

MY EXPERIENCES IN A MULTI-DISCIPLINARY WOUND CENTER

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INTRODUCTION

Having been in practice for 20 years I was a little apprehensive about becoming a part of a wound center. Although I had many years of experience in treating wounds in the office I was many years removed from my didactic education. I began to read a multitude of articles on wound care, especially wound products. The science and understanding of wound physiology has made huge strides in past decade. There are over 2,000 wound products that have received FDA approval for safety and are utilized in wound care. How could I chose the correct product for my patient? I have attended multiple lectures and dinner meetings dealing with wound care, but all seem biased toward the product being promoted. The following represents my opinions based on experience. I am not sponsored by any pharmaceutical company. I have found that with all the new products, information, and modalities, the basics of wound care have not changed and newer technologies add significantly to the cost but not always to the benefit of the patient.

TENENTS OF WOUND CARE

Develop a Treatment Algorithm.

Several algorithms have been published. You may use those or develop your own. It is important to treat all your patients the same and to do it consistently. This helps the practitioner gain a better understanding of which therapies are effective and which are not. Neither the physician nor the patient benefits from haphazard treatments. In addition to an algorithm, have a flow sheet to help keep track of all treatments, and tests, etc.

Keep the Wound Clean

This is primarily performed through sharp debridement with a scalpel, tissue nipper, and sharp

curette. I like to see all tissues bleeding post debridement if the patient has no vascular compromise. Although it seems intuitive to debride macerated and necrotic tissue from a wound, there are no studies clearly documenting its effectiveness in wound healing. Therefore, while I debride aggressively, I do not always debride too frequently. I will typically debride smaller wounds more often to prevent premature superficial closure than I will larger wounds. Debriding wounds frequently and aggressively keeps it in the inflammatory phase of healing, which allows for little proliferation or maturation of tissue.

Wounds are secondarily kept clean with topical antibiotics. The most commonly used are the silver ions, which are antimicrobial, but show no toxicity to new skin growth. There are many silver products available, with silver sulfadiazine creams being the least expensive. Although iodine is tissue toxic, Iodosorb gel and flex sheets will release iodine slowly and do not seem to impair wound healing. I will use this in areas of moderate drainage due to its absorptive ability.

Bioburden

Closely related to cleanliness is bacterial growth. The greater the degree of necrosis, the larger amount of bacterial growth. We assume all open wounds are contaminated, but unless the growth is greater than 10 to the 6th/ccs of tissue, no action needs to be take. Unfortunately, most labs do not do quantitative microbiology.

I find taking frequent cultures to be helpful, not to look for an infection, but to use as a marker for wound cleanliness. Wounds that constantly culture heavy growth of bacteria are not being treated adequately, and require more frequent and aggressive debridements, topical, or even oral antibiotics. These wound should also be monitored for occult osteomyelitis.

Edema

Reduction of swelling is as important as debridement in obtaining wound healing. Excessive fluid not only physically keeps wounds from healing, but the extracellular fluid reduces the transport of nutrients and cells to the ulcerated area.

Check Pulses

It is very easy to overlook checking pulses. A foot may be warm and pink or the patient has been in the office in the past and this part of the examination gets overlooked in subsequent visits. The quality of the pulse is equally important. One person may palpate a pulse and another not. One rule I now follow is a pulse that is weak or difficult to palpate is considered to be nonpalpable and the patient is sent for arterial Doppler examination. This is important to the health of the wound and the patient. It has been demonstrated that an ankle brachial index of <0.9 and >1.2 is an early and independent risk factor for predicting cardiovascular disease.

Moisture Balance

It is important to keep the proper amount of moisture in the wound. If the wound desiccates and an eschar forms, epithelialization will be dramatically impaired. Minimally draining wounds can be helped with occlusive or hydrogel dressings, (i.e., Amerigel) and a dsd. An excessively moist, macerated wound also has reduced potential for healing. For wounds with increased drainage, frequent dressing changes or absorptive materials can be utilized. One of the most useful new technologies I have found for moisture control and to increase granulation tissue is the Wound Vac.

Offloading

We have a pedorthist/orthotist in our wound center. Despite all the padding, and shoes, etc., it has proven nearly impossible to offload plantar neuropathic ulcers. CAM walkers, which have been shown to be comparable to total contact casting, are usually removed by the patient. Applying a roll of casting tape to keep the walker in place appears effective.

Currently, the most effective means of offloading the forefoot is by tendo-Achilles lengthening. It effectively heals chronic forefoot ulcers, but the long-term results are not known. I have noted that patients will increase weight on their heel, with edema and callusing commonly seen. Therefore this procedure is not indicated for heel ulcerations.

Biologics

There are multiple products from growth factors to skin equivalents that have been demonstrated effective in obtaining early wound closure. For these to be effective the wound must be at optimum environment for healing. These products work best on surgical wounds and ankle stasis wounds. Use with caution in plantar neuropathic ulcers unless you can completely offload the area for several months.

Most of the newer products are not considered drugs and not covered by prescription plans. Some insurance plans do have coverage, but often the patient has to pay initially, and later get reimbursed. DMERC will cover many of the products and some physicians prefer to dispense these out of their offices.