

## Use of V.A.C. VERAFLU™ Therapy to help manage a substantial trauma wound resulting from a boating injury

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A 26-year-old female was airlifted to our facility after a boating injury in a brackish water lake that resulted in significant avulsion injuries and a Gustilo IIIB fracture (**Figure 1**). During transport, which was delayed due to inclement weather, the patient had a Combat Application Tourniquet applied and received 13 units of packed red blood cells and 8 units of fresh frozen plasma. The patient was a tobacco user with no other notable health issues. Upon arrival, the patient was taken to the operating room (OR) for a transfemoral amputation due to the extent of the injury. The amputation resulted in a soft tissue defect that measured approximately 90 x 45cm<sup>2</sup>, tracking superiorly from above the anterior superior iliac spine to the end of the amputation stump. The wound was initially debrided of devitalized tissue and irrigated, and V.A.C.® Therapy was applied at -125mmHg. Early serial wound debridement and irrigation were performed due to delayed onset necrosis and the presumption of wound contamination.

The patient's condition worsened and on Day 5, she was diagnosed with macrophage activation syndrome and started on therapeutic plasma exchange and continuous renal replacement therapy. On Days 6 (**Figure 2**) and 8, the patient was returned to the OR for further debridement and irrigation due to a now aggressive myonecrotic *Aeromonas hydrophila* cutaneous infection. During each trip to the OR, the residual femur had to be revised, resulting in a continuously shortening residual limb and causing concern about potential hip disarticulation and decreased options regarding mobility.

On Day 9, the patient returned for another round of debridement with a possibility of a hip disarticulation; however, upon induction of anesthesia, she coded twice and was returned to the ICU in critical condition. At the bedside, the wound measured 51 x 38 x 4cm<sup>3</sup> with undermining (6cm) along the superior border (**Figure 3**), and since debridement was not an option at this time, the decision was made to initiate V.A.C. VERAFLU™ Therapy. Antibiotics were administered throughout the patient's treatment period, and V.A.C. VERAFLU™ Therapy dressings were changed every 2-3 days. V.A.C. VERAFLU™ Therapy was initially performed using a V.A.C. VERAFLU CLEANSE CHOICE™ Dressing, instilling 100ml of 0.125% Dakin's Solution with a dwell time of 5 minutes, followed by -150mmHg pressure for 2 hours.

Wound healing progressed (**Figure 4**), and by Day 17, a substantial decrease in devitalized tissue, an increase in vascularity, and significant



**Figure 1:** Extensively injured right leg at initial presentation.



**Figure 2:** Wound on Day 6.



**Figure 3:** Wound on Day 9 before initiating V.A.C. VERAFLU™ Therapy.



**Figure 4:** Wound 4 days after initiating V.A.C. VERAFLU™ Therapy.

granulation were noted (**Figure 5**). No further devitalized tissue was evident in the wound and V.A.C. VERAFLOR<sup>™</sup> Therapy was transitioned to using V.A.C. VERAFLOR<sup>™</sup> Dressing, instilling 80ml normal saline with a dwell time of 5 minutes, followed by -125mmHg pressure for 2 hours.

By Day 25, the wound measured approximately 25 x 30cm<sup>2</sup>, and there was significant granulation tissue present and a considerable amount of coverage over the femur fragment (**Figure 6**).

On Day 43, the patient underwent a tangential excision and split-thickness skin graft to the right thigh (**Figure 7**), and the graft was covered with a non-adherent layer and bolstered using V.A.C.<sup>®</sup> Therapy applied at -125mmHg.

By Day 51, a complete take of the graft was noted with no evidence of residual tissue loss. The patient has since gone on to recover fully and took her first steps with the aid of prosthesis on Day 167 (**Figure 8**).

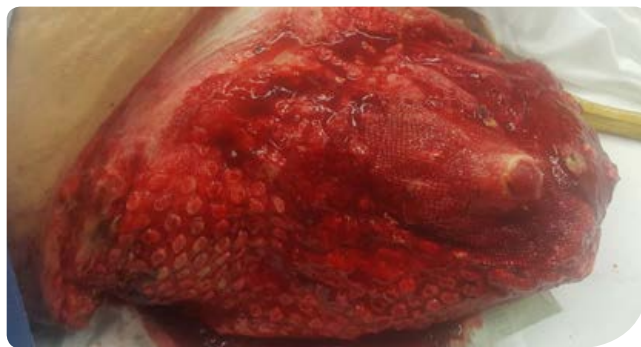


Figure 5: Wound on Day 17, after 8 days of V.A.C. VERAFLOR<sup>™</sup> Therapy.



Figure 6: Wound on Day 25.



Figure 7: Right thigh on Day 45 – 2 days after split-thickness skin graft.

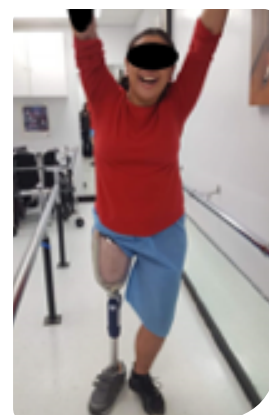


Figure 8: Patient 167 days after initial injury, taking first steps on a new prosthesis.

Patient data and photos are courtesy of Brandon Hill, RN, CWCN, FACCWS; Ochsner LSU Health Shreveport, Shreveport, LA.

**NOTE: As with any case study, the results and outcomes should not be interpreted as a guarantee or warranty of similar results. Individual results may vary, depending on the patient's circumstances and condition.**

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