WOUND ASSESSMENT FOR THE UPPER EXTREMITY

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Today’s Objectives

Within the context of upper extremity wounds:
- Identify the components of wound assessment
- Understand factors that impact wound healing
- Become familiar with wound terminology definitions
Assessment Process

- I- Reason for referral, Diagnosis, Systems review, physical exam, appropriate for therapy?
- II-Therapy diagnosis, wound exam
- III-Goals, prognosis, outcomes, evaluation of progress
- IV- Planned interventions
General Overview

- UE wounds almost never become a chronic wound unless initial treatment is delayed, co-morbidities severely impact healing, or wounds exist in other regions impacting available coverage for the U.E.
- Many hand wounds lack moisture
- Insensate skin will heal more slowly
Chronic ankle wound
Wound with devitalized tissue after near amputation in pt. with heavy nicotine use.
A common example of healing by secondary intention
WOUND ASSESSMENT
Phase I

- **Reason for referral**
  - Prepare for surgical closure
  - Facilitate closure through secondary intention
  - Enhance graft or flap coverage healing

- **Comprehensive assessment (WHO):** Wound problem in context of the whole person. Interview is rapport building.

- **Chief complaint:** duration, why seeking tx, pt. understanding of condition

- **Symptom criteria:** location, characteristics, severity, timing, setting, antecedents and consequences
Purpose of referral may change, wound healing is a dynamic process
Phase I

- Health history, habits, roles, family medical history
  - Factors impacting tissue perfusion and nutrition for healing
  - Immune system function, glucose levels, clotting disorders
  - Alcohol, substance abuse, nicotine, caffeine, nutrition
  - Skin: radiation, prior wound history
- Medications, allergies
  - Those that interfere or interact with wound healing and tx. choices
- Exercise and sleep habits, AD for ambulation
Phase I

- **Sociologic**
  - Family support, economics, environment, occupation, patterns of health care, daily life, agreement to treatment

- **Psychological**
  - Cognition, learning styles, response to illness, response to care (participation), coping

- **Cultural**

- **Functional outcome measures**
Wound Evaluation Indexes

COMPOSITE OF WOUND CHARACTERISTICS
Wound and periwound terminology

- Refer to your handouts
- You will see examples of wound terms throughout the presentation.
Phase II: Indexes for Wound Assessment

**Wound etiology**
- Trauma
- Pressure
- Neuropathic
- Other
- Environment where injury occurred
- Duration of wound

**Prior treatments and responses**

**Surgical coverage is a good option**
Inspection

- Redness, swelling, and warmth
- Cellulitis or red streaking
- Patient’s pain reports
Inspection

- Purulence does not always mean infection
- Wound culture to determine wound infection/MRSA
- Signs of fever, chills, lethargy
Inspection
Palpation

- Back of examiners hand: temperature (or temperature tapes)
- Your finger pads: texture, fibrotic tissue
- Your thumb: hardness/softness at various tissue depths
- Your palm: edema, induration
Wound Location

- Body diagram
- Refer to anatomical region
  - E.g.: medial volar distal 1/3 of forearm
Wound Size and Shape

- Measure length and width-
  - Clock method
  - longest/widest portions of the wound
- Wound drawing
- Photography
- Same evaluator with same terms
- Assistant to help record
Wound Depth

- Wound surface to visible deepest part of the wound or clock method
- Saline moistened sterile cotton tip applicator
- Place fingers at location where applicator is flush with top of skin.
- Can be too shallow to measure
Undermining/Tunneling

- Undermining:
  - Wound edges are deeper than superficial epidermal edges. Typically wide
Undermining/Tunneling

- **Tunneling:**
  - Narrow channel extending from the wound, often deep
- **Clock method with sterile swab**
  - Start/stop for undermining
  - “Time” where tunnel is
Stage of Healing for Wound bed

- **Stage:**
  - Inflammatory
  - Proliferative
  - Epithelialization
  - Remodeling

- Chronic Stage
- Absent Stage
Know the anatomy
Wound Bed: Necrotic Tissue

- As tissues die, they change in color/consistency. Dead tissue retards wound healing.
- Full thickness or partial thickness
- Tissue cultures determine infection
- Color, Moisture content, Adherence, Size/Amount
Color Evaluation of Tissue

- **RED**: Healthy granulation tissue and good blood flow - *Keep wound bed moist*
- **YELLOW**: Fibrous nonviable tissue, necrotic fat - *Debride, Absorb exudate*
- **BLACK**: Nonviable tissue - *Thorough debridement, treat infection*

**Yellow +/or Black does not IMPLY infection. Culture must be positive.**

- **Drawing/photo/description**
  - Marion Laboratories/Cuzell J. 1988
Necrotic Tissue Terminology

- **Eschar:** Black/brown, indicates full thickness injury

- **Slough:** Yellow/tan, thin, mucinous/stringy
Tissue involvement

• Observation/description
• Full thickness: damage extends into subcutaneous tissues
• Partial thickness: damage to epidermis and dermis
Wound Drainage: Exudate Terminology

- Transudate: clear fluid
- Serous: yellow and odorless
- Sanguineous: red, bloody, thin
- Serosanguineous: pink
- Purulent: thick, white blood cells and living/dead cells which is yellow green brown
Exudate: Wound fluid/drainage that contains dead cells and debris.
Exudate documentation

- Color and terminology
- Consistency
- Odor: After irrigation
- Amount
  - None - wound tissues dry
  - Scan - moist, no measurable exudate
  - Small: 25% of dressing
  - Moderate: 25-75% of dressing
  - Large: >75% of dressing, easily expressed
  - Copious: >90% of dressing
Pain and Sensibility

- Pain (Questionnaires/VAS)
  - + Infection, deep tissue injury, vasc. insufficiency
  - - Neural injury/Neuropathy
- Sensibility-surrounding tissue. Protective and thermal sensibility
Temperature and Edema

- Temperature-excess warmth/coolness- temperature tape (normal 95 deg. F)
- Edema-fluid excess in tissues causing congestion to block the spread of infection
  - Circumferential measurements
  - Palpation
Periwound Area Terminology

- **Erythema**: Redness of skin surrounding the wound, warmth
  - Measure extent (clock method or length/width)
- **Cellulitis**: Streaking red: length
- **Ecchymosis**: Purple discoloration due to rupture of blood vessels and subcutaneous bleeding
- **Hyperkeratosis/rolled epidermal ridge**: Callous formation at wound edges. Often occurs with neurotrophic wounds.
- **Maceration**: Excess moisture contributes to extension of wound bed.
Erythema

Hyperkeratosis/rolled epidermal ridge
Periwound indexes

- Texture: Moist, dry, indurated, boggy, macerated
- Integrity: maceration, excoriation, erosion, denudement
Structures exposed due to an open wound

- Tendon: Initially white organized tissue, later yellow and dry
Muscle bone
Standardized wound evaluation tools

- Most standardized tools are for pressure ulcers.
- SWHT: Sussman Wound Healing Tool
  - (Adv.Wound Care 1997)