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**CASE STUDY:**  
**A UNIQUE APPLICATION OF PORTABLE NEGATIVE  
PRESSURE WOUND THERAPY: COMBINATION OF  
ADAPTIVE DRESSINGS ON A DEEPER-DEPTH WOUND**

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With assistance from:  
The Wound Vac Company and  
Pensar Medical

# A Unique Application of Portable Negative Pressure Wound Therapy: Combination of Adaptive Dressings on a Deeper-Depth Wound

Plastic surgeons have long used negative pressure wound therapy (NPWT) for complex open wounds. However, transitioning patients from traditional, large control units has been challenging when wounds contract to the point that large devices become inconvenient. Patients often struggle with wet-to-dry dressings or other topical wound care options at home due to fear and inexperience.

This case study demonstrates the use of externally applied negative pressure wound therapy for a patient with an intermediate depth wound using a new, mini-portable control unit as an alternative to topical therapies.

## The case

The patient is a 44-year-old obese female smoker, who presented with surgical wound dehiscence after abdominoplasty. Ischemia and soft tissue necrosis ensued, requiring debridement and placement of a negative pressure wound therapy device.

The patient was initially treated with a standard-size, traditional control unit (in this case, a WoundPro™ unit from Pensar Medical). However, after nine days and a significant reduction in the size and exudate of the dehisced wound, the full-size control unit became bulky, and the patient was frustrated. She wanted to transition to a more acceptable level of wound care so that she could return to work.

Dr. Rosen approached Scott Bergquist from The Wound Vac Company and the team from Pensar Medical, the manufacturers and suppliers of the WoundPro™ control unit. They suggested the use of a newly-released, tiny, portable negative pressure unit called the Alaira™ that works in combination with a self-adaptive dressing.

## About the Alaira™ unit and Enluxtra dressings

The Alaira™ was designed by Pensar Medical for use as a portable, single-patient-use negative pressure wound therapy unit. The system is small enough to fit in a pocket or purse and provides negative pressure therapy during a patient's routine, day-to-day activities.

***Note:** At this time, there are two portable, single-patient-use negative pressure wound therapy units that have been developed by Pensar Medical: The PocketDoc™ and the Alaira™. The only difference between these two units is the battery used to provide power. The Alaira™ is large enough to hold two AA batteries, which can be changed as needed to provide power for as long as is required for patient healing. The PocketDoc™ uses disposable batteries; therefore, the unit is designed as a truly “disposable” unit.*

Unlike traditional control units, this device requires no canister for exudate – instead, it combines the continuous suction of negative pressure with Enluxtra™ Self-Adaptive dressings. The dressings maintain the moist environment that healing wounds need while providing superior absorption of any excess fluid.

Initially, there was some concern about transitioning the patient to the Alaira™ unit because the smaller wound was still fairly deep and went down to the fascia (see photos below). Dr. Rosen decided to use the Alaira™ at a pressure level of 125 mmHg and pack the wound with a very small piece of sponge foam underneath the adaptive dressing to wick away fluid from the wound bed.

This process was a success: After ten days, foam packing of the wound was no longer necessary, and the injury was reduced to a size small enough for Dr. Rosen to close the wound primarily and complete treatment (see photos below).

## Results and potential implications of the Alaira™ unit for outpatient treatment

Both the surgeon and patient were extremely pleased with the ease of use and the success of the Alaira™ unit in healing the wound.

Dr. Rosen noted, “The development of this smaller unit is a great boon for everyone. Unlike wet-to-dry dressings, which use positive pressure, this hybrid technique maintains an appropriate milieu for wound coverage combined with negative pressure to enhance wound contraction. While wound coverage is important to maintain the proper environment for healing, speeding wound contraction with negative pressure accelerates the healing process.”

He also stressed the value of this negative pressure unit for outpatient care, which is much different than inpatient care. In a clinical environment, wounds are dressed and monitored by trained healthcare professionals, but patients dealing with wounds as outpatients at home often have trouble with wet-to-dry bandages, salves or topical creams. Patients often have fears about bleeding, wound drainage, unsightly appearance and unpleasant odors. They do not have the clinical expertise to know when wounds “look right” or have early signs of infection. It is challenging to teach patients precisely what needs to be done.

## Conclusion

In short, the unit improved patient compliance – it was easy to use, the patient liked the technology, and it took the guesswork out of the process. All the patient needed to do was let the device and the adaptive dressings do their job.

