Evaluation of a Versatile, 100% Chitosan Bioactive Microfiber Gelling (BMG) Wound Dressing on Various Wound Etiologies in a Mobile Wound Care Practice

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Introduction

Managing diverse wound etiologies in a mobile wound practice requires clinicians to carry multiple advanced dressings to match individual wound assessments. Ideally, a single versatile primary dressing could manage exudate, provide antimicrobial and hemostatic activity, and be compatible with a range of cover dressings selected according to exudate level and anatomical location, thereby reducing product burden in the clinician's bag.

Chitosan is a naturally derived, bioactive polymer that has been associated with antimicrobial activity, MMP reduction, hemostatic effects, and biocompatibility.[1,3,5] A 100% chitosan bioactive microfiber gelling (BMG) dressing has been developed to simplify dressing selection while supporting wound healing. Clinical evaluations of this BMG dressing have reported high patient and clinician satisfaction, reductions in slough and necrotic tissue, increases in granulation tissue, reduced wound odor and decreased wound pain across complex wound types.[2,4] Functional characteristics, including high exudate absorption and exudate locking with minimal lateral wicking, help protect periwound skin and reduce the need to trim the dressing to wound size.

Methods

A 100% chitosan BMG wound dressing was introduced in lieu of calcium alginate, collagen and gelling fiber dressings, with or without silver, for various types of acute and chronic wounds (Fig. 1) in a single mobile wound care practice. The primary objective of this evaluation was to assess whether this single dressing could safely replace multiple existing primary dressings and support progression towards healing.

Results

The chitosan BMG wound dressing was effective in managing various wound etiologies. Clinical observations included ease of application and removal, superior exudate handling compared to existing fiber dressings, improved peri-wound condition, bleeding control following sharp debridement, odor reduction, and wound pain and itchiness. It was used successfully in all four cases as a primary dressing with various cover dressings including hydrocolloids, foams, super-absorbents, composite dressings, and two-layer compression wraps.

Discussion

Incorporating a 100% chitosan BMG dressing into a mobile wound practice appears to simplify dressing selection while supporting wound healing outcomes. By replacing several other primary dressings, this versatile dressing may reduce stocking requirements and bag burden for mobile clinicians, while providing consistent exudate management, hemostatic support and patient comfort across diverse wound etiologies.

Case#1: Chronic wound case

- 61/M, paraplegic 47 yrs, L ankle contracture, actinic keratosis. Venous stasis, chronic ~18 months, cyclical wound breakdown
- Prior dressings: silver alginates, gelling fibers, collagen, Methylene Blue Gentian Violet (MBGV) foam, gauze, hypochlorous acid, with 2-layer compression
- Chitosan dressing initiated 11/21/25 with compression. Weekly changes showed limited progress; increasing to 3×/week under silicone super-absorbent accelerated healing. Epithelialized 1/23/26 (63 days). Healed 2/4/26
- "BMG was the factor that started this wound in a healing trajectory after ~18 months being open."

11/21/25 - Baseline (Day 1 of Chitosan dressing)

2/4/26 - Healed

Case #2: Acute wound case

- 38/F, no significant health history
- Insect bite (unknown), L upper arm/axilla. Acute, 10/5/25. Bruise progressed to blister, itchy and painful
- Chitosan fiber dressing initiated 10/12/25 with hydrocolloid, overlapping onto healthy tissue. Controlled lateral wicking, protecting periwound area
- Instant pain relief at first application. No pain/itching by day 2
- Epithelialized 10/19/25 (7 days, 4 dressing changes). Healed 10/24/25
- ~7.0 cm² → 0.3 cm² (~96% reduction). No maceration despite overlap on healthy skin

10/14/25 - Day 3 with BMG Chitosan fiber dressing. No pain or itching

10/24/25 - Healed

Case #4: Hemostasis case

- 61/M, paraplegic, adrenal CA, venous hypertension
- Two pressure injury sites: dorsal foot (lower limb) and R hip, gluteus
- Post-sharp debridement hemostasis evaluation
- Chitosan fiber dressing applied directly to control minor bleeding after debridement
- Bleeding controlled at both sites
- 3 clinicians (2 providers + author) prefer chitosan fiber dressing over calcium alginates for post-debridement hemostasis

Pre-debridement

Post-debridement. Hemostasis achieved with BMG Chitosan fiber dressing

Figure 1: Summary of cases

Case	Age/Sex	Wound Classification	Location	Comorbidities
Case 1	61/M	Wound 1: Venous stasis, Wound 2: Trauma (dehiscence)	Wound 1: L ankle/instep, Wound 2: L shin, medial	Paraplegic 47 yrs, actinic keratosis
Case 2	38/F	Trauma (insect bite)	L upper arm, axilla	None significant
Case 3	89/F	Venous insufficiency	Bilateral lower limbs	Diabetes, anticoagulation
Case 4	61/M	Pressure injury	Wound 1: Dorsal foot, Wound 2: R hip, gluteus	Paraplegic, adrenal CA, venous HTN

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Disclosure: Andrew Marxen, BSN, RN, CWCN, CWHS, MBA. has no financial relationship with Advamedica Inc.