

Non-Healing Wounds

Assumptions

The student understands the fundamental principles of wound healing as well as the physiologic sequelae of diabetes, malnutrition, ischemia, and immunosuppression.

Goal

The student will be able to identify and evaluate factors contributing to non-healing wounds and to apply preventive and therapeutic strategies when treating non-healing wounds.

Objectives

By the end of the clerkship, the student will be able to:

1. Evaluate and identify the contributing factors to non-healing wounds:
 - a. Ischemic (arterial and venous insufficiency, pressure-induced)
 - b. Metabolic (diabetes, malnutrition)
 - c. Inflammatory (infectious, foreign body, moisture exposure)
 - d. Immunosuppression (steroids, chemotherapeutic agents)
 - e. Neoplastic
2. Describe the prevention and treatment strategy of non-healing wounds.
3. Point out the importance of appropriate and frequent wound examination.
4. Describe the basic principles of wound care and frequently used wound dressings.

Problems

For each of the cases below, answer the following questions:

- What further information should be obtained from the history and physical examination?
 - What is the underlying pathophysiology of non-healing wound?
 - What diagnostic tests should be performed?
 - What treatments would you recommend?
 - How can this be prevented?
1. You have been asked to evaluate a 75-year-old diabetic gentleman who has a 2 cm ulcer on the sole of his left foot at the level of the metatarsal heads. He has 4+ femoral pulses bilaterally, palpable popliteal pulses, but no palpable pulses below the knee.
 2. You are consulting on a 40-year-old paraplegic man with a persistent draining ulcer over the sacrum. The ulcer has been present for 3 months and does not seem to be getting smaller.
 3. A 70-year-old woman comes to your office with a wound on her right leg, since she bumped it on a chair one month ago. It is located just below her medial malleolus and is slowly enlarging but not painful. Her surrounding skin is brawny and her leg aches when she stands for long periods of time.

Non-Healing Wounds (continued)

Teaching Hints

1. Emphasize the importance of understanding and addressing the underlying pathophysiology of non-healing wounds.
2. Emphasize that addressing medical comorbidities and preventative measures may be more important than surgical debridement.
3. Discuss the importance of wound location for identifying of the underlying pathophysiology of non-healing wounds.
4. Discuss the impact of nutrition, edema, bacterial contamination, adequate blood supply and prior radiation on wound healing.
5. Emphasize the importance of multidisciplinary approach to patients with chronic non-healing wounds (wound care nurses, critical care nurses, dieticians, surgeons, primary care physicians, etc.).
6. Describe the stimulating effect of the wound V.A.C system and its application.
7. Discuss the role of hyperbaric oxygen therapy.

Prevention

1. Identify patients who are at risk for non-healing wounds.
2. Describe patient and physician initiated strategies to prevent non-healing wounds.

Special Considerations

Discuss non-healing wounds related to:

1. Infected surgical mesh
2. Marjolin's ulcer