

Principles of Wound Management



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Topics to be covered:



- ⌘ Primary Vs Secondary intention wounds
- ⌘ Stages of wound healing
- ⌘ Wound Cleansing
- ⌘ Wound Assessment
- ⌘ Modern dressings, equipment & therapies
- ⌘ Leg Ulcers
- ⌘ Pressure Sores
- ⌘ Burns
- ⌘ Wound Infection

Definition:



- ⌘ A wound is a loss of continuity of the skin, soft tissue, muscle and bone may be involved
- ⌘ Healing begins with a wound - it is a normal reaction to injury.
- ⌘ In soft-tissue injuries wound healing is a uniform process, involving the formation of new epithelium and the contraction for underlying granulation tissue to form a scar

Wound Research



- ⌘ Prior to the late 1970's little focus was placed on the care of chronic wounds
- ⌘ The care that was provided had no scientific basis and at best was inconsistent (Lindholm, 1997)
- ⌘ During the last three decades, the body of knowledge, built on evidence has increased dramatically.

Types of wound healing

⌘ Primary intention:

The wound edges are brought together by sutures, clips or other devices. Examples are surgical incisions or clean traumatic wounds sutured following injury.

⌘ Secondary intention:

The wound edges are apart, as in leg ulcers and pressure sores. Healing occurs as the defect gradually fills with granulation tissue.

Wound healing



- ⌘ For convenience, the healing process is described in stages, but in reality it is a continuous process.
- ⌘ Healing occurs by regeneration or repair:
- ⌘ Regeneration is the replacement of damaged tissue by identical cells and is more limited than repair; e.g. liver & nerve cells.
- ⌘ Repair occurs where damaged tissue is replaced by connective tissue which then forms a scar.

Stages of wound healing



⌘ Inflammatory stage: 0-7days

When tissues are injured, damaged cells cause the surrounding capillaries to dilate. It is this increased supply of blood, serum and white cells to the area that accounts for the inflammatory appearance of the wound.


The process of coagulation stops further bleeding and facilitates clot formation. Phagocytic white cells, polymorphs and macrophages migrate into the area.

Inflammatory stage ...



- ⌘ White cells line the walls of blood vessels to destroy any invading bacteria. Macrophages stimulate the formation of fibroblasts, which in turn stimulate the growth of new blood vessels-angiogenesis.

Proliferation/granulation stage; 3-24 days



⌘ New blood capillaries begin to grow into the wound margins. Fibroblasts multiply and form a scaffold of collagen fibres which support fragile capillary loops (granulation tissue). The tensile strength of the wound increases rapidly and inflammation subsides, although the wound remains red and raised.

Maturation stage: 24 days - 2 years



⌘ Epithelial cells, from the wound edge and hair follicles, migrate over new granulation tissue to meet other epithelial cells. Epithelialisation is completed. Vascularity decreases, with collagen fibres causing the wound to contract, and red granulation tissue changing to white avascular scar tissue.

Wound cleansing



- ⌘ It is a growing debate!
- ⌘ Various techniques used to clean wounds
- ⌘ Types of Antiseptics/antimicrobials
- ⌘ Material used; gauze, cellulose
- ⌘ Soaking Vs flushing
- ⌘ Saline Vs tap water in leg ulcers

Wound Cleansing cont...



- ⌘ One should weigh the benefits of cleaning against trauma to the tissue bed caused by mechanical or toxic damage.
- ⌘ Povidone-iodine, hydrogen peroxide, acetic acid, Potassium Permanganate, Saline, Tap water, sodium hypochlorite solution (Eusol)...

Wound Cleansing cont..



- ⌘ There are however, instances where wound cleansing is still advocated;
- ⌘ To remove excess slough and exudate
- ⌘ To remove remaining dressing material
- ⌘ **If wound cleaning is carried out it is now accepted practice to warm any fluid - cooling the wound inhibits cell mitosis and potentially delays healing.**

Goal and Objective



- ⌘ State the desired goal
- ⌘ State the desired objective
- ⌘ Use multiple points if necessary

Today's Situation



- ⌘ Summary of the current situation
- ⌘ Use brief bullets, discuss details verbally

How Did We Get Here?



- ⌘ Any relevant historical information
- ⌘ Original assumptions that are no longer valid

Available Options



- ⌘ State the alternative strategies
- ⌘ List advantages & disadvantages of each
- ⌘ State cost of each option

Recommendation



- ⌘ Recommend one or more of the strategies
- ⌘ Summarize the results if things go as proposed
- ⌘ What to do next
- ⌘ Identify Action Items