Debriding and Desloughing Management Strategies

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Controversy

Is desloughing the same as debridement?
Is there a difference between debridement and deslothing?

A new category will risk confusing nurses

Deslothing is part of debridement

Clinicians are educated on how to remove slough

Educated on how to determine which approach to take

Differentiate between slough and necrotic tissue

Cowan, T. Is there a difference between debridement and deslothing. Br J Nurs. 2015; 24(15): S18, s20
Necrotic tissue versus slough

Necrotic tissue
- Associated with cell death

Sloughy tissue
- Considered part of the inflammatory process

Milne J. Wound bed preparation: the importance of rapid and effective desloughing to promote healing. Br J Nurs. 2015; 24 (Sup 20): S52-S58.
Sloughy tissue

Consists of fibrin (non-soluble fibrinogen, which is a by product of the clotting cascade)

White blood cells, bacteria and debris, along with dead tissue and other proteinaceous material

In short, the cellular debris resulting from the process of inflammation
Sloughy tissue

Unlike necrotic tissue, we more than always aim to remove it.
Do not remove or remove with caution

Lower extremity wounds
- Arterial disease
- Dry gangrene

Stable eschar heels

Fungating or ulcerating tumours

Wounds with an inflammatory process
Debridement versus desloughing

Debridement

- Usually for necrotic tissue
- Method will depend on:
  - Clinical judgment
  - Clinical need
  - Anatomical location
  - Amount of necrotic tissue
  - Accessibility
  - Co-morbidities
  - Wound pathology
- Surgical debridement
- Can be high risk

Desloughing

- Lower risk alternative
- Includes using wound care products
- Both terms used interchangeably in the literature!

Desloughing

**Natural desloughing**
- Endogenous action of enzymes produced from white blood cells (autolysis)

**Assisted desloughing**
- Body's own natural autolytic process are unable to cope with the quantity of tissue damage
- Different methods are used to cleanse the wound

Cycle of slough formation

1. **Slough forms on the wound surface as a result of apoptosis**
2. **Bacteria from the surrounding skin and wound colonise**
3. **Low-level and extended inflammation occurs**
4. **Increasing number of white blood cells and plasma infiltrate the wound**
5. **Peri-wound oedema and exudate increase**
6. **Escalation in cellular activity**

Clinical challenges

Present in the large majority of wounds

Slough reoccurrence common post debridement
  • Ongoing desloughing procedures need to be maintained

No single method is able to remove all devitalised tissue

Evidence suggests combination of method is required
  • Surfactants to disrupt the outer membrane
  • Dressings
  • Other methods

Milne J. Wound bed preparation: the importance of rapid and effective desloughing to promote healing. Br J Nur. 2015; 24 (Sup 20): S52-S

Slough - a barrier to wound healing

- Inhibits wound healing
- Mimics/hides infection
- Attracts microorganisms
- Increases risk of infection
- Contains biofilms
- Increase odour exudate
- Inability to assess wound size accurately

EWMA Document: Debridement
An updated overview and clarification of the principle role of debridement

Considerations before debridement/desloughing

What is your level of skill?

The extent of the slough large versus small area

Hospital versus community setting

Pain, potential for bleeding

What products or equipment do you have available to you?
Several desloughing/debridement methods to choose from

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<th>Autolytic</th>
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<td>Hydrosurgical/jet lavage</td>
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Autolytic debridement

Selective debridement by release of endogenous proteolytic enzymes and phagocytes

Dressings support autolytic debridement

Factors influencing dressing choice

- The extent of sloughy tissue
- How much exudate there is
- Who will be changing the dressing?
- Are there clinical signs of infection?
- How frequently does the dressing need to be changed
- What dressings do you have access to?
Choice of dressings reliant on wound assessment

**Moisture donation**
- Hydrogels or hydrogel-based dressings

**Moisture maintenance**
- Hydrogel sheets, polyurethane films, hydrocolloids, combination dressings including soft silicones

**Moisture management**
- Alginates, hydrofibre, hydrophilic polymer modified starch

Autolytic debridement

Moisture donation

Moisture maintenance

Moisture management
Conservative sharp debridement

- Removal of non-viable tissue
- Scissors, Scalpel, Curette
- Avoid damage to underlying tissue
- Scope of practice
- Aseptic technique
Conservative sharp wound debridement
Curette
Combination of methods

A good case for surgical debridement
Ultrasonic debridement

Ultrasonic debridement - Sonoca 185®

Low frequency ultrasound (25Khz)

Leads to the formation and implosion of bubbles/cavitation

Bubbles implode, shockwaves are transmitted via the solution to the wound bed (microstreaming)

Ultrasonic debridement

Contact mode
• Debridement
• Bactericidal effect
• Wound healing stimulation

Non-contact mode
• Bactericidal effect
Hydrosurgical

Combines physical and surgical debridement

High pressure jet sterile saline

Creates a Venturi effect

Skilled personnel

Non-selective

Osmotic debridement/honey

Draws fluid from the surrounding healthy tissue to accelerate autolytic debridement

Reduces the wound pH (3-4.5) creates an acidic environment hostile to bacteria and other pathogens

A byproduct is the release of hydrogen peroxide – supports autolytic debridement

Biological debridement (Laval therapy)

Live maggots (Lucila sericata) applied to the wound bed

Loose or in a net dressing

Biological debridement

Maggots eat necrotic and non-viable tissue

Secrete an antibacterial compound

Reduces bio-burden, reducing inflammation, increasing neo-angiogenesis

Enzymatic dressings

Derived from proteolytic enzymes

Extracted from
- Bovine plasma or pancreas
- Fruit and plants such as papin from papaya or bromelaine from pineapple
- Bacterial collagenase derived from the Clostridium histolyticum sp.

Recommended for hard dry eschar

Monofilament fibre pad

Wound contact side is fleecy

Moisten with a wound cleansing solution

Gently wipe over the surface of the wound

Useful for sloughy wounds, hyperkeratosis

Key points

- Not one method suitable for all wounds
- Relies on clinical judgment
- Skills available
- Manage reoccurrence of slough
- Removing slough is a key step in wound bed preparation
- Harbors biofilm leading to an inflammatory response delaying healing

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Thank you for your attention