

The Use of a New Negative Pressure Wound Therapy (NPWT) Device

Charles K. Lee, MD, FACS; Dr. Naomi De Tablan, DPM; Gina Restani, ORT; & Aliena Chin, RN



Introduction & Aim

Negative Pressure Wound Therapy (NPWT) plays a crucial role in reconstructive surgery to accelerate or bolster the healing process with flaps or skin grafts, or as an interim bridge to more complex surgical procedures. It has become an indispensable tool in the operative setting where surgeons can stage procedures and control or protect the surgical wound from an unfavorable wound healing environment. We present our experience with a new NPWT alternative in the acute hospital care setting with a case series of seven patients who underwent surgical debridement in combination with a flap, skin graft, or as “bridge” therapy. The device was used in the head and neck, trunk, and lower extremities and was evaluated for clinical efficacy, safety, and ease of use.

Methods

The alternative NPWT device(s) were applied in the operating room immediately post-op. Four patients underwent graft placement, 2 underwent a flap procedure, and one device was applied post debridement for bridge therapy. A silver contact layer was applied under the NPWT foam dressing at the surgeons discretion. The NPWT foam dressing stayed in place for 7-10 days. All patients were transferred to the PACU after which 3 patients were discharged home and 4 were transferred to the hospital’s medical floor.

Patient Outcomes

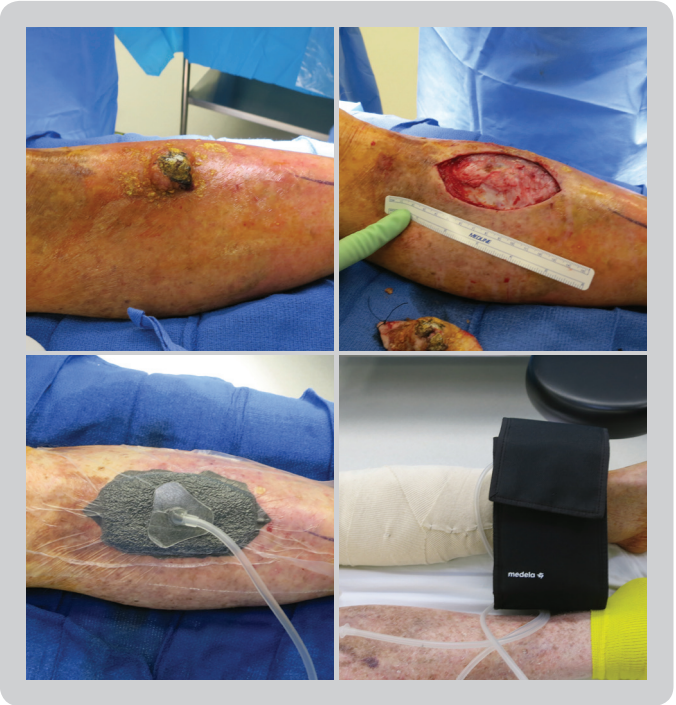
The NPWT device(s) successfully managed the surgeon’s healing objectives for several types of surgical wounds. Two out of the three discharged patients managed the NPWT device independently at home with no complications. One discharged patient was non-compliant with the device and was then managed with a traditional dressing. The four acute care patients healed and NPWT was discontinued.

Conclusion

The role of these NPWT device(s)* in managing complex surgical wounds is strongly supported by the results in these 7 cases. Of particular note, the device(s) were clinically effective, easy to use and safe for the patients. From this study, we were able to validate its relevance as an alternative NPWT device.



Patient #1: 55yr
Dx- Traumatic Scalp Wound
Surgery: 5/4/2016- Debridement of scalp wound, split thickness skin graft



Patient #2: 79yr
Dx: Left leg tumor (Squamous cell cancer)
Surgery: 5/11/2016- excision of squamous cell cancer, full thickness skin graft (5x8), local fascial flap and placement of NPWT



Patient #6: 73yr
Dx: Right leg wound
Surgery: 7/3/2016, 7/5/2016- Debridement, Right leg split thickness skin graft

Patient Number	Procedure/Locati on	Status	mmHg & Duration	Outcome/Effic acy	Notes/Safety	Ease of Use
#1	Skin graft, Scalp	Outpatient	80 mmHg 10 days	100% healed graft	No issues	No issues
#2	Full thickness skin graft, Leg	Outpatient	80 mmHg 5 days	100% healed graft	Patient compliance issues	Patient compliance
#3	Flap, ischial pressure ulcers	In-patient	80mmHg 3 days	100% healed flap	Difficult seal	Challenging anatomical location
#4	Hematoma debridement, right anterior leg wound	In-patient	80mmHg 5 days	Open wound, bridge therapy	Silver Contact layer under NPWT foam No issues	No issues
#5	Graft, right leg wound	In-patient	120mmHg 7 days	100% healed graft	Silver contact layer under NPWT foam No issues	No issues
#6a	Debridement of wound r/t vascular bypass, left leg	Outpatient	125mmHg 5 days	100% healed flap/incisional	Silver contact layer under NPWT foam No issues	No issues
#6b	Debridement of infected right leg wound	In-patient	125mmHg 3 days	Open wound, bridge therapy	No issues	No issues
#7	Skin graft, right leg	In-patient	125mmHg 7 days	100% healed graft	No issues	No issues

*Medela NPWT pumps: Invia Liberty™ and Invia Motion®