Wound Care Highlights for Primary Care Physicians

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The 24th Annual Southwestern Conference on Medicine
Tucson, Arizona
Overview

• Primary Care Perspective
• Pressure Ulcers
• Arterial Ulcers
• Venous Stasis Ulcers
• Diabetic Foot Ulcers
• Wound Care Potpourri
  – Culture, Nutrition, Palliative Care, Documentation, Products
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)
Pressure Ulcer Buttock Stage IV
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
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 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

<table>
<thead>
<tr>
<th>Size</th>
<th>Low pressure circumference</th>
<th>Medium pressure circumference</th>
<th>High pressure circumference</th>
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<tr>
<td>A</td>
<td>-</td>
<td>10–12.5 cm/3.9–4.9 in</td>
<td>12.5–15 cm/4.9–5.9 in</td>
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<tr>
<td>B</td>
<td>10–12.5 cm/3.9–4.9 in</td>
<td>12.5–15 cm/4.9–5.9 in</td>
<td>15–24.5 cm/5.9–9.6 in</td>
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<td>C</td>
<td>13.5–15 cm/5.3–5.9 in</td>
<td>15–24.5 cm/5.9–9.6 in</td>
<td>24.5–35.5 cm/9.6–14 in</td>
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<td>D</td>
<td>15–24.5 cm/5.9–9.6 in</td>
<td>24.5–35.5 cm/9.6–14 in</td>
<td>35.5–45 cm/14–17.7 in</td>
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<td>E</td>
<td>24.5–35.5 cm/9.6–14 in</td>
<td>35.5–45 cm/14–17.7 in</td>
<td>45–50.4 cm/17.7–19.8 in</td>
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<td>F</td>
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<td>G</td>
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<td>50.4–60.7 cm/19.8–23.9 in</td>
<td>60.7–70.3 cm/23.9–27.7 in</td>
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<td>J</td>
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<td>-</td>
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<td>K</td>
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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®)
- 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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