The Nurses Role in Wound Management
Wound Management Clinics

Abstract

This full length lecture is the final one in the Wound Management series from Louise O’Dwyer and is an expansion of the bitesize lecture on developing the nurses role in wound management and goes into further detail on the subject. It gives practical advice on wound management and discusses how nurses can take an active role in wound management in practice.

Learning outcomes

- A development of knowledge and understanding of wound management.
- The confidence to develop an active role in wound management in practice.

Course Notes

Time:

☐ Tissue

☐ Infection and Inflammation

☐ Moisture

☐ Epithelialization

Address and reconsider at every dressing change; base wound management decision on results

Assess the patient:

☐ How has the patient been feeling/general health

☐ How painful is the wound? – Analgesia

☐ What condition is the dressing in?

Lavage the wound at every dressing change

☐ Removes fragments of dressing material

☐ Removes inflammatory fluids

☐ Rehydrates the surface of the wound after exposure

☐ May reduce the risk of contamination at the time of the dressing change
Consider whether there is tissue that needs to be debrided from the wound
☐ Can this be done using dressings?
☐ Does this need to be done surgically?

Assess and record the wound:
☐ Size
☐ Appearance of the wound – identify different areas
☐ Appearance of the skin surrounding the wound

Make decisions:
☐ What primary layer to apply
☐ When you need to see the wound again
☐ Whether or not tissue samples are necessary

Re-dress the wound and make sure the owner is informed about progress deterioration, expectation and when to return

<table>
<thead>
<tr>
<th>Action required or wound characteristics</th>
<th>Examples</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control of exudate – prevention of maceration</td>
<td>Foams, hydrocolloids, hydrogel, honey</td>
<td>Often very exudative wounds just need more frequent dressing changes – even twice a day if necessary. The inflammatory mediators in the fluid will perpetuate the problem unless it is removed</td>
</tr>
<tr>
<td>Necrotic, sloughy or contaminated requiring debridement</td>
<td>Adherent (wet to dry), hydrogels, larvae, honey or sugar pastes, hydrocolloids, enzymatic, acidic solutions</td>
<td>Consider surgical debridement if the wound is very necrotic</td>
</tr>
<tr>
<td>Rehydration of necrotic tissue or dry surfaces</td>
<td>Hydrogels, hydrocolloids, (adherent wet to dry)</td>
<td></td>
</tr>
<tr>
<td>Infection</td>
<td>Adherent (wet to dry), silver, PHMB, honey dressings, larvae</td>
<td>Debridement and frequent dressing changes should be the mainstay in managing wound infection</td>
</tr>
<tr>
<td>Stimulation of healing that appears to have slowed</td>
<td>Alginites, hydrocolloids, collagens, honey</td>
<td>Identifying the cause of the slowed healing may be more important, e.g. healing may slow because the wound is too wet or too dry or needs debriding</td>
</tr>
<tr>
<td>Maintenance of a humid environment or prevention of desiccation</td>
<td>Semi-permeable membranes, hydrogel sheets, hydrogel under foam</td>
<td>Semi-permeable membranes allow controlled evaporation of fluid and maintain a slightly humid environment. They also allow gaseous exchange. Sometimes it is necessary to provide a source of moisture to maintain the humidity</td>
</tr>
</tbody>
</table>
Factors that delay healing:

**Infection**
Infected wounds heal slower than uninfected wounds and mixed infections are common. Collagenase producing bacteria have a profound effect on healing times.

**Movement**
- Movement at site or in attached tissues delays healing
- Excessive motion disruption of capillary buds, increases collagen deposition
- Directs healing process towards chronic inflammatory status
- Total lack of movement can be counterproductive due to lack of arrangement of collagen along stress lines

**Foreign Body**
- Commonest reason for non-healing wounds
- FB or necrotic tissue
- Some foreign matter will be removed by phagocytes
- Suture material = foreign material
- May become encapsulated and become effectively inert

**Necrotic Tissue**
- Necrotic/devitalised tissue of any type retards healing process
- Allow natural demarcation of non-viable tissue to become apparent
- Careful debridement of all non-viable tissue in initial stages is beneficial

**Altered Local pH**
- Certain bacteria will induce a highly acidic site
- Other bacteria will induce an alkaline site
- Ideally normal physiological pH or very slightly acidic.

**Poor Blood Supply**
- Regional blood supply may be impaired as a result of
  - Major blood vessel disruption
  - Thrombosis, oedema and contusion
  - Damage to the microcirculation from ischaemia
  - Anaemia
  - Delay in capillary formation

**Poor Oxygen Supply**
- Adequate oxygenation is important for normal healing
- Lowered systemic oxygenation due to decreased blood flow slows wound healing and encourages development of chronic inflammation.
- Anaerobic wound conditions can result in the development of the most serious clostridial infection.
- Modern gas permeable dressings enhance the oxygen gradient and surface carbon dioxide tension and so improve healing.

**Poor Nutritional and Health Status**
- Debilitated and/or old animals heal more slowly than healthy young animals.
- Hypoalbuminaemia.
- Vitamin A and C deficiency.

**Local Factors**
- Poorly draining wounds and wounds with dead space fail to heal.
- The accumulated fluid may be an ideal medium for bacterial replication.

**Iatrogenic Factors**
- Incision, swabbing, haemostatis by forceps, ligature or electrocautery.
- Adverse reactions to sutures can be minimised by:
  - Use finest gauge possible.
  - Atraumatic needles.
  - Appropriate suture patterns.
  - Least amount of suture material possible.
  - Excessive pressure from dressings can compromise blood supply and the surface oxygen tension.
  - Pressure may be used to control or prevent exuberant granulation tissue but this must be done very carefully.
  - Strong or weak acids or caustic chemicals, such as silver nitrate, potassium permanganate or copper sulfate damage tissue repair mechanisms.

**Corticosteroids**
- Result in suppression of:
  - Acute and chronic inflammatory signs.
  - Angiogenesis.
  - Fibroplasia.
  - Wound contraction.
- This includes topical corticosteroids.
- Exogenous corticosteroid may encourage infection by suppression of macrophage and neutrophil activity.
Practical Tips:

- Expect to have to provide adequate analgesia at every dressing change and wound assessment
- Expect to have to anaesthetise the patient sometimes to be able to manage the wound safely and without distress to the patient
- Always wear gloves when changing a bandage, from the beginning to the end. Consider changing gloves after lavaging the wound and preparing to redress it
- Always protect the wound from the hospital environment and carry out the dressing change on a clean surface (such as a disposable incontinence pad)
- Protect the wound from cross-contamination from either on going cases by keeping all wound management materials completely separate from each case.