



Wound Care

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INDIAN + COUNTRY

ECHO

LEADING THE WAY 

*Growing the Ability to Deliver Quality Healthcare to
American Indian and Alaska Native People.*

Overview




- I. Epidemiology
- II. Clinical evaluation
- III. Management
- IV. Case discussions



WOUND CARE

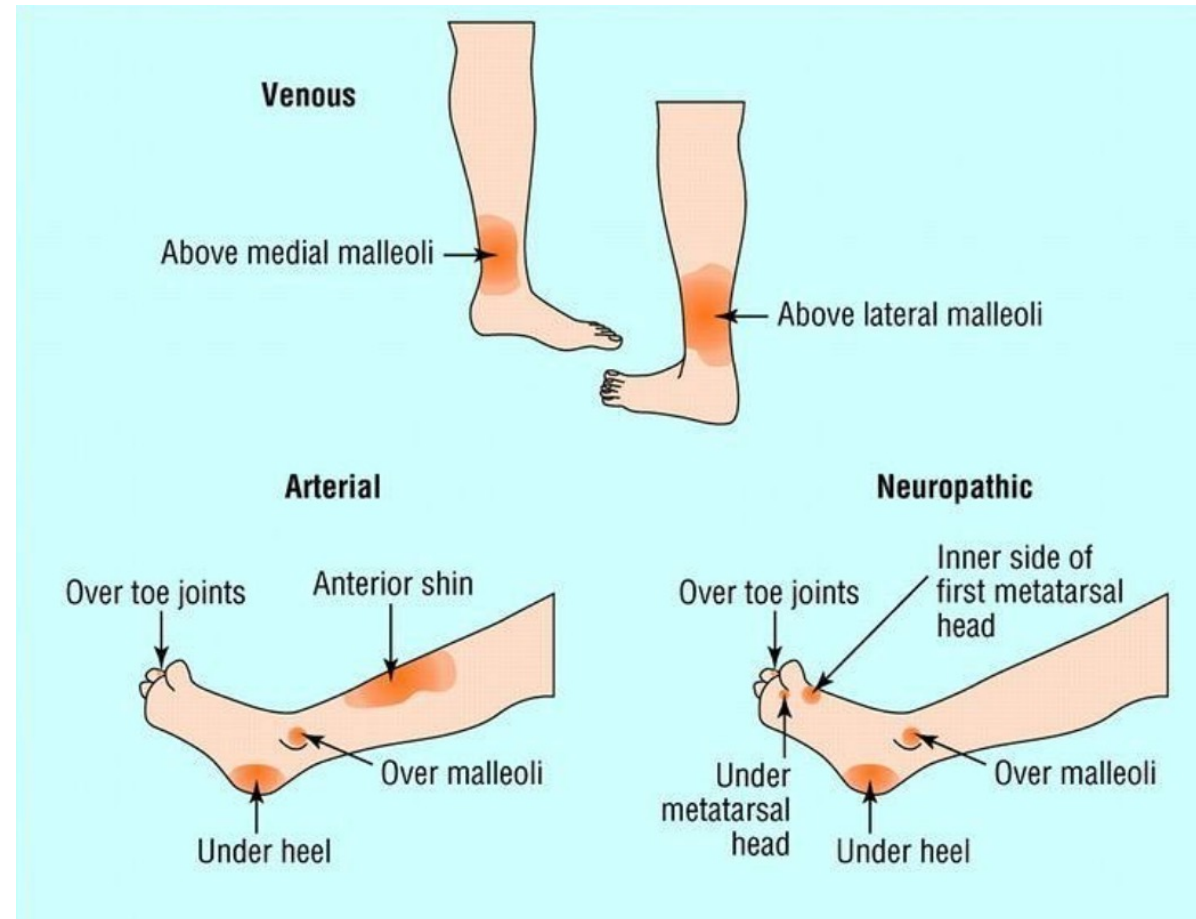
Wound Epidemiology

- ~3% of US population has a chronic wound/ulcer
 - About half of these are venous leg ulcers

