Tackling Challenging Wounds with a Methylene Blue and Gentian Violet Antibacterial Foam Dressing

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INTRODUCTION

- Versatility is a key feature of advanced care wound dressings.
- Wounds may be shallow or deep and may vary in their amounts of exudate.
- Wound healing may be delayed when a local/superficial infection is present.
- In an example of a case series, results indicated that the topical antibacterial dressings can be used to manage wounds that are demonstrating an increased superficial bacterial bioburden.[1]
- A single dressing that manages multiple wound characteristics (e.g., size, depth, presence of increased superficial bacterial burden) could reduce the number of dressing types required.
- The purpose of this case series was to assess the change in wound size of five chronic wounds using an antibacterial polyvinyl alcohol (PVA) foam dressing containing methylene blue and gentian violet (MBGV).*

METHOD

- These five wound cases were managed with the MBGV antibacterial foam dressing* as the primary wound dressing.
- Wound measurements (length, width, and depth) were taken at weekly intervals.
- Additional therapies (e.g., compression, pressure offloading/ redistribution) were used when appropriate to address the underlying cause of the wound.
- Each MBGV dressing was covered with a moderately or highly absorbent secondary cover dressing for exudate management.
- Dressings were changed every 3 days or as needed to maintain moisture balance.

FINDINGS

- In all five cases, the chronic wound improved and attained complete wound closure with the use of the MBGV dressing* as part of the wound management plan.
- The MBGV dressings helped to assist in safe autolytic debridement, as evidenced by a reduction in devitalized tissue.
- Wound pain during and between the dressing changes was resolved in all five patients while using the MBGV dressing.

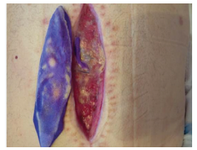
CONCLUSION

- In these five cases, the applied MBGV dressings*, when used as a part of the wound management plan, helped shift these chronic, stalled wounds onto a healing trajectory. Complete wound closure occurred in all five cases.

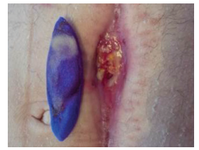
CASE 1 - Surgical dehiscence following bowel resection

History: 86-yr-old male. Surgical site dehiscence occurred following bowel resection.
Wound characteristics and prior treatment: Wound base pink with visible sutures, brownish-yellow firmly attached slough and tunneling at medial aspect. Prior treatments included an iodine packing strip and an absorptive secondary dressing.

Day 1. Size (cm): 16 x 4.8 x 1.0. Base pink with nonviable tissue at center, slight undermining with sutures visible, edges attached.



Day 5. Size (cm): 16 x 4.5 x 0.8. MBGV applied into and over the wound. Edges epithelializing.



Day 15. Size (cm): 2.5 x 2.0 x 0.7. Wound 70% epithelialized with remaining yellow slough. Sutures no longer visible at center.

Week 10. Complete closure.

CASE 2 - Chronic wound post trauma – Left hallux

History: :73-yr-old male with diabetes, renal issues, and venous stasis. Patient sustained blunt trauma to his left great toe, later developing osteomyelitis.
Wound characteristics and prior treatment: Anterior/posterior tissue damage to the affected toe. Posterior aspect probed to bone. Prior treatments included intravenous antibiotics, silver dressing, and cadexomer iodine.

Day 1. Size (cm): 3.0 x 1.0 x 0.5. Non-viable black/yellow keratinous tissue. Nail involuted and partially unattached. MBGV dressing and thin silicone cover dressing.

Day 18. Size (cm): 2.0 x 0.6 x 0.3. Base pink with yellow slough, edges partially unattached.

Week 8. Wound healed.

CASE 3 - Neuropathic ischemic toe ulcer

History: : 86-yr-old female with diabetes, and previous toe amputations from gangrene.
Wound characteristics and prior treatment: Ulcer developed on the second digit, related to pressure from ill-fitting shoes and loss of protective sensation. Managed initially with medicated ointment and a band aid, then with cadexomer iodine and alginate.

Day 1. Size (cm): 1.5 x 1.0 x 0.3. Base not visible, periwound maceration present and edema. Patient stated, "feels pain at site." MBGV dressing* and soft silicone, modified compression. Dressing changed every 2 days. Referral to pedorthist for optimal foot wear.

Day 15. Size (cm): 0.2 x 0.2 x 0.2. Edges defined and attached, no maceration, edema reduced. Denies feeling pain during the dressing change.

Week 7. Wound closed. Home-visit made to recheck the modified compression prior to discharge.

CASE 4 - Burn injury to left leg

History: History: 78-yr-old male with neuropathy in hands and legs.
Wound characteristics and prior treatment: Spilled hot coffee on leg resulting in a second degree burn to his inner thigh. Original measurement: 17 cm x 12 cm; previous treatments included silicone mesh, silver alginate, and an absorptive silicone dressing.

Day 1. Burn is 3 weeks old. Size (cm): 13 x 4.0. MBGV dressing initiated.

Day 2. 24 hr later, satellite lesions less prominent, states "pain subsided."

Week 3. Size (cm): 4.5 x 1.5. Decreased periwound erythema, states "no pain."

1 Month. Wound reduced to three small areas < 1.5 cm in diameter. Closure at Week 6.

CASE 5 - Excision of growth

History: 67-yr-old female with CHF, renal impairment, and diabetes, and had a growth excised from her left lower leg. ABI confirmed moderate limb ischemia. Had been admitted to hospital with CHF following excision.
Wound characteristics and prior treatment: Site reported as "quite painful," with a base of firmly attached eschar. Prior treatments included cadexomer iodine, alginate, and a soft silicone cover dressing.

Day 2. Removal of devitalized tissue facilitated by the MBGV dressing. Site size (cm): 5.3 x 2.0 x 0.2. Base yellow/ pink with a small amount of nonviable tissue remaining. Pedal edema present. Modified compression implemented. Referral to vascular made.

Day 18. Site size (cm) 3.0 x 1.0. Base dark red with slight peripheral redness, edges attached. "No pain" reported.

Week 6. Wound closure.

REFERENCES

1. 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; 27(3 Suppl 1): 9–13.

*Support for the development of this poster was provided by Hollister Ltd.

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