Concurrent use of a *GV/MB PVA wide-cell antibacterial foam with negative pressure wound therapy

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Problem and Significance: 51-year-old female with history of Type 1 bipolar disorder, status-post elective abdominoplasty. Following multiple emergency department presentations, the patient reportedly took at a minimum 4 zolpidem then removed their surgical drains and abdominal binder at home. Subsequently they developed a large seroma leading to total abdominal incision dehiscence, and a large gaping dehisced abdominal wound with significant undermining (68.4sqcm; undermining 5cm), necrotic tissue present. Prior treatment included hydrogel and gauze. Reported taking cephalexin for "several months"; Upon wound center arrival, the patient was converted to negative pressure wound therapy (NPWT) at 125mmHg intermittent setting in addition to standard wound hygiene protocol and non-contact low frequency ultrasound. Case complicated by patient pain, stress, and psychological burden including turning the machine off intermittently and refusing to remove dressing and place gauze between clinic appointments leading to pain, erythema, induration, and lack of wound progression. Without use of this treatment, excess moisture can accumulate, leading to risk of infection and prolonged healing time.

Methods: The patient was then transitioned to concurrent use of a methylene blue and gentian violet, polyvinyl alcohol, wide-cell antibacterial foam (GV/MB wide cell PVA) in contact with the wound bed, and NPWT changed three times weekly. GV/MB PVA wide-cell antibacterial foam is a soft, non-cytotoxic, pre-hydrated foam dressing designed for patient comfort during dressing changes. Absorbs and transfers bacteria laden exudate out of tunnels, undermining, and deep wounds, away from the wound bed.

presentation	2 wk f/u	6 wk f/u:	8 wk f/u	10 wk f/u
4.5x15x4.2cm; 68.4sqcm; undermining 5cm 10-6oclock	4.6x10.3x2.4; 47.38; undermining including 1cm within center superior wall of adipose; 31% improved	2.7x8.7x2; 23.49 sqcm; 66% (1st GV/MB PVA under NPWT f/u; 4 wks after switch)	2.5x7x0.1; 17.5; 75%	1.4x4.6x0.1; 6.44 sqcm; 90%

Results: At four weeks the wound had decreased in size by 66% (23.49 sqcm). Clinical improvement noted: pain reduction, elimination of signs of inflammation, improved granulation tissue quality. At six weeks, wound dimensions had reduced by 75% (17.5 Sqcm) from presentation with wound edges attached and migrating and 100% bright red granulation tissue. At this point, NPWT was discontinued by patient request and they transitioned to a GV/MB bordered, polyurethane foam.

Discussion: Concurrent use of GV/MB wide-cell antibacterial foam with NPWT resulted in safe and effective complex wound management. The wide-cell antimicrobial foam displayed the desirable function of a wound dressing when NPWT was not functioning. This innovative case exemplifies the potential for both augmenting and expanding clinical treatment with NPWT for patients.

THIRD COAST VASCULAR

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References: Woo KY, Heil J. A prospective evaluation of methylene blue and gentian violet dressing for management of chronic wounds with local infection. Int Wound J. 2017 Dec;14(6):1029-1035. doi: 10.1111/iwj.12753. Epub 2017 May 16. PMID: 28508548; PMCID: PMC7949968. 2. Coutts PM, Ryan J, Sibbald RG. Case series of lower-extremity chronic wounds managed with an antibacterial foam dressing bound with gentian violet and methylene blue. Adv Skin Wound Care. 2014 Mar;27(3 Suppl 1):9-13. doi: 10.1097/01.ASW.0000443270.71030.71. PMID: 24521848. 3. Gao J, Wang Y, Song J, Li Z, Ren J, Wang P. Negative pressure wound therapy for surgical site infections: A systematic review and meta-analysis. J Adv Nurs. 2021 Oct;77(10):3980-3990. doi: 10.1111/jan.14876. Epub 2021 Apr 27. Erratum in: J Adv Nurs. 2022 Jun;78(6):1848. doi: 10.1111/jan.15270. PMID: 33905552.