THE IMPOSSIBLE SOLUTION: PURE HYPOCHLOROUS ACID (PHA)* PRESERVED CLEANSER SOLUTION, WITH AND WITHOUT NPWT FOR SECONDARY HEALING IN A COMPLEX ABDOMINAL WOUND WITH FISTULA

INTRODUCTION

Use of pure Hypochlorous Acid (HOCl) based cleansers in wound bed preparation is well accepted. Recent guidelines suggest that pure HOCl based cleansers can mechanically remove necrotic debris and microbial matter from wounds safely. Literature and these current guidelines suggest that the molecule is associated with a high level of tissue safety though it is at the same time a potently powerful remover of microbial/biofilm debris and necrotic tissue.

The use of pure Hypochlorous Acid (pHA) based cleansers,with Negative Pressure instillation and dwell time technology with dwell (NPWTi-d) is emergent. We prefer this method with pHA for surgical closure wherever possible and convenient. However, wounds unsuitable for NPWT for various reasons, some logistical and site of care related, can still benefit from the application of gauze soaked with HOCI solution or pHA application for 5-10 minutes soaking. Preclinical data has shown that such a brief soaking can eliminate emergent or semi established biofilm. Moistened gauze-based application is a traditional method and its compatibility with pHA, its low cost, and its simplicity supports use of this simple medical product, used for centuries, to deliver the highly advanced product based on pHA technology. Changed frequently, such Vashe soaked gauze does not, and in fact is not allowed to dry on the wound, and therefore the gauze really does not stick to the wound with trauma associated with removal. In fact, some have called this regime of gauze use the moist-to-moist method of wound treatment with gauze, as opposed to moist to dry gauze treatment. We present a challenging case where pHA was used beneficially with both gauze and NPWTi-d using this moist-to-moist approach.

METHOD

We present a case of a 33YO patient with bowel perforation happening during robotic hysterectomy. The highly contaminated abdomen underwent emergent exploration with irrigation, debridement, and bowel resection. pHA was utilized throughout over a 6-month period. Initially, the abdomen was left open, and treated with NPWTi-d with pHA with instillation and dwell time. An enterocutaneous fistula was identified and NPWTi-d was discontinued. Further surgery was avoided, wound bed/fistula was then treated with pHA/moist gauze with frequent dressing changes not allowing the gauze to dry out on the wound Patient discharged (3 MO), and the wound bed was home treated (pHA moist gauze, with frequent changes again to avoid drying of the gauze and sticking of the gauze to the wound) with ostomy appliance applied over fistula. At 6 months of such a simple "suitable for home use" regime, drainage stopped, the fistula disappeared, and abdominal wound completely healed.

DISCUSSION

This case highlights the benefits of pHA use in the acute and post-acute care settings both with and without NPWT. The simplicity of pHA soaked moistened gauze use successfully expedited hospital discharge and ultimately successfully allowed for secondary healing at home without resuming NPWT and/or surgical intervention which was not appropriate for this patient.

While more studies are recommended to look at the ideal solution for both NPWTi-d and moistened gauze, the role of HOCI based pHA cleanser with moistened gauze for wound cleansing, in the face of an enterocutaneous fistula when surgical intervention is deemed unadvisable may the "impossible solution to a difficult problem".

CASE SUMMARY: NECROTIC WOUNDS, ABDOMEN

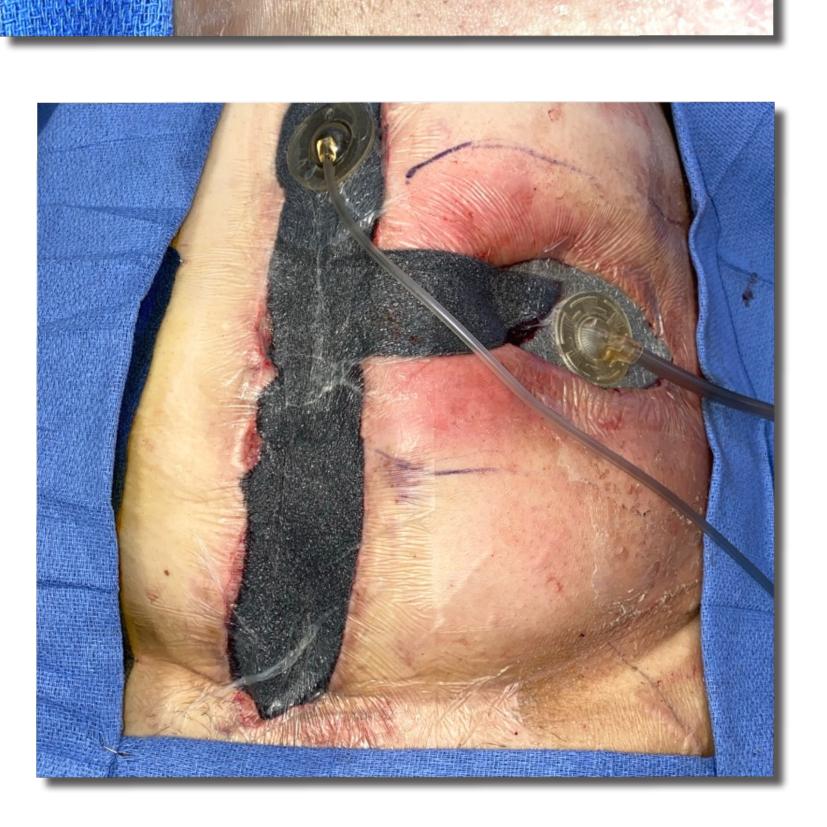
- 33 yo female presents with complex wounds in abdominal wall following bowel perforation during robotic hysterectomy.
- Medical history:: No comorbidites

