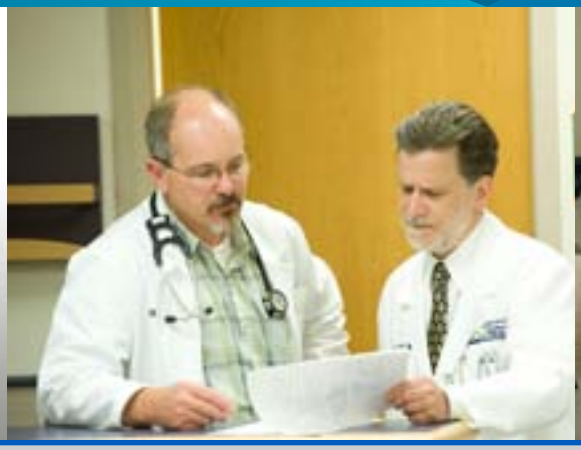
Innovations in Wound Healing Therapy

"Where Wounds Go To Heal"SM



Suitable Wound Environment for Healing

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Abstract

There are usually multiple factors that interfere with the bodies ability to heal. An example of a typical non-healing wound would be a diabetic foot ulcer. The factors that interfere with the ability to heal this type of wound include infection, trauma from constantly walking on the ulcer, elevated blood sugars which interfere with white blood cell function and hypoxia from small vessel disease. The more of these factors that we correct, the more likely that the ulcer will heal. But if we fail to maintain a healthy wound environment that will allow the growth of new cells to fill the wound, then the treatment will fail. The following case is an example of this.

Case Study

This is a 76 year old insulin dependent diabetic who developed gangrene of his left 2nd and 3rd toes. He had vascular work up which revealed inoperable distal small vessel disease. The involved toes were amputated. His wound failed to heal, which lead to a failed transmetatarsal amputation. He received local wound care, which included various types of dressings, local debridements and multiple antibiotics. He also received 30 hyperbaric oxygen treatments at another facility. Despite these measures his wound failed to heal.

He presented to our facility with a necrotic non-healing transmetatarsal amputation.

Before Treatment

He was a nonsmoker and his medical problems included diabetes, hypertension and dyslipidemia, which were all controlled. Transcutaneous oximetry (TcpO2) revealed that the flap was hypoxic. There was no sign of active infection but the wound was filled with necrotic tissue. Most of the factors that were inhibiting this patients ability to heal had been corrected.

The two remaining factors preventing wound healing were:

1. The persistent hypoxia in the plantar flap and most importantly

2. The necrotic tissue filling the wound.

There was no question that the patient required additional hyperbaric oxygen therapy to promote angiogenesis, the growth of healthy granulation tissue and the mitosis and migration of epithelial cells to cover the wound. However, this cannot occur in a bed of dead necrotic tissue. These new cells require a healthy wound bed for healing to take place.

The patients necrotic wound was initially surgically debrided and hyperbaric oxygen therapy was reinstituted.

During Treatment

Enzymatic debridement was continued during the course of hyperbaric oxygen therapy. Healthy granulation filled in the wound bed and new skin formed decreasing the size of the wound.

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During Treatment

Once his transcutaneous oximetry studies returned to normal, the hyperbaric treatments were discontinued. After all the debris was removed, the enzymatic debriding agents were stopped and the healthy granulation was kept moist with a hydrogel. His wound went on to heal completely and a below knee amputation was avoided.

After Treatment

He was fitted with molded shoes with an insert and is now playing golf.

Lifestyle

Conclusion

The key to success in this case was creating and maintaining a healthy wound environment.

THE PRIMARY CARE PHYSICIAN SHOULD REFER THE PATIENT FOR ADVANCED WOUND CARE IN A WOUND HEALING CENTER IF THE PATIENT:

- Has a wound that persists for more than 30 days after treatment
- Has a wound and Reynaud's phenomenon
- Has purpura
- Has a wound and hypertension
- Has gangrene or necrotic tissue in a wound
- Has a wound and diabetes

About Precision Health Care

Precision Health Care is a comprehensive wound healing and hyperbaric medicine service organization dedicated to the development of state-of-the-art hyperbaric and wound healing centers through partnership and collaboration with our affiliate hospitals.

Community-based and patient-focused, we are driven by this mission philosophy: To provide select hospitals safe, comprehensive, compassionate wound healing and hyperbaric services for patients in need.

Questions or Comments?

Contact us:
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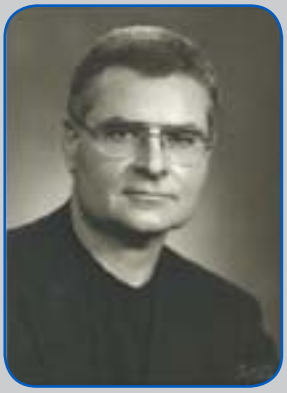
About the Author



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