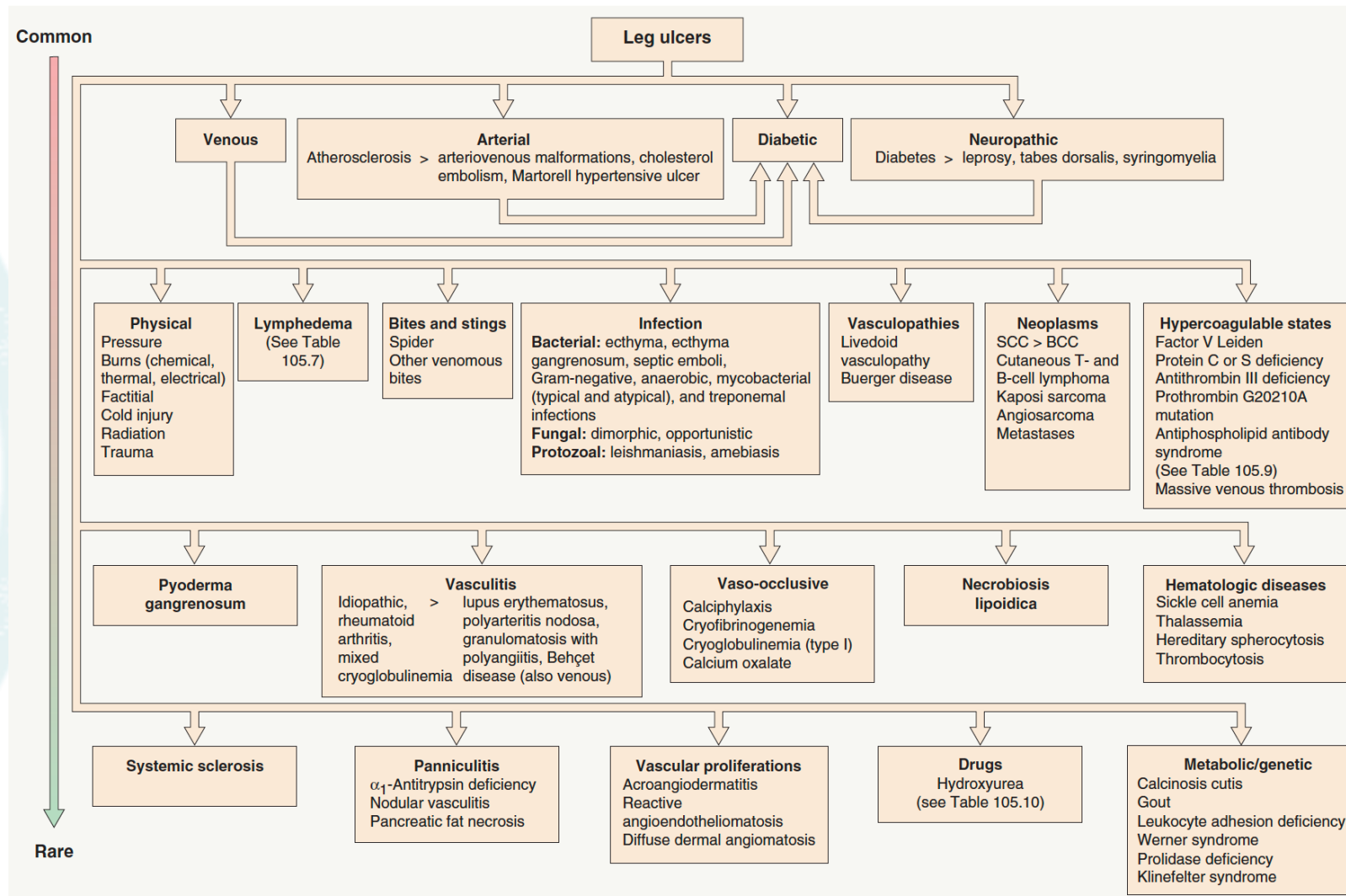
Venous	Arterial	Diabetic/Neuropathic
Most common chronic leg ulcer	PAD present in 25% of patients with leg ulcers	DM = lifetime risk 15-25% foot ulcer, 15% of which will eventuate in an amputation
Irregular borders, yellow fibrinoid base; area above medial malleolus	Well demarcated, round, punched out ulcers with dry necrotic base; distal sites	Punched out with hyperkeratotic rim, background of callused skin; pressure points and bony prominences
Varicosities and edema > lymphedema	Cool feet, weak/absent pulses, pain with leg elevation	Peripheral neuropathy, foot deformitis
Compression is mainstay of treatment	ABI to screen for PAD; surgical restoration of blood flow	Neuro examination; EMG; ABI Wound care with debridement of necrotic tissue and mechanical offloading
		

