

Debride or not debride

BIOGRAPHICAL SKETCH

Evonne Fowler, RN, MN, CETN, is a graduate of UCLA with a Master's Degree in Gerontology, As a Clinical Specialist in Gerontology and an ET Nurse, she has acquired a wealth of information and experience which she shares enthusiastically as a frequent author and lecturer. She is currently practicing at Kaiser Permanente Hospital, Bellflower, CA, as a Wound/Skin Care Specialist. She manages the Chronic Wound Care Clinic at Kaiser Bellflower as well.

Evonne is President of Dynamic New Directions, an educational and consultation company in Fountain Valley, CA. She serves on the Editorial Boards for both Ostomy/Wound Management and Decubitus Journals. She is serving a three year term on the National Pressure Ulcer Advisory Panel. Evonne chairs the Annual Advanced Wound Care Symposium sponsored by Health Management Publications, Inc.

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Abstract:

When non-viable tissue is present in a wound, healing is delayed and sometimes prevented from occurring. Nursing professionals and physical therapists are often called upon to perform various methods of debridement. In this presentation, debridement using instruments, chemical, and mechanical modalities will be discussed. Using wound coverings to remove necrotic tissue by autolysis will also be presented.

Objectives:

At the completion of the presentation, the attendees will be able to:

1. Recognize the presence of eschar requiring debridement.
2. Know the indications and contraindications for debridement.
3. Describe three techniques used in debridement.

4. Describe debridement by autolysis.
5. Describe how wound coverings aid in the process of autolysis.

Content Outline:

- I. Debridement - removal of non viable tissue

Types:

- A. Instrument/Sharp
- B. Chemical
- C. Autolysis
- D. Mechanical
- E. Other

- II. Definition of terms

A. Black Wound: A black wound is covered with necrotic tissue or eschar. Eschar often covers an underlying necrotic process. It is often mistaken for a healing scab. When eschar is covering, the wound cannot be accurately described until the eschar is removed.

B. Eschar: Thick, leathery black crust often covering and underlying necrotic process. Usually painless and non-tender.

C. Yellow Wound: A yellow wound may vary from pale ivory to various shades of yellow. The yellow color indicates the presence of slough (necrotic debris). Yellow wounds actively generate wound fluid.

D. Slough: Loose, string-like non viable tissue.

E. Erythema: the localized erythema surrounding a wound. It is the reaction of the skin to injury. Redness alone should not be confused with infection.

F. Wound fluid: Open wounds secrete drainage/wound fluid in varying amounts, color, and consistency. Descriptors of the

wound fluid include serous, serosanguinous, or purulent.

G. Undermining: Undermining or tunneling is separation of the skin surface from the underlying tissue.

III. Goal of debridement

- A. Wound cleansing
- B. Reduce bacterial contamination
- C. Providing an optimal wound environment for healing
- D. Preparation of surgical intervention

IV. Types of Debridement

- A. Instrument/Sharp Debridement

The use of instruments to remove necrotic or non-viable tissues from a wound to clean the area, improve the chances for spontaneous healing, or provide a favorable environment for other agents/techniques to work.

1. Technique

- a. Using the pick-up forceps, lift the tissue or eschar you are trying to debride, and cut it with scalpel or scissors. Cut it with care and try to take it down in layers to prevent removal of viable tissue. Pain and bleeding are signs of viable tissue.

