# Wound Care Highlights for Primary Care Physicians

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# Overview

- Primary Care Perspective
- Pressure Ulcers
- Arterial Ulcers
- Venous Stasis Ulcers
- Diabetic Foot Ulcers
- Wound Care Potpourri
  - Culture, Nutrition, Palliative Care, Documentation, Products

### **Pressure Ulcer Heel**



# Question

What classification of pressure ulcer is represented in the picture?

- A. Stage I
- B. Stage III
- C. Stage IV
- D. Suspected deep tissue injury (sDTI)



# Stats of Pressure Injuries

- \$10 Billion per year
- Stage IV ulceration can cost up to \$125K per episode to treat
- Over 1 million people per year are affected

### **Pressure Ulcers**

- Common with patients who have passed through the transition of care
- Common in the elderly and frail
- Bony Prominences
  - Sacrum, coccyx, heels, spine
- Definitions
  - National Pressure Ulcer Advisory Panel
  - www.npuap.org

#### **Pressure Ulcers**

# Pressure ulcers are due to the effects of pressure forces on the skin

Therefore, the treatment is to mitigate the pressure!

### **Arterial Ulcerations**



### **Distal Arterial Ulcer Great Toe**



# **Arterial Ulcerations**

- Usually distal in the feet
- Comorbidity with any of the atherosclerotic diseases including diabetes mellitus
- Assessment of the arterial tree
- Vascular surgeon referral
- Critical Limb Ischemia

### **Arterial Ulcerations**

Arterial ulcerations are due to poor blood supply to the lower extremities

The treatment is to fix that problem

### **Diabetic Neuropathic Ulcer**



# **Question**?

A patient presents with a diabetic neuropathic ulcer on the plantar surface of the left foot. What is the most effective method to redistribute pressure?

- A. A post-operative surgical shoe
- B. A boot
- C. A total contact cast
- D. Crutches or knee walker

# **Diabetic Neuropathic Ulcers**

- Neuropathy, pressure, arterial insufficiency
- Goal is to offload the the ulcer by redistributing pressure across the entire plantar surface
- Do not delay
- Amputation Prevention
- Total Contact Cast

# **Total Contact Cast**

 The "gold standard" for diabetic foot wounds providing wound closure more quickly in neuropathic or non-compliant patients.



### Diabetic Ulceration Plantar First Metatarsal Head



#### **Diabetic Ulceration Three Weeks Later**



### **Diabetic Neuropathic Ulcers**

Multifactorial wounds due to neurological changes in the plantar surfaces of the foot of the diabetic often with comorbid atherosclerotic, infectious, and pressure related diseases.

The treatment is to redistribute the pressure over the entire plantar surface for rapid healing.

### **Venous Stasis Ulcerations**



# Lipodermatosclerosis



### **The Problem**



# **Venous Stasis Ulcerations**

- Most common ulceration of the lower extremities
- Compression is the treatment
- Common sense is your guide
- Make sure that the arteries are okay to compress
- Do not order stockings until the lower extremities are compressed adequately
- Surgical options

# **Compression Mistakes**

- Order stockings that are too difficult to don or doff
- Order the prescription strength stockings on the first visit
- Do not stress the importance of compression clear enough
- Working with patient preferences
- Reading too many books

# Question

67 year old female presents with a venous stasis ulceration. Choose the best answer:

- 1. Initiate compression at 30-40 mg Hg pressure
- 2. Further assessment of the arterial blood flow is required
- 3. No compression until the ulceration is 50% healed
- 4. Culture and treat the infected ulceration first before compression

### **Tubular System**



### **Tubular Measurements**

Size	Low pressure circumference	Medium pressure circumference	High pressure circumference
A	_	10–12.5 cm/3.9–4.9 in	12.5–15 cm/4.9–5.9 in
в	10–12.5 cm/3.9–4.9 in	12.5–15 cm/4.9–5.9 in	15-24.5 cm/5.9-9.6 in
С	13.5–15 cm/5.3–5.9 in	15-24.5 cm/5.9-9.6 in	24.5-35.5 cm/9.6-14 in
D	15-24.5 cm/5.9-9.6 in	24.5-35.5 cm/9.6-14 in	35.5-45 cm/14-17.7 in
E	24.5-35.5 cm/9.6-14 in	35.5-45 cm/14-17.7 in	45–50.4 cm/17. <mark>7–19.8 in</mark>
F	<mark>35.5–45</mark> cm/14–17.7 in	45-50.4 cm/17.7-19.8 in	50.4-60.7 cm/19.8-23.9 in
G	45-50.4 cm/17.7-19.8 in	50.4-60.7 cm/19.8-23.9 in	60.7–70.3 cm/23.9– <mark>27.7 in</mark>
J	60.7-70.3 cm/23.9-27.7 in	70.3-75.5 cm/27.7-29.7 in	-
K	70.3-75.5 cm/27.7-29.7 in	-	-

