

Use of Blue Sky Medical Versatile One Negative Pressure Wound Therapy for Treating open lower extremity wounds due to venomous spider bites.

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The use of negative pressure to promote healing of open wounds has considerable literature support for efficacy, cost effectiveness, and ease of use. A new product concept called The Versatile One by Blue Sky Medical of San Diego, CA offers a variation on negative pressure wound therapy through the use of easily available constituents such as rubber/plastic tubing, gauze and clear, semi-permeable dressings.

A case is presented of a 57 year old female who developed a large, non-healing necrotic wound after surgical debridement of the left tibia after a venomous spider bite. Multiple topical therapies and Intravenous antibiotics were used without improvement. The wound was treated with the Blue Sky Medical Versatile One version of negative pressure wound therapy and the Chariker-Jeter Kit with excellent results.

The patient is a 57 year old female who developed severe pain in her left tibial area while walking outdoors in a wooded area with endemic Brown Recluse Spiders. Her leg became exquisitely swollen and tender for which she was seen in the local emergency department. She was started on oral antibiotics, compression and ice with progression of the pain, swelling and ecchymosis. She underwent urgent surgical debridement within 24 hours. The wounds were initially treated using intravenous antibiotics and multiple topical therapies with no improvement. She was seen at the Wound Healing Center after receiving a strong recommendation for "Below Knee" amputation to "prevent spreading". The patient refused additional surgical debridement due to severe pain but did allow initiation of Negative Pressure Wound Therapy using the Blue Sky Versatile One and Chariker-Jeter Kit. Gauze was applied in a single layer covering all aspect of the open wound. A flat Jackson-Pratt drain was placed on the gauze with a second piece of gauze covering the drain. The entire wound was then covered with a clear semi-permeable dressing (Tegaderm). The flat drain was then connected to the Versatile One negative pressure device at a pressure of -80mmHg, intermittent for a period of 6 to 8 hours per day (usually in the evening while asleep). The flat drain was clamped prior to stopping the negative pressure to allow the negative pressure to be retained within the sealed wound dressing. This allowed the patient free mobility during the day. After approximately 11 weeks, the wound was ready for skin grafting. The patient refused due to concerns over pain at the donor and recipient sites and requested continuation of Negative Pressure Wound Therapy based on the ongoing success. Using this device and treatment scheme, rapid healing was noted.

Sample Chariker-Jeter kit placement



Versatile One Negative Pressure device



Healthy leg for demonstration

Figure 1 Right leg initial presentation



April 23, 2004



April 29, 2004



6 days of therapy

May 19, 2004



July 14, 2004



Patient refused skin grafting and requested continuation of therapy

September 8, 2004



Initial appearance at hospital emergency department. Photos courtesy of patient.

First day of negative pressure wound therapy 1 week after debridement

Chariker, ME; Jeter, KF et al.: Effective management of incisional and cutaneous fistulae with closed suction wound drainage. *Contemporary Surgery* 1989; 34: 59-63.
Argenta LC, Morykwas MJ. Vacuum assisted closure: A new method for wound control and treatment: Clinical experience. *Ann Plastic Surg*. 1997; 38:563-576.
Mullner T, Mrkonjic L, Kwassy O, Vecsei V. The use of negative pressure to promote the healing of tissue defects: a clinical trial using the vacuum sealing technique. *Br J Plast Surg*. 1997; 50(3):194-9.