

# Types of Leg Ulcers

- Venous Insufficiency
- Arterial
- Diabetic Neuropathic

# Venous Insufficiency

- Previously known as “stasis ulcer”
- An open lesion of the skin and subcutaneous tissue of the lower leg, usually occurring in the pretibial area of the lower leg or above the medial ankle.



V:U



# Venous Insufficiency Ulcer



# Vascular Problems

- Incompetent venous system of the legs
- Increased fibrous tissue
- Hyperpigmentation (Hemosiderin)





## Chronic stasis dermatitis

- Increased venous pressure induced by incompetent valves
- Induces inflammation



Acute stasis dermatitis



# Underlying Condition

- **Venous Insufficiency Ulcer**
  - Previous DVT & varicosities
  - Reduced mobility
  - Obesity
  - Vascular ulcers
  - Phlebitis
  - Traumatic injury
  - CHF
  - Orthopedic procedures
  - Pain reduced by elevation

# Characteristics

- **Venous Insufficiency Wound Bed**
  - Ruddy base
  - Usually shallow
  - Moderate to heavy exudate
  - Granulation tissue frequently present

# Characteristics

- **Venous Insufficiency Ulcer**
  - **Ulcer edges: irregular**
  - **Shape: irregular**
  - **Surrounding tissue: erythema and /or brown staining**
  - **Location: Medial aspect of lower leg and ankle, superior to medial malleolus**



# Perfusion

- **Venous Insufficiency Ulcer**
  - **Pain:** minimal unless infected or desiccated
  - **Peripheral pulses:** present/palpable
  - **Capillary refill:** normal-less than 3 seconds



# Treatment

## Improve Venous Return By:

- Surgical obliteration of damaged veins
- Elevation of legs
- Compression therapy to provide at least 30mm hg compression @ ankle
  - Example: Unna boot or therapeutic support stockings

# Topical Therapy

- Venous Insufficiency Ulcer
  - Absorb exudate
  - Maintain moist wound surface

# Arterial Ulcer

- Is an ulceration that occurs as the result of arterial occlusive disease when non-pressure related disruption or blockage of the arterial blood flow to an area causes tissue necrosis.

# Arterial Ulcer





# Underlying Condition

- **Arterial Ulcer**
  - Diabetes
  - Anemia
  - Arthritis
  - Increased pain with activity and/or elevation
  - CVA
  - Smoking
  - Intermittent claudication
  - Traumatic injury to extremity

# Underlying Condition

- **Arterial Ulcer continued**
  - Vascular procedures/surgeries
  - Hypertension
  - Hyperlipidemia
  - Arterial disease

# Characteristics



- **Arterial Ulcer Wound Bed**
  - Base of wound, pale/pallor on elevation; dependent rubor
  - Deep
  - Minimal exudate
  - Granulation tissue rarely present
  - Necrosis, eschar, gangrene may be present

# Characteristics

- **Arterial Ulcer**

- **Ulcer edges: even**
- **Shape: round**
- **Surrounding tissue: skinny, taut, thin, dry, hair loss of lower extremities, atrophy of subcutaneous tissue**
- **Location: Toe tips or web spaces, phalangeal heads around lateral malleolus**



# Perfusion

- Arterial Ulcer

- Pain: intermittent claudication, resting, positional, nocturnal
- Peripheral pulses: absent or diminished
- Capillary refill: delayed-more than 3 seconds, ABI < 0.8

# Treatment

## Improve Tissue Perfusion By:

- Revascularization if possible
- Medications to improve RBC transit through narrowed vessels
- Lifestyle changes (ex. no tobacco or caffeine)
- Improve hydration
- Appropriate footwear to prevent trauma

# Topical Therapy

- **Arterial Ulcer**

- **Uninfected wound: keep dry**
- **Infected wound: immediate referral for surgical debridement/ aggressive antibiotic therapy**
- **Open: Moist wound healing, non-occlusive dressing or cautious use of occlusive dressings, aggressive treatment of any infection**

# Diabetic Neuropathic Ulcer

- Characteristically occurs on the foot e.g. at mid-foot, at the ball of the foot over the metatarsal heads, or on the tops of toes with Charcot deformity.
- Requires that the resident be diagnosed with diabetes mellitus and have peripheral neuropathy.

# Diabetic Neuropathic Ulcer



# Underlying Condition

- **Diabetic neuropathic ulcer**
  - Diabetes
  - Spinal cord injury
  - Hansen's disease
  - Relief of pain with ambulation
  - Parasthesia of extremities

# Characteristics

- **Diabetic Neuropathic Ulcer Wound Bed**
  - Variable depth
  - Variable exudate
  - Granulation tissue frequently present
  - Gangrene uncommon, necrotic tissue variable



# Characteristics

- **Diabetic Neuropathic Ulcer**
  - Ulcer edges: well defined
  - Shape: variable
  - Surrounding tissue: normal skin tones, fissuring and/or callus formation
  - Location: Plantar aspect of foot, metatarsal heads, heels



# Perfusion

- **Diabetic Neuropathic Ulcer**
  - Pain: diminished sensitivity to touch
  - Peripheral pulses: palpable/present
  - Capillary refill: normal

# Treatment

## Measures to eliminate trauma

- Appropriate footwear
- “Offloading” for plantar ulcers
- Tight glucose control
- Aggressive infection control

# Topical Therapy

- **Diabetic Neuropathic Ulcers**
  - Cautious use of occlusive dressings
  - Dressing to absorb exudate/keep surface moist

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