# **Tubular Administration**



# **Tubular Administration**



### **Initial Presentation**



#### After Three Weeks of Gradual Compression



#### **Improper Application of Compression**



#### **Improper Application of Compression**



### **Venous Insufficiency Ulcerations**

Venous insufficiency ulcerations are due to incompetent valves in the venous system, resulting in increased pressures in the lower extremities.

The treatment is effective compression.

# **Chronic Wounds**

- Chronic wounds can transform into malignancies
- Marjolin's Ulcer
  - Squamous cell cancer in a previous chronic wound
  - 2% of prior burn sites will have a transformation
- Biopsy chronic wounds especially if they are giving you a history of a wound without other risk factors (diabetes mellitus, atherosclerosis, venous stasis, etc.)

# Culture

- What are you trying to accomplish: every wound probably has bacteria on it
- Do not just swab a wound
- After debridement, after washing
- Levine technique is a standard method of obtaining the culture
- Tissue culture is best

# Levine Technique



### Documentation

- Monitoring what you do is important
  - Size (Surface area and volume)
  - Description of the wound in plain English
    - Color, Odor, Structures, Location, Drainage, Pain
- What goals are you trying to accomplish?
  - Aggressive
  - Palliative
- Diabetic Patients
  - Monitoring is very important

# Measurement of Wounds

- ARE NOT simply the longest and widest portion of the wound!
- Length
  - The head is at 12 o'clock
  - The feet are at 6 o'clock
  - Place ruler over the wound measuring at the longest length
- Width
  - Measured perpendicular to the length measurement and record the widest width

# Minimize Variability

- Everyone and anything that touches the wound will affect the outcome
- Scheduled appointments
- Consistent descriptions of the wound
- Measure the wound the same

# Nutrition

• Yes

Protein is the single best recommendation that you can make

- No
  - Vitamin C
  - Zinc
  - Anabolic steroids like Oxandrolone
  - No Megace

### **Product Choices**



# Products

- 4000+ products on the market
- Wound care ≠ special, magical products
- Wound care = correcting pathophysiology
- Limit products
  - Very expensive for primary care physicians
  - Confusing

# Do Not Poison the Wound

- Hydrogen Peroxide
- Povidone-Iodine Solution (Betadine<sup>®</sup>)
- Bleach
- Letting the wound dry out
- No Wet to Dry dressings

# Goals

- The standard of care is ....
  - Days to healing (average is 65 days)
  - Cost of care
  - Control of symptoms
- Limit instructions
  - Diabetic Foot Ulceration
    - Home health, weekly visits, antibiotics, arterial study, Orthotist, blood work, monitoring blood sugars, more specialists...(and many patients are on dialysis too)

### **Palliative Care**

- Intelligent assessment of resources (psychosocial, medical and technical) to heal the wound
  - Elderly patients with multiple comorbidities
  - Paraplegic patients who have gone through flap surgeries
  - End-stage cancer patients with skin manifestations due to their disease or wounds as a comorbid event

### **Breast Cancer Initial**



### **Breast Cancer Week One**



# **Goals for Palliation**

- Pain
- Odor
- Simplify the dressings
- Minimize the visits

### Post Hospital Patient with Fasciitis



# After 15 Months Usual Care



# Lower Extremity Wounds

- Types of Wounds
  - Venous
  - Arterial
  - Diabetic
  - Trauma injury with any of the above
- Assess the Arterial tree

# Wound Care is Resource Intensive

- Home Health
- Wound nurses in hospital
- Wound centers
- Infusion Centers (hospital or free-standing)
  - Intravenous antibiotics
- Specialists
  - Podiatrists, Plastic Surgeons, Vascular Surgeons, Interventionalists (Cardiologists, Radiologists)

### Beware of the Patient

- Decline recommendations
- Sometimes they take steps that are very unique and detrimental

### They Cut their Own Shoes



### Visits to the Hardware Store



#### The Use of Antique Salves



# Review

- Presented an overview of many types of wounds that you will see in primary care
- It's not about the dressings; it is about the underlying etiology of the wound
- Know your community resources
- Know when to refer out
- Understand that in the primary care office or in the skilled nursing facility, optimal wound care cannot always be delivered

### **Contact Information**

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