

## **Traumatic Degloving Wounds Treated with Low Continuous Wall Suction Drainage: A Novel and Effective Technique to Prevent Recurrence**

*Helyn Elizabeth Grissom, MD; Roberto C. Hernandez-Irizarry, MD; Michael A. Maceroli, MD  
Emory University, Atlanta, GA, United States*

**Purpose:** Soft-tissue degloving wounds overlying fractures represent a technical challenge with a high rate of recurrence. The purpose of the present study is to introduce a novel technique for managing soft-tissue degloving wounds in the setting of fractures requiring operative fixation.

**Methods:** 11 consecutive patients with soft-tissue degloving wounds in the setting of operatively managed fractures were treated using a novel technique for “dead space” elimination in the perioperative period. All degloving wounds were thoroughly debrided at the time of initial surgery to remove any devitalized tissue. A layered closure was performed at procedure end over a #10 flat Jackson Pratt (JP) drain. One drain was used for each 100 cm<sup>2</sup> of wound size. The drain is then placed on low continuous wall suction for a minimum of 4 days. Wall suction is then stopped when drainage is recorded at less than 10 cc per 8-hour shift. Drain is then converted to bulb suction for a period of approximately 7 days and is typically removed at a scheduled office visit. All patients were followed for a minimum of 60 days to allow for complete wound healing. Primary outcome measure was return to the operating room for recurrence of degloving wound.

**Results:** No patients in the series developed a recurrence of the degloving wound. The mean wound size in the study population was 125 cm<sup>2</sup>. Patients spent an average of 16 days in the hospital, 7 days on wall suction, and 6 days on bulb suction. The mean drain output on wall suction was 1464 cc. All wounds healed postoperatively and no patients had a recurrence after drains were removed. One patient developed a postoperative infection requiring return to the operating room but this was related to copious gross contamination from the initial injury. The degloving wound on this patient still healed successfully without further intervention.

**Conclusion:** This patient series presents low continuous wall suction drainage as a simple, reproducible method for treating degloving wounds in the setting of operative fractures. Degloving wounds have a high rate of recurrence due to refilling the dead space with fluid despite standard bulb suction drainage. The use of low continuous wall suction provides enough negative pressure to eliminate the dead space and allow for the delaminated tissue layers to heal together, preventing recurrence of fluid collection. In the present study the use of wall suction drainage did not prolong the hospital stay as all patients remained in the hospital for additional days after the drain was converted to bulb suction. However, these data merit investigation into portable methods for negative pressure suction in large degloving wounds to potentially reduce hospital length of stay.

The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.