WOUND CARE

Wound Epidemiology



WOUND CARE



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Don't Miss Neoplasm



Calciophylaxis



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Evaluation

Xlyazine



Pyoderma Gangrenosum



Necrobiosis Lipoidica



WOUND CARE

Debridement

- Sharp – lidocaine + curette
- Enzymatic -
 - Collagenase
 - Cadexomer iodine
- Autolytic – any moistened bandage
 - Vasline, Manuka honey



*Goal is to remove exudate, slough, eschar, necrotic tissue, debride to healthy granulation tissue

*Do not be aggressive especially with arterial disease, calciphylaxis

*Do not debride pyoderma gangrenosum (pathergy)

WOUND CARE

Management

TYPES OF WOUND DRESSINGS			
Dressing type	Properties	Disadvantages	Indications
Gauzes	<ul style="list-style-type: none"> • Good absorption • Can be impregnated with: <ul style="list-style-type: none"> - NaCl to become highly absorbent, discourage bacterial overgrowth, and prevent formation of excess granulation tissue - petrolatum so less drying and adherent, but then less absorbent - iodine or silver as an antiseptic 	<ul style="list-style-type: none"> • Adhere to wound bed and promote desiccation • Can cause pain and trauma, including removal of epithelium, upon removal 	<ul style="list-style-type: none"> • Wet wounds with heavy exudate • May serve as a secondary dressing
Films	<ul style="list-style-type: none"> • Semi-occlusive, thin polyurethane membranes • Maintain moisture • Permeable only to vapors, not to liquids • Transparency enables wound visualization 	<ul style="list-style-type: none"> • Non-absorbent • Can cause maceration if applied to wounds with heavy exudate 	<ul style="list-style-type: none"> • Wounds with minimal exudate • As a secondary dressing
Hydrogels	<ul style="list-style-type: none"> • Maintain a moist environment • Promote autolytic debridement • Non-adhesive • Relieve pain 	<ul style="list-style-type: none"> • Can lead to maceration of skin surrounding wound if used in exudative wounds 	<ul style="list-style-type: none"> • Dry wound • Wound with minimal exudate
Hydrocolloids	<ul style="list-style-type: none"> • Adhesive, occlusive dressings that absorb exudates with the formation of hydrophilic gel • Provide a moist environment 	<ul style="list-style-type: none"> • Not suitable for wounds with heavy exudate or infected wounds • May produce a brown, malodorous exudate • May be traumatic on removal 	<ul style="list-style-type: none"> • Wounds with a mild to moderate exudate
Alginates	<ul style="list-style-type: none"> • Fibrous dressings derived from brown seaweed • Highly absorbent and require moisture to function • Ion exchange between calcium in the alginate and sodium in the wound fluid leads to the formation of a moist retentive gel • Hemostatic 	<ul style="list-style-type: none"> • May adhere to dry wounds • May leave fibrous debris in the wound • Can lead to maceration around the wound unless cut to the size of the wound bed 	<ul style="list-style-type: none"> • Wounds with a moderate to heavy exudate • Undermined or tunneling wounds
Foams (polyurethane)	<ul style="list-style-type: none"> • Good absorbance capacity • Non-traumatic upon removal • Provide thermal and shear protection 	<ul style="list-style-type: none"> • May produce malodorous drainage • Maceration around wound possible 	<ul style="list-style-type: none"> • Wounds with a moderate to heavy exudate
Collagens	<ul style="list-style-type: none"> • Collagen matrix that physically entraps MMPs and facilitates growth factor activity 	<ul style="list-style-type: none"> • Nonspecific inhibition of MMPs 	<ul style="list-style-type: none"> • Clean, non-infected, recalcitrant chronic wounds

