

From Flush to Closure

Comprehensive Wound Management

Deborah Calantropio-Covington, BA, MSc, RVT-VTS (LAN), RLATG

About me…

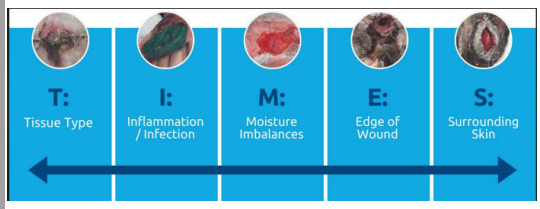




Overview

- Importance of effective wound management
- Review of wound classification





https://www.nvsweb.co.uk/blog/time-to-take-wound-care-back-to-basics/

Triage Assessment

- Assess ABCs: Airway, Breathing, Circulation
  - HR, pulse quality, MM, CRT, temp of extremities. **Treat shock early!!!**
- Identify life-threatening injuries
  - PAIN is a welfare concern AND a physiologic disruptor due to catecholamine release and impaired perfusion.
  - Multimodal pain control (opioids, local blocks, NSAIDs when appropriate) prevents escalation of pain pathways.
- Stabilize patient before wound care

Improves diagnostic accuracy and patient stability

Wound Classification

- Clean
  - Examples (Surgical wounds, no entry to contaminated organs)
- Contaminated
  - <6-8 hrs old, necrotic tissues, etc.
- Infected
  - Beyond 6-8 hours, HIGH infection risk, managed OPEN

Wound Classification Cont.

Open

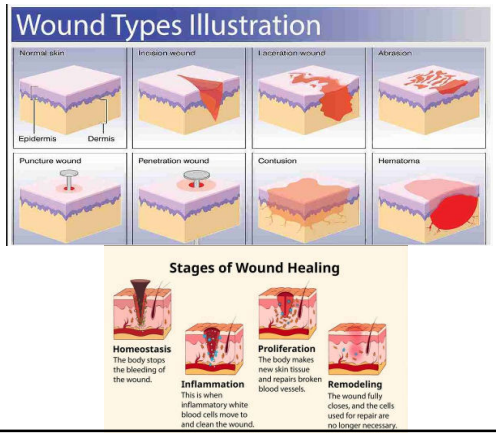
- Broken skin and exposed tissues
  - Lavage, debridement, dressing (or maybe second intention healing)
- **Closed**
  - Intact skin underlying tissue damage
    - Risk of compartment syndrome, deep infections, and necrosis!!

Wound Classification Cont.

Acute vs Chronic

- Typically <1 week old
- Respond well to standard wound management
- Good candidates for closure IF contamination is controlled (Compliance!)

- Often >2–3 weeks old
- Causes include infection, poor perfusion, foreign material, metabolic disease, or inappropriate previous care
- Often will require **advanced therapies**, repeated debridement, and addressing the underlying disease (**Use your specialty referrals!)**



Wound Healing Phases

- Inflammatory Phase
  - **Immediately after injury,** lasts **24–72 hours (Cats Vs Dogs!)**
    - Vasoconstriction → vasodilation
    - Neutrophil influx and Macrophage recruitment, Release of cytokines
- Debridement Phase
  - Overlaps Inflammation
    - Macrophages dominate
    - Exudate
    - Transition from neutrophils → macrophages → fibroblasts =**Repair Phase**
- Maturation Phase
  - The longest phase, beginning around **3 weeks post-injury** and lasting **months to years (Yes, years, yes in humans too!)**
  - Final wound strength reaches only **70–80% of original strength**
  - Excessive tension, movement, or infection during earlier phases weakens final scar quality.

Species Differences in Healing

Dogs: Rapid granulation

Cats: Slower granulation, fragile skin
- **Less granulation tissue**
- **Fewer fibroblasts early on**
- **A weaker macrophage response**

Horses: Prone to exuberant granulation tissue

Evaluation of current wound management techniques

***Consider: Advanced dressings** (foam, hydrocolloids, NPWT). Cat wounds are more likely to linger in the early phases unless something pushes them forward

*NPWT NPWT University of Florida Demo

The Veterinary Nurse (UK), 2025. "Modern wound management: NPWT in general practice

Age and Healing

- Young animals: Faster healing, higher metabolic rate
- High metabolic rate and strong inflammatory response
- Collagen turnover

Geriatric patients: Delayed healing, comorbidities

Choose non adherent bandages to protect fragile skin

Screen for underlying disease (this may alter your wound plan)

Extend your bandage change intervals only if the exudate is low. Monitor for maceration