2. When to stop debriding

- a. Impending exposure of tendon or bone
- b. Location of fascial plane
- c. Location of a named structure
- d. Excessive bleeding
- e. When you get nervous

3. Debridement Warning Signs - request re-evaluation

- a. "Holes"
- b. Extensively undermined ulcers or wounds

- c. Presence of gross purulence/infection
- 4. Methods to stop bleeding
 - a. Pressure: simple, effective, always with you - 10 minutes
 - b. Silver nitrate sticks - minor bleeding
 - c. Electrocautery - not likely to be available
 - d. Suture - not likely to use
 - e. Topical agents: Thrombin, Gelfoam, Surgicel, and Fibrin glue (expensive, not usually where you are)
 - f. Battery ophthalmic cautery - useful if available

5. When is a physician required?

- a. Patient febrile or on downhill course
- b. No wound improvement over several weeks/sessions
- c. Cellulitis
- d. Gross purulence
- e. Impending exposed bone or tendon
- f. Abscessed area
- g. Major vessel encountered

B. Chemical Debridement

The use of enzymatic agents to digest/dissolve necrotic tissue.

Technique:

- 1. Individual product application techniques
- 2. Frequency of use
- 3. Product specific limitations

C. Autolysis Debridement

Liquefaction of non viable tissue by the natural enzymatic activity of the cellular components in wound fluid.

1. Description

- a. A selective form of debridement which will not disrupt healthy tissue. A variety of wound coverings keep the wound bed moist and/or contain wound fluid at the wound site.

- 1. Non invasive form of debridement.

- 2. May be used with other methods of debridement.
- 3. Minimal pain or discomfort.
- 4. Requires minimal professional expertise/monitoring.

2. Background

- a. 1950's Blister heals faster when left unbroken
- b. 1960's More rapid healing under occlusion
- c. 1970's Semipermeable transparent film dressings introduced
- d. 1982 Hydrocolloid dressings
- e. 1984 Introduction of a plethora of wound coverings; hydrogels, absorbent gels, pastes, beads, non absorbent hydrating topical agents, polyurethane foams, alginates and others.

3. Indications

- a. Wound Coverings are divided into categories on the basis of their physical properties. Caution should be used when categorizing all brands of coverings within a generic category.

- b. FDA has not given approval to all products within a given category. Choice of wound covering is based on an assessment of the patient and wound.

c. Considerations:

- 1. Type and amount of necrotic tissue
- 2. Type and amount of exudate/wound fluid
- 3. Location of wound, extent of undermining
- 4. Compliance/follow up
- 5. Cost

4. Limitations; potential for:

- a. Bacterial growth
- b. Odor on removal/leakage of dressing
- c. Maceration of surrounding skin
- d. Reinjury on removal
- e. Sensitivity to adhesive layer
- 5. Technique/cost
- a. Varies with dressing category

- b. Frequency of dressing change
- c. Contract pricing

D. Mechanical Debridement

1. Dressing techniques

a. "Dry to Dry"

- 1. Wide mesh gauze, opened wide, 1 layer thick
- 2. The greater the absorptive capacity, the greater the debridement effect
- 3. Non-selective, may cause bleeding
- 4. Tissue desiccation in a dry environment

b. "Wet to Wet"

- 1. Wide mesh gauze, applied saturated with an agent
- 2. Less painful
- 3. More physiologic environment due to the moisture
- 4. Potential for maceration
- 5. Mild source of debridement

c. "Wet to Dry"

- 1. Wide mesh gauze, applied wet to an area, area allowed to dry, then removed
- 2. Painful
- 3. Non-selective, may cause bleeding, avulses new epithelium
- 4. Aggressive source of debridement

d. Limitations; potential for:

- 1. Odor on removal/leakage of dressing
- 2. Maceration of surrounding skin
- 3. Reinjury on removal

E. Other Types of Debridement

1. Whirlpool

- a. Achieves effects through the physical properties of water, temperature, and agitation
- b. Non-selective movement of fluid
- c. Cleansing through the addition of a bactericidal agent

- d. Stimulation of circulation
 - e. Analgesic effect
2. Hydrosound
- a. Low frequency ultrasound used through water for debridement
 - b. Cavitation phenomenon at interface of tissue/liquid
 - c. Microstreaming action
 - d. Cleansing effect
 - e. Reduces bacteria count
 - f. Stimulation of circulation
3. Electrical stimulation