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Types of compression

1. **Tubi grip** – 5-10 mmHg
2. **Multi-layer compression:** 30-40 mmHg
3. **Compression stocking:** 20-30 mmHg



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Wound Care Case #1

A 58 year old presents with a painful left leg ulcer x5 months

- Left leg DVT when she was 20 on OCPs
- Works on feet a lot



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Wound Care Case #1

- Type of wound?
- Treatment



WOUND CARE

Wound Care Case #1

- Venous ultrasound with reflux
- Arterial brachial index
- Neuropathic testing with monofilament



WOUND CARE

Wound Care Case #1

- No debridement or anti-microbials needed
- Step 1: Zinc oxide barrier around wound edges
- Step 2: Moist dressing



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- Step 3: Bulkier absorptive dressing



WOUND CARE

Wound Care Case #1

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- Step 2: Moist dressing
- Step 3: Bulkier absorptive dressing
- Step 4: Compression



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Wound Care Case #2

A 29F presents with several weeks of progressive right arm ulceration

- Endorses active IVDU including heroin, fentanyl



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Wound Care Case #1

- Type of wound?
- Treatment



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Wound Care Case #2

Xylazine "Tranq"

- Non-opioid used as a sedative, analgesic, and muscle relaxant in veterinary medicine.
- Partial α -2 adrenergic agonist, similar to clonidine
 - Peripheral arterial constriction
 - Sympathetic antagonist -> sedation, respiratory depression, bradycardia, and hypotension
- While used as a primary substance of abuse by some, it is more commonly found as an adulterant in the illicit drug supply.
- It has been seen to extend the effect of fentanyl, or "give it legs": adding xylazine to a hit can postpone cravings and withdrawal symptoms for twice as long as fentanyl alone.
- It is NOT a controlled substance and can be easily ordered over the internet.
- In 2021, it was found in over 90% of dope samples tested in Philadelphia

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Wound Care Case #2

- Severe skin ulceration has been noted to be a common complication of xylazine use, irrespective of route of administration and involving sites of and outside of IV injection.
- The mechanism is thought to be mediated by its direct vasoconstricting effect on local blood vessels as well as its central effects of decreased cardiac output and respiratory depression.



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Wound Care Case #2

Treatment

- Discussion often with surgery about need for debridement, infection control
- Involvement of substance use disorder team
- Wound care
- 1) Acetic acid (dilute vinegar) soaks daily, then dry pat
 - White vinegar and water 1:20; if this burns increase to 1:40
- 2) Apply zinc oxide to border of wound
- 3) Apply petroleum based dressing vs. calcium alginate based dressing
- 4) Apply abdominal pads and wrap with rolled gauze



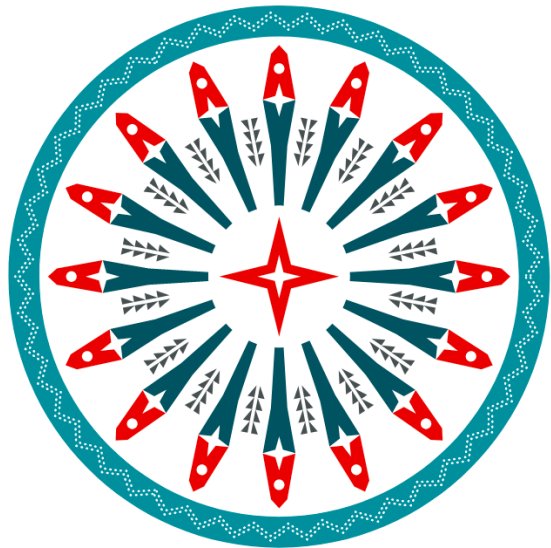
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Thank You!



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