SKIN INTEGRITY & WOUND CARE

Chapter 34

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skin integrity: intact
skin refers to the
presence of normal skin
layer uninterrupted by
wound
WOUNDS

- DISRUPTION IN THE INTEGRITY OF BODY TISSUE
- CLASSIFIED AS:
  1. OPEN or CLOSED
  2. ACUTE or CHRONIC
  3. ACCORDING TO SEVERITY (superficial / deep)
  4. ACCORDING TO RISK OF INFECTION (clean / contaminated / infected)
PHASES OF WOUND HEALING

INFLAMMATORY PHASE

Occurs immediately after injury and last 3-4 days.

1. Hemostasis: Cessation of bleeding - clotting cascade, vasoconstriction / vasodilation

2. Edema: Body’s defensive adaptation to tissue injury – histamine, leukocytes.

Skin is red, edematous & warm to touch.
INFLAMMATION

H
I
P
E
R

Heat
Induration
Pain
Edema
Redness

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Granulation
Cells migrate into the wound area, deposit a matrix which fills the tissue void. This tissue is usually red.
PHASES OF WOUND HEALING

REGENERATION OR PROLIFERATIVE PHASE

3-4<sup>th</sup> day post injury and lasts for 2-3 weeks.

- Collagen (*protein*) adds strength to wound (*less chance of separation or rupture*). Raised healing ridge may be visible.
- Other cells help to compose different epidermal layers (*granulation & re-epithelization continues*).
Epithelialization

After a healthy granulation bed is formed, a two- to three-cell layer epidermis forms over the surface.
PHASES OF WOUND HEALING

MATURATION OR REMODELING PHASE

• 21st day to 2 years post injury.
• Scar tissue is *remodeled or reshaped*.
• Scar tissue is still weaker than the tissue it replaces (*usually never greater than 80% of pre-injury strength*).
• Scar appears large initially, but will decrease with time.
WOUND CHARACTERISTICS

• **SURGICAL WOUNDS** – intentional, clean, made by sharp instrument, sutures / staples / steri-strips.

• **TRAUMA WOUNDS** – lacerations or punctures, considered dirty or contaminated, scarring more likely.

• **CHRONIC WOUNDS** – heals slowly, may recur, pressure ulcers / venous stasis ulcers.
TYPES OF WOUND HEALING

PRIMARY INTENTION

• Wound edges “approximated”
• Granulation tissue fills in wound
• Occurs in first 14 days post surgery
• ↓ risk of infection
• Minimal scarring – predictable movement through phases of healing
TYPES OF WOUND HEALING

SECONDARY INTENTION

• Prolonged healing (extensive tissue loss)
• Edges cannot be approximated
• Granulation tissue must fill wound
• ↑ Risk of infection
• May be intentionally left open
TYPES OF WOUND HEALING

TERTIARY INTENTION
DELAYED / SECONDARY CLOSURE

- Primary closure is undesirable
- Might be poor circulation or infection
- Suturing delayed until problems resolve
PRESSURE ULCERS

Patients at Increased Risk

- DECREASED ACTIVITY LEVEL (Immobility)
- INCONTINENCE (fecal and urinary incontinence)
- ALTERED Level of consciousness
- DIMINISHED SENSATION
- IMPAIRED CIRCULATION
- POOR NUTRITION STATUS
- EXCESSIVE BODY HEAT: increase the metabolic rate which increase the need for oxygen
- ADVANCED AGE
PRESSURE ULCERS

Characteristics

- Localized areas of tissue necrosis
- Tend to develop when soft tissue compressed between bony prominence & an external surface
- Due to ischemia
- Reduction of blood flow causes \textit{blanching}
- Other contributors= \textit{shearing} & \textit{friction}
STAGES

I: Nonblanchable erythema

II: Partial – thickness loss

III: Full – thickness loss

*Extends into subcutaneous tissue*

IV: Full-thickness loss

*Extends into muscle / bone*
On average*, a pressure ulcer 2.075 mm or deeper is classified at least as a Stage III.

* Skin sample enlarged to show detail.
Classification of Pressure Ulcers

• Stage I: persistent red, blue, or purple tones; no open skin areas
Classification of Pressure Ulcers

• Stage II: partial-thickness skin loss; presents as an abrasion or blister
Classification of Pressure

- Stage III: full-thickness skin loss with damage or necrosis of subcutaneous tissue; presents as a deep crater
Classification of Pressure

• Stage IV: full-thickness skin loss with extensive destruction, necrosis, or damage to muscle, bone, other
PROBLEMS OF WOUND HEALING

INFECTION

• Most common 36-48hrs postop; common cause of altered wound healing
• Symptomatic 5 – 7 days
• Must monitor clients adequately
• Wound can become contaminated preop; intraop; or postop
HEMORRHAGE

• Persistent bleeding is abnormal
• Some bleeding normal after initial trauma & surgery
• Hemostasis within a few minutes
• Swelling around the wound & presence of sanguinous drainage from a drain may indicate hemorrhage
• **HYPOVOLEMIC SHOCK:** ↓ B/P, rapid thready pulse, diaphoresis, restlessness, cool clammy skin
SIGNS OF SHOCK
\[ \downarrow \text{IN MAP (MEAN ARTERIAL PRESSURE)} \]

**Compensatory Signs (Non Progressive)**
- MAP \( \downarrow 10-15 \text{mmHg FROM BASELINE} \)
- \( \uparrow \) RENIN
- VASOCONSTRICTION
- \( \downarrow \) PULSE PRESSURE
- \( \uparrow \) HEART RATE
- \( \downarrow \) pH
- RESTLESS
- APPREHENSIVE

