

# Treatment of challenging leg ulcers using unique super-absorbent silicone foam dressing, in combination with a multi-layer compression bandage system

AUTHOR: KAZU SUZUKI, DPM CWS • DEPARTMENT OF SURGERY, CEDARS-SINAI MEDICAL CENTER, LOS ANGELES, CA USA

## Introduction

There are thousands of wound dressings available today, and the dressing selection is one of the major challenges in wound care. Sheffield et al.<sup>(1)</sup> suggests that the dressing selection should be based on the goals including maintenance of moist healing environment, and control of wound exudate, while providing cost effectiveness with less frequent dressing changes.

Although we do not yet have definitive clinical evidence to show one type of dressing outperforms others, it is recommended that the dressing selection should be made based on cost and the need for management of specific symptoms, e.g. absorption of exudate, based on the Cochrane Systemic Reviews.<sup>(2)</sup>

Indeed, excessive moisture on the wound surface is known to cause skin maceration and breakdown, bacterial overgrowth, and wound infection. An ideal wound dressing should contain structure that allows vertical absorption of wound fluid away from the wound surface, as to maintain the moist wound environment.

Another important property in wound dressing is non-adherent contact surface, which allows pain-free dressing changes. This is essential for preserving the quality of life for our wound patients, as well as for protection of new layer of epidermal cells to achieve swift wound closure.

The benefit of combination therapy from compression and super absorbent dressing is multi-factorial:

1. Reducing wound drainage = Less nutrients for surface bacteria
2. Increasing the arterial capillary flow = More blood flow = Higher antibiotic concentration
3. Reducing local edema (less fluid dilution) = More robust immune function<sup>(3)</sup>

The aim of this case study is to test the effectiveness of a combined therapy using (product A): a novel composite foam dressing with pore structures that allow vertical absorption, as well as super-absorbent particles that lock in the moisture, and silicone contact layer to allow atraumatic dressing change, and (product B): a multi-layer compression bandage system.

This combination dressing was changed once a week in our outpatient wound care center, along with surgical wound debridement performed as indicated. In this poster, we present a series of three clinical cases of challenging leg ulcers with various etiologies.

## Product notation

- A: Cutimed Siltec, super absorbent silicone foam dressing by BSN medical GmbH  
B: JOBST® Comprifore, a multi-layer compression bandage system by BSN medical GmbH

## Conclusion

The combined treatment of a super absorbent dressing with multi-layer elastic compression bandage system can be effective in treating challenging leg wounds, incorporated with once a week outpatient visits in our wound care center.

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## Reference

1. Sheffield PJ, Smith A, Fife CE, Wound Care Practice, Best Publishing Company. 2004
2. Dumville JC, Walter CJ and Sharp CA et al. Dressings for the Prevention of Surgical Site Infection. Cochrane Database of Systematic Reviews. 2011.
3. Expert communications. Innovations for Wound bed preparation. Wounds. Sept 2012

## Case 1

73 yr. old male presented with right leg venous ulcer x 2 months duration. He has a past medical history of hypertension, coronary artery disease, deep vein thrombosis and venous insufficiency of lower extremity, but otherwise fairly healthy and ambulates well with a cane.



**Day 0:** The wound was covered with dusky red-yellow biofilms and debrided sharply. Wound was dressed with a super-absorbent silicone foam dressing, then wrapped with a multi-layer compression bandage.



**Day 7:** The leg wound is now covered with 100% red healthy granulation tissues. The wound is contracting nicely with noticeable improvement in leg edema. The leg was dressed with a super-absorbent silicone foam dressing and a multi-layer compression bandage.



**Day 60:** The leg wound continues to improve and contract nicely. The leg was dressed with a super-absorbent silicone foam dressing and a multi-layer compression bandage.



**Day 120:** The leg wound continues to improve and contract nicely. The leg was dressed with a super-absorbent silicone foam dressing and a multi-layer compression bandage.



**Day 140:** The leg wound healed completely, and his wound pain has resolved, allowing him to ambulate without a cane. The patient was prescribed JOBST graduated compression stockings (20–30mmHg) to control his leg edema.

## Case 2

56 yr. old female presented with bilateral leg ulcers x 6 months duration. She has a complicated past medical history, including ESRD (end-stage renal disease) on chronic hemodialysis, hepatitis C, chronic anemia and cryoglobulinemia. The wound etiology is presumed to be vasculitis and auto-immune origin. She ambulated minimally with a walker due to the wound pain. The patient reports significant and chronic wound pain, which was managed with oxycodone / APAP 5-325 tablets.



**Day 0:** The patient presented with multiple foot and ankle ulcers on both legs. The wounds were completely covered with dry black eschars and debrided sharply. Wounds were dressed with a super-absorbent silicone foam dressing, then wrapped with multi-layer compression bandages on both legs.



**Day 30:** Notable improvement was noted in leg edema. Most eschars are removed with surgical debridement and the wounds were contracting nicely. The same dressing regimen was continued (a super-absorbent silicone foam dressing and multi-layer compression bandages).



**Day 60:** Leg edema and wound sizes continue to improve. All the black eschars have been removed and the wounds have been covered entirely with healthy red granulation tissues. The same dressing regimen was continued (a super-absorbent silicone foam dressing and multi-layer compression bandages).



**Day 120:** Leg and foot wounds continue to improve. Approx. 80% of the wounds have healed and epithelialized. The wound pain has subsided almost completely at this time, and the patient discontinued narcotic pain medication use.



**Day 150:** Complete healing of bilateral foot and ankle wounds. Wound pain has resolved completely by this time. The patient was able to ambulate without assistive device (patient previously used walker). The patient was prescribed JOBST graduated compression stockings (20–30mmHg) to control her leg edema.

## Case 3

94 yr. old female presented with right leg ulcer with dry black eschar and hematoma x 3 weeks. She has a past medical history of hypertension, spinal stenosis, and osteoporosis. She was non-ambulatory at this time due to this injury, and she travels in a wheelchair with her caregiver.



**Day 0:** The wound was debrided sharply and with ultrasound debridement device. There was a large hematoma that was evacuated and irrigated with saline. The wound was dressed with a super-absorbent silicone foam dressing, then wrapped with multi-layer compression bandages on both legs.



**Day 7:** Wound showing improvement utilizing the same dressing regimen (a super-absorbent silicone foam dressing and multi-layer compression bandages).



**Day 21:** The wound continued to improve with the same dressing regimen (a super-absorbent silicone foam dressing and multi-layer compression bandages).



**Day 30:** The wound continued to improve with the same dressing regimen (a super-absorbent silicone foam dressing and multilayer compression bandages).



**Day 44:** The wound healed uneventfully in approximately 6 weeks. The patient was given a prescription for JOBST compression stockings (10–15mmHg) for leg edema control.