgical wounds is associated with:² (Level IV)
 - earlier discharge from hospital
 - reduced patient discomfort at dressing change
 - a reduction in costs associated with materials and labour time.

This study did not find a difference in "time to healing" when foam was used instead of gauze for packing surgical wounds² (Level IV).

- Hydrofibre: a prospective randomised controlled trial (n=40) comparing hydrofibre with proflavine-soaked gauze for packing excised surgical wounds reported that wounds packed with hydrofibre are associated with:³ (Level II)
 - increased cost-effectiveness
 - reduced pain at dressing change.
- Negative pressure therapy (NPT): A number of complex factors are associated with the use of NPT. The health care professional is directed to a comprehensive evidence summary that has been developed specifically addressing the use of NPT in cavity wounds.
 - NPT uses a device that assists wound closure by applying non-compressive mechanical forces to a wound. The wound cavity is dressed with a sterile foam dressing in which the suction tube is placed and the wound is then covered with a semi-permeable film dressing; the device uses a power source (electricity or batteries) to operate. A number of healing benefits using NPT are reported in the literature, these include the following:⁴⁻⁶ (Level IV)
 - increases local blood flow
 - reduces oedema
 - stimulates formation of granulation tissue
 - stimulates cell proliferation
 - removes soluble healing inhibitors from the wound
 - reduces bacterial load
 - draws the wound edges closer together.
 - A number of adverse events can occur as a result of applying NPT incorrectly or inappropriately. When considering the application of NPT, it is essential that the manufacturer's instructions are carefully followed. In addition, attention to the following factors is most important:⁴⁻⁶ (Level IV)
 - Monitor bleeding if patient is taking anti-coagulants.
 - Do not use on wounds that contain dry, necrotic eschar or are malignant.

- Do not use the dressing on exposed blood vessels, organs, non-enteric or unexplored fistulae.

A holistic approach to wound management recognises that a number of factors interdependently influence healing. These factors are broadly categorised as follows:⁷ (Level IV)

- Patient-related factors.
- Wound-related factors.
- Skill and knowledge of the health care professional.
- Resources and treatment-related factors.

Having regard for the potential influences exerted by these psychosocial and environmental factors, a systematic approach to the management of a cavity wound requires attention to the following variables:⁴⁻⁷ (Level IV)

- A comprehensive assessment of the wound is conducted at each dressing change and a detailed account is recorded of the size, shape and depth of the wound; type of cavity formation/s such as sinus tracts or tunnelling; a description of the wound bed tissue; exudate characteristics; and any signs of infection.
- Assessment of a wound with cavity formation/s is recorded in both two and three dimensions to guide treatment accurately.
- The selection of the most appropriate packing material and dressing for the cavity wound is based upon the wound assessment.
- A sound knowledge of the anatomy underlying the wound is essential to guide the treatment regime and to avoid further damage to tissue.

When dressing a cavity wound careful attention to the following factors is required:¹ (Level I); ^{2,4,7} (Level IV); ⁸ (Level III)

- Ensure patient comfort and support; this includes measures that effectively control odour.
- Avoid damage to granulating cells by packing the cavity gently and not too tightly.
- Fill any cavities within the wound to avoid impaired healing and increased bacterial invasion.
- Ensure that the dressing eliminates any "dead space" in the wound in order to promote healing from the wound base, laying down new tissue as healing progresses.
- Ensure that the dressing absorbs and contains exudate and protects surrounding skin.
- Ensure that the dressing is impermeable to water and bacteria.
- Ensure that the dressing does not leave particulate contaminants in the wound.
- When removing dressing, ensure that wound trauma is avoided.

- The choice of packing materials and the frequency of dressings should be guided by the nature of the wound, aetiology, and dressing material availability.

Characteristics of the evidence

This evidence summary is based on a structured search of the literature and selected evidence-based health care databases. The evidence in this summary is from:

- A Cochrane Systematic Review, including 13 randomised controlled trials with small numbers and low quality¹.
- An article that summarised alternatives to the use of gauze as a packing material in wounds healing by secondary intention².
- A prospective randomised controlled trial of the cost benefits of dressing wounds healing by secondary intention with either ribbon gauze or a hydrofibre dressing³.
- A wound care manual⁴.
- Three position documents of the European Wound Management Association (EWMA)⁵⁻⁷.
- A series of case histories involving complex wounds⁸.

Best practice recommendations

- Assessment of the cavity wound must include size, shape and depth of wound, presence of sinuses, type of tissue in wound bed, exudate characteristics and any infection. (Grade A)
- The choice of packing materials and the frequency of dressings should be guided by the nature of the wound, aetiology, and dressing material availability. (Grade A)

Audit criteria

- A comprehensive assessment of the wound is conducted at each dressing change and a detailed account is recorded of the size, shape and depth of the wound; type of cavity formation/s such as sinus tracts or tunnelling; a description of the wound bed tissue; exudate characteristics; and any signs of infection.
- Assessment of a wound with cavity formation/s is recorded in two and three dimensions.
- Packing material and dressing for the cavity wound is based upon the wound assessment.
- Staff have attended education sessions to ensure a sound knowledge of the anatomy underlying the wound and subsequent treatment options.

References

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RECOMMENDED PRACTICE TITLE: Wound Packing

EQUIPMENT:

RECOMMENDED PRACTICE:

REFERENCES:

AUTHOR: Wound Healing and Management Node Group

KEYWORDS: Wound packing; cavity wounds; sinus tracts

OHS LOGOS: (Mark an X beside the logos to be included)

X	Patient Information
X	Wash Your Hands
X	Standard Precautions
	Take Care With Sharps
X	Clinical Competency
	Back Care Manual Handling
	Spills Are Hazardous
	Resident Education
	Maintain Electrical Safety
	Cytotoxic Chemotherapy
	Radiation Hazard
	Safety Testing

DATE: 15.06.11

NODES/PROFESSIONS/SPECIALITIES: Wound Healing and Management Node

Recommended Practice RP724 (Linked to ES5210)

Intervention: Wound Packing (Last updated 15.06.11)

Equipment

- Dressing pack, including sterile gloves and waste disposal bag
- Packing (as ordered)
- Solution: Sodium chloride 0.9%
- Alcohol wipe
- Appropriate dressing
- Sinus forceps (if required)
- Dressed probes (if required)
- Sterile scissors (if required)
- Adhesive tape
- Dressing trolley
- Apron
- Sterile gloves

Recommended practice

1. Explain procedure to patient.
2. Wash hands with soap and water, or alcohol gel. Ensure hands are dried thoroughly.
3. Wipe the dressing trolley with alcohol wipes.
4. Prepare dressing trolley with equipment.
5. Open dressing pack on the top of the trolley and add additional equipment.
6. Ensure disposal bag is within reach.
7. Prepare the patient.
8. Loosen dressing on wound and using non-sterile gloves or forceps, remove and place in disposal bag. Moisten with saline if necessary to help removal.
9. Perform hand hygiene either using soap and water, or alcohol gel and don sterile gloves.
10. Remove packing and discard, moisten with saline if necessary.
11. Using saline, clean wound with dressed probes or gauze swabs.
12. Prepare packing.
13. Pack wound lightly so that all surfaces are touched.
14. If using ribbon gauze, cut excess with sterile scissors and leave wick exposed.
15. Cover with outer dressing and seal. Remove gloves and place in disposal bag.
16. Make patient comfortable.
17. Dispose of all waste in the appropriate waste collection bins. Wipe trolley with alcohol wipe.
18. Decontaminate hands thoroughly with soap and water.
19. Document the number of packs used, and the condition of the wound.