The Versatility of PVA Foam Dressing Impregnated with Methylene Blue and Gentian Violet on Acute and Chronic Wounds

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Abstract:
Wound care can be expensive and sometimes a frustrating experience for both the clinician and the patient. While the costs of wound care products continually rise, clinicians are challenged to provide quality, cost-effective care to their patients. Multiple studies have shown that the newer, advanced wound care products are more cost-effective and have better healing rates than some of the older, more traditional treatments using gauze. Versatility and cost-effectiveness are important features of wound care products. Products that will handle and heal most types of wounds is often difficult to achieve. Multiple case studies have been done using a PVA foam impregnated with Methylene Blue and Gentian Violet. These studies have been done on pressure ulcers, venous stasis ulcers, arterial ulcers, diabetic ulcers, surgical dehiscence, skin debridement, brown recluse spider bite wound, and chronic wounds.

Secondary Dressing Options Based on Exudate

<table>
<thead>
<tr>
<th>Exudate Amounts</th>
<th>Costs of Treatment</th>
<th>Appropriate Secondary Dressing</th>
</tr>
</thead>
<tbody>
<tr>
<td>No exudate/Scant</td>
<td>Cost-effective</td>
<td>Granulated alginate, Calcium Alginate, Hydrogel, hydrocolloid, foam, film, petrolatum based dressings.</td>
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<tr>
<td>Small Amounts</td>
<td>$0 to $150</td>
<td>Hydrogel, hydrocolloid, petrolatum gauze dressing, nitrocelulose films.</td>
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<tr>
<td>Moderate Amounts</td>
<td>$200 to $400</td>
<td>Foam, Island dressings, ABD pads, petrolatum gauze, non-adherent gauze.</td>
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<tr>
<td>Large to Copious</td>
<td>$500 to $1000</td>
<td>Compression dressings, Superabsorbent dressings, Calcium alginate, ABD pads.</td>
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Application Tips:
- Cleanse wound with normal saline.
- Cut Hydrofera Blue to cover wound bed and/or overlap wound margins.
- Moisten with normal saline or sterile water and squeeze out excess fluid.
- Place the dressing on the wound bed, pack wound when appropriate, and overlap the wound margins.
- Cover with appropriate cover dressing (see “Secondary Dressing Options” above).
- Change dressing up to every 3 days or as needed.

Pressure Ulcers
Case 1: 48 year old female, 5th surgical debridement of stage 3 buttock pressure ulcer. She had an incomplete L2 spinal cord injury with incontinence for 1 year. She has no feeling in her pelvic area and her ability to walk is compromised, causing her to sit on the ulcer most of the day. Hydrofera Blue was applied on 9/25/03, she reported a decrease in pain over the first week of therapy. The wound was healed on 10/13/03, less than 4 months after starting therapy.

Diabetic Ulcers
Case 1: 48 year old male with DM II, neuropathic ulceration of the right plantar foot, which has been present for 2 years. 10 days after starting Hydrofera Blue dressing, the wound is healed.

Pyoderma Gangrenosum
Case 1: 68 year old female with RA for 20 years. This wound was present for greater than 1 year. Patient complained of constant severe pain. Hydrofera Blue was applied on 9/25/03, she reported a decrease in pain over the first week of therapy. The wound was healed on 10/13/03, less than 4 months after starting therapy.

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Features of Dressing Material

Antimicrobial Against:
- Staphylococcus epidermidis
- Staph aureus
- Bacillus subtilis
- Serratia marcescens, Yersinia enterocolitica, E. Coli, MRSA, VRE, Candida albicans, Pseudomonas aeruginosa, Enterococcus faecalis, Klebsiella pneumoniae, Acinetobacter baumanii, Proteus vulgaris, Enterobacter aerogenes, Enterobacter cloacae

Hydrofera Blue
- Promotes moist wound therapy
- Flattens epibole
- Decreases bioburden on wounds
- Reduces pain
- Inhibits bacterial growth and prevents proliferation
- Absorbs 25x its weight in fluid
- PVA foam is strong and wicks excess fluid from wound bed
- Promotes moist wound therapy

Venus Ulcers
Case 1: 81 year old female with venous stasis ulcer of greater than 1 year. She had been seen by up to 3 surgeons and had multiple fragmentations unsuccessfully. She was started on Hydrofera Blue and the wound was healed in 9.5 weeks.

Brown Recluse Spider Bite
Patient was bitten by a brown recluse spider, developed a large wound on her calf. Wound was present for 3 months, prior to her presenting to a wound care clinic for treatment. She tried multiple treatments and surgical interventions with minimal response to treatment. On initial assessment wound measured 23cm x 12cm x 0.2cm. 64 days using Hydrofera Blue the wound, measured 15cm x 0.5cm x 0.1cm and had split into 2 separate wounds, with new tissue present between each wound. Wound #1 measured 5.0cm x 2.3cm x 0.1cm and wound #2 measured 5.0cm x 1.8cm x 0.1cm. The wound healed in 105 days after starting the Hydrofera Blue dressings.

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Cancer
Diabetic female-infiltrating ductal tubular cancer, stage 1. Underwent quadrantectomy and radiation x29 treatments. Patient reported no further pain after treatment initiated. Wound healed in 20 weeks with daily dressing changes.

Surgical Wounds
Case 1: 56 year old male 5th surgical debridement from bypass surgery 7 years ago. He had multiple co-morbidities including DM II; renal failure requiring dialysis, HTN and obesity. These wounds had significant epibole and were very difficult to heal. She was first treated on this wound and all of them failed. Hydrofera Blue was applied to the wound bed and in 30 days the wound was healed. This dressing also reduced the pruritis significantly.

Chronic Osteomyelitis
Case 1: 56 year old Hispanic female. Co-morbidities include DM II, S/P bypass graft, CAD. Renal failure on dialysis. She has had chronic osteomyelitis on her tibia for greater than 10 years. Patient started using Hydrofera Blue packing dressing 8/25/04. Wound closed 10/10/04. Closed 102 days.

Arterial Ulcers
12 year old Hispanic female. Co-morbidities include DM II, S/P bypass graft, CAD. Renal failure on dialysis. She has had chronic osteomyelitis on her tibia for greater than 10 years. Patient started using Hydrofera Blue packing dressing 8/25/04. Wound closed 10/10/04. Closed 102 days.

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