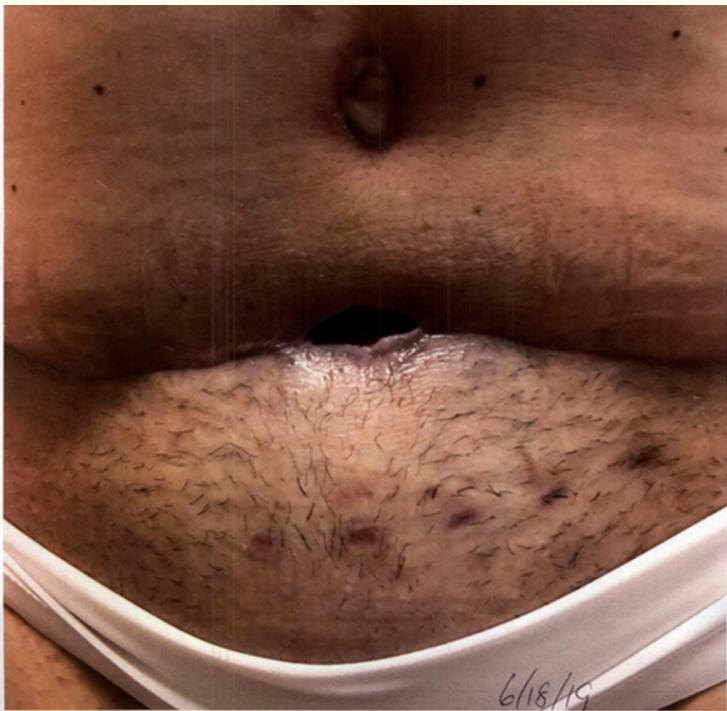
According to Dr. Rosen, the Alaira™ is positioned to fill a large gap in the marketplace between deep, acute or chronic wounds and superficial wounds. The portable unit expedited the healing of the superficial wound, was cost-effective and led to an earlier return to work for the patient.

Dr. Rosen states, “This tiny, portable high-tech unit is our missing link in transitioning patients who need negative pressure therapy but have wounds that are too small for large, bulky, noisy units. The Alaira™ is as easy as carrying a smartphone in your pocket and compatible with our modern, active lifestyles.”

## Appendix: Patient progress images



Patient on 5/6/19



Patient on 6/18/19



Patient on 8/27/19



**ENLUXTRA™**

**POCKETDOC™**  
Micro Wound-Healing System

# Negative Pressure Wound Therapy with Enluxtra Self Adaptive Dressing

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# Wound Presentation Day 1

- Patient profile:
  - Peripheral arterial disease
  - Venous leg ulcer
    - Vascular intervention with stent placement (post op 5 months)
  - Diabetic type I with insulin pump
  - Cirrhosis of the liver
  - Patient unable to quit smoking
    - Intake of 1-2 bags of pipe tobacco vs. cigarettes
  - Male, age 62 years old
  - Wound size
    - 10.5 x 6.0 x 0.5cm
- Patient was deemed to be a suitable candidate for Enluxtra™ dressing with NPWT
  - Recommended to run for 7 days
  - Dressing change to be performed when strikethrough reached dressing edge
  - Dressings to be changed once a week thereafter



# Post Debridement



Exposed Bone

# Dressing Protocol

- NPWT Drape placed and sealed around Enluxtra to cover the wound
  - 10-12 holes created with 18 gauge needle using Enluxtra “star” as the “perforation template”
- NPWT Suction Port placed over the selected “star” with perforations



# Dressing Completed

NPWT Control Unit  
programmed to -50 mmHg  
of pressure



# PocketDoc Running at -50 mmHg



You can clearly see the effect of the negative pressure causing the Enluxtra dressing to fill the void in the wound bed.

- Patient was cognizant that negative pressure therapy was applied (as he felt and saw the effects on the Enluxtra dressing)
- But no pain was associated with the therapy

# Difference After First Dressing Change



9/21/16

Epithelialization at wound edges

Flattening of the wound bed to wound edges

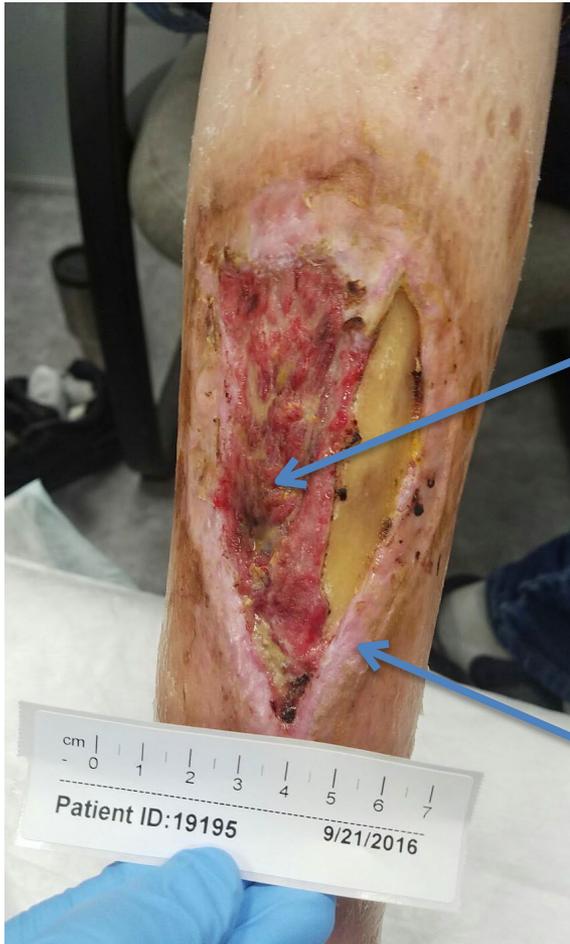
Hypergranulation; tissue improved and resolved

Epithelialization at wound edges



9/23/16 Two Days Later

# Difference after One Week



9/21/16

Depth of wound significantly reduced; more uniform in appearance

Continued epithelialization at the wound edges



9/28/16

## Notes:

- Patient noted a dramatic reduction of pain in the wound (1 in 1-10 scale)
- Absence of wound odor

# Continued Progress



9/21/16



9/30/16

# Lower leg shots 9/28



# Lower leg Shots 11/2