**Early Signs**
- MAP \( \downarrow 10 \text{mmHg FROM BASELINE} \)
- EFFECTIVE COMPENSATION
- \( O_2 \rightarrow \text{VITAL ORGANS} \)
- \( \uparrow \) HEART RATE

**Progressive Signs (Intermediate)**
- MAP \( \downarrow 20 \text{mmHg FROM BASELINE} \)
- TISSUE/ORGAN HYPOXIA
- \( \downarrow \) URINE (OLIGURIA)
- WEAK RAPID PULSE
- \( \downarrow \) pH
- SENSORY NEURAL CHANGES

**Refractory Signs (Irreversible)**
- EXCESSIVE CELL/ORGAN DAMAGE
- MULTI SYSTEM ORGAN FAILURE
- \( \downarrow \) pH

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DEHISCENCE

• PARTIAL OR TOTAL SEPARATION OF WOUND EDGES (most likely to occur 4 – 5 days postoperatively)

EVISCERATION

• PROTRUSION OF AN INTERNAL ORGAN THROUGH THE INCISION
DEHISCENCE / EVISCERATION

Dehiscence
Separation or splitting open of layers of a surgical wound

Evisceration
Extrusion of viscera or intestine through a surgical wound
SKIN INTEGRITY FACTORS

- PERSONAL HYGIENE
- NUTRITIONAL STATUS
- SMOKING
- SUBSTANCE ABUSE
- ACTIVITY
- AGE
- INCONTINENCE
- HYPOXEMIA
- DIABETES
- MEDICATIONS
- INFECTION
ASSESSMENT-ASSESSMENT

• THOROUGH SKIN ASSESSMENT !!
• HEALTH HISTORY (client interview)
• DIAGNOSTIC TESTS....
• WBC (infection)
• ALBUMIN LEVELS
• Skin: color, temperature, turgor, integrity
• Risk for pressure ulcers
• Nutritional status
• Exposure of skin to body fluids
• Pain

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Nursing Diagnoses

- Risk for infection
- Imbalanced nutrition: less than body requirements
- Pain
- Impaired skin integrity
- Impaired tissue integrity
Planning

• Goals and outcomes
  – Wound improvement within 2 weeks
  – No further skin breakdown
  – Increase in caloric intake by 10%

• Setting priorities

• Continuity of care
Implementation

• Prevention of pressure ulcers
  – Skin care, Positioning, Use of support surfaces
• Prevent and manage infection
• Cleanse the wound
• Remove nonviable tissue
• Manage exudate
• Protect the wound
• Client education
• Nutritional support
First Aid for Wounds

• Control of bleeding
• Cleansing
• Application of topical growth factors
• Protection
NSG DX: IMPAIRED SKIN INTEGRITY

• WHAT DO YOU DOCUMENT ??

1. LOCATION
2. SIZE (in centimeters cm)
3. COLOR
4. SURROUNDING SKIN
5. DRAINAGE
6. TEMPERATURE
7. PAIN
8. WOUND CLOSURES
9. ODOR

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WHAT ARE THE RELATED FACTORS?

- MECHANICAL FORCES (RESTRRAINTS – PRESSURE)
- ↓ CIRCULATION
- IMMOBILIZATION
- ALTERED SENSATION
- NUTRITIONAL STATE
- SKIN TURGOR
- SURGERY
SOME DESIRED OUTCOMES (GOALS) MAY BE:

1. MAINTAINS ADEQUATE NUTRITIONAL & FLUID INTAKE
2. CLIENT CAN PERFORM WOUND CARE
3. CLIENT CAN STATE SIGNS OF INFECTION
KNOW THE RIGHT INTERVENTIONS!!

- MONITOR CLIENT (ASSESSMENT / ASSESSMENT)
- SKIN CLEANSING
- NUTRITION (MULTIDISCIPLINARY EFFORT)
- POSITIONING
- TEACHING
- WOUND CARE / SKIN PROTOCOL
WOUND CLEANSING

• IRRIGATION DEVICES
• VARIOUS SOLUTIONS

NORMAL SALINE

GENERALLY,. WOUND ITSELF CLEANER THAN SURROUNDING SKIN
Step 8c Open sterile dressings and let fall onto sterile field.

Step 8d Pour container of cleansing solution.

Step 9 Dip cotton-tipped applicators into solution.

Step 10 Clean wound from the least contaminated area to most contaminated area.

**microorganisms into the wound.** Using an applicator once prevents transfer of microorganisms into the cleansing solution container.

11. Dry the surrounding skin gently with paper towel.
DRAINS

- PLACED IN WOUNDS BEFORE SURGICAL INCISION CLOSED

- PREVENTS FLUID FROM COLLECTING BETWEEN WOUND SURFACES

- USUALLY LEFT IN PLACE 3 TO 7 DAYS

  PENROSE
  HEMOVAC
  JACKSON-PRATT
  RUBBER BAND
IMPLEMENTATION

• Ensure proper hygiene & skin care
• Proper positioning
• Consults as needed
• Apply complementary therapies
• Precautions if necessary
• Specialty beds
• HANDWASHING – staff & patient
EVALUATION

• If goals not met – examine interventions & revise plan of care appropriately
• Review techniques & procedures of staff
• Review techniques of client & family
• Focus on CLIENT TEACHING !!