Treatment :

- Taken to OR for serial debridments to prevent necrotizing infection.
- 3M[™] Veraflo[™] Therapy initiated with 3M[™] V.A.C. Veraflo[™] Cleanse Choice Dressing with Normal saline then Pure Hypochlorous acid (pHA)*
- Patient was deemed non surgical candidate for fistula repair.
- Pure Hypochlorous acid (pHA)* was continued as moist dressing for ease of dressing change and ongoing fistula.
- Patient healed secondarily without the need for further surgery



DAY 1





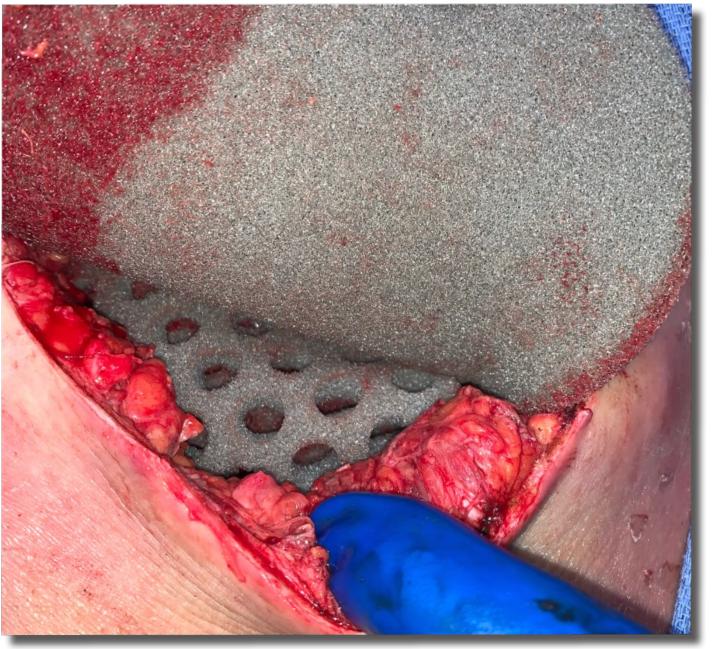




MICHAEL N. DESVIGNE, MD, FACS, CWS, FACCWS; KRISTA BAUER (MONTGOMERY), RN, WCC, OMS; KURT HOLIFIELD, RN, BSN, WCC, OMS, KARI DAY, RN, BSN, WCC; DENISE GILMORE, RN; ASHLEY L. WARDMAN, LPN

DAY 2 (CONT'D)

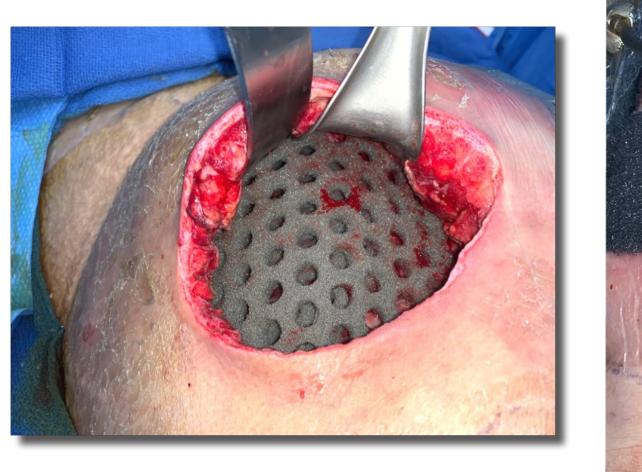




DAY 5









DAY 10











DAY 30



DAY 20



DAY 45



DAY 60





REFERENCES

- 1. Robson MC, History of hypochlorous acid and its mechanism of action. Supplement to Wounds 2019; S46-48.
- 2. Robson MC, Disruption of biofilm with Vashe wound solution History of hypochlorous acid and its mechanism of action. Supplement to Wounds 2019; S59-60
- Tran BNN, Chen AD, Kamali P, Singhal D., Lee BT, and Fukudome EY. National perioperative outcomes of flap coverage for pressure ulcers from 2005 to 2015 using American College of Surgeons National Surgical Quality Improvement Program. Archives of plastic surgery 2018 45(5), 418.
- 4. Kim PJ, Attinger CE, Constantine, T. et al. Negative pressure wound therapy with instillation: International consensus guidelines update. Int Wound J. 2019;1-13
- 5. International Wound Infection Institute (IWII) Wound Infection in Clinical Practice. Wounds International. 2022.
- 6. Eriksson E, Liu PY, Schultz GS, et al. Chronic wounds: Treatment consensus. Wound Rep Reg. 2022; 1-16. doi:10.1111/wrr.12994
- 7. Melin M et al. Mirroring Consensus Guidelines With Uniform Pure Hypochlorous Acid-based Cleansing. Wound Prevention and Management, October 2022, 10-12.

^{*}Vashe Wound Solution[®], Urgo Medical North America, Fort Worth. Poster was created with support from Urgo Medical North America