Comorbidities Impact

- Diabetes, Cushing's, Hypothyroidism
  - **DM:** High glucose supports bacterial growth. CULTURE these
  - **Cushing's**: Excess cortisol suppresses immune response and inflammation. Watch for dehiscence
  - Hypothyroidism: Poor hair and dry skin increase wound breakdown. Slower metabolism and fibroblasts
- Kidney or Liver Disease: Toxin accumulation and impaired immune function, protein deficiency, and low albumin edema.
  - General immunosuppression (steroids, chemo) reduced neutrophils, delayed inflammation and debridement, and lots of opportunistic infections
- **Malnutrition: Correct it.**
  - Protein deficiency reduces collagen, impaired epithelization, and immune competence

Tension-relieving suture patterns

Initial Wound Management

- Control bleeding
- Clip and clean surrounding area
  - Hair is contaminated. Pack it with KY first
  - Do not clip over exposed structures such as tendons, bones, to avoid iatrogenic trauma
  - Clip generously disinfect between patients-keep blade cool
  - Avoid depilatory creams

Note: Exotics (stress!)

Hypotonic	Isotonic	Hypertonic
< 0.9%	**= 0.9%**	**> 0.9%**
• 0.45% NaCl • 0.225% NaCl • Dextrose 5% in water (D5W)*	• 0.9% NaCl (Normal saline) • Lactated ringers	• 3% NaCl • Dextrose 5% in normal saline (D5NS)



Debridement Techniques

- Surgical
- Mechanical
- Enzymatic
- Autolytic

Dressing and Topical Selection

- Primary vs. Secondary layers
  - ~~Wet to Dry~~
- Non-adherent dressings
- Absorptive materials
- Topicals





Bandaging Techniques

- Layers: Contact, intermediate, outer
  - Know when to keep wounds dry or moist
  - Stage the supplies
- Tension and placement
  - Consider the material and the anatomy
  - How would YOU feel?
- Monitoring and changing frequency
  - Compliance is key to healing



Analgesia and Pain Management

- NSAIDs, opioids, local anesthetics
- Pain scoring systems
- Multimodal approach

Antibiotic Use

- Indications for systemic vs. topical
  - **Deep or penetrating wounds** (bite wounds, punctures, degloving injuries)
  - **Wounds with cellulitis, abscessation, or spreading infection**
  - **Heavily contaminated or infected wounds**
  - **Immunocompromised patients** (diabetes, Cushing's, FIV/FeLV, chemotherapy)
  - **Wounds involving joints, thorax, abdomen, or bone**
  - **Systemic signs**: fever, lethargy, leukocytosis, tachycardia
- Culture and sensitivity
  - **Wounds not improving within 3–5 days**
  - **Recurrent or chronic wounds**
  - **Patients with systemic disease**

Advanced Wound Therapies

- Negative pressure wound therapy
- Skin grafts and flaps
- Laser therapy
- NEW FUN THINGS…



Complications



- Infection
  - Prevent it
  - Lavage, debride, dress, and inform the client
- Dehiscence
  - Minimize tension
  - Primary cause of wound failure
- Delayed healing
  - Necrotic tissue delays healing by blocking granulation tissue
- Scarring
  - MOIST!

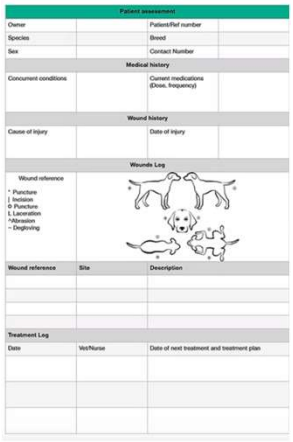
Case Example: Dog Bite Wound

- Presentation
- Management steps

Client Communication

- Setting expectations
  - Honest and upfront. Prepare them for commitment
- Home care instructions
  - DO NOT rely on verbal instructions
  - Use videos, links, and tutorials
- Follow-up and monitoring
  - Document healing –PHOTOS
  - https://www.vetnursinghub.co.uk/product-page/wound-management-document





Patient assessment			
Owner		Patient/Ref number	
Species		Breed	
Sex		Contact Number	
Medical history			
Concurrent conditions		Current medications (Dose, frequency)	
Wound history			
Cause of injury		Date of injury	
Wounds Log			
Wound reference * Puncture | Incision Ø Punchure L Laceration ^Abrasion ~ Degloving			
Wound reference	**Site**	**Description**	
Treatment Log			
Date	**Vet/Nurse**	**Date of next treatment and treatment plan**	

Integrating Natural Remedies

- Honey, Aloe, Silver sprays
- Evidence-based use

- Come to the next talk……



- Systematic approach is key
- Tailor care to species, age, and comorbidities
- Collaborate with clients on integrative care

THANK YOU!

Deborah.CC2019@Yahoo.com
ThekindVoice.com



Trinity Consultants SAFETY PARTNERS