

# Reducing Veteran Hospital Resource Utilization for Treatment of Complex Post-Operative Vascular Wounds: Case Series Using Novel Transforming Powder Dressing

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## INTRODUCTION

Increasing healthcare costs, shortages in healthcare resources, and an aging population with multiple comorbidities have made wound management a growing clinical, economic, and social burden, necessitating a paradigm shift in current standard of care (SOC) therapies.<sup>1</sup> Medicare cost estimates for acute and chronic wound treatment in the United States (US) range from \$28.1 billion to \$96.8 billion annually.<sup>2</sup> The US Veteran's Affairs Medical Center treats an increasingly aging population predisposed to nonhealing vascular wounds in the setting of multiple comorbidities. We present a case series of 4 patients with complex post-operative vascular wounds treated with a novel transforming powder dressing (TPD) and report findings related to wound healing and resource utilization compared to SOC.

## METHODOLOGY

Four patients with complex wounds of differing etiologies resulting from sequela related to severe vascular pathology were assessed. Each patient was observed to have comorbidities with a history of poor wound healing requiring consideration of alternate treatment modalities. All patients were converted to treatment with TPD, and dressings were changed based on clinical necessity. The wound closure progress was monitored along with resource utilization compared to SOC.

## DISCUSSION

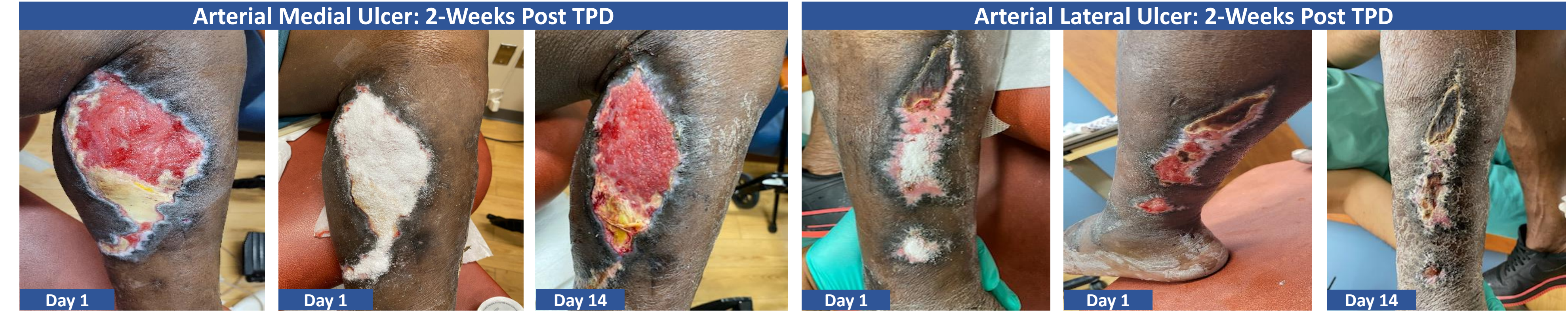
These challenging patients experienced clinically enhanced healing and wound area reduction relative to SOC with TPD. Dressing changes and clinic visits were significantly reduced versus SOC. TPD was observed to benefit wound healing while requiring less overall resource utilization.

## RESULTS

### #1. ARTERIAL INFECTED / NECROTIC ULCER

- 71 y/o male, PVD with claudication, CLI
- Left fem-pop bypass in-situ c/b infection. Subsequent native artery revascularization, bypass coil embolization/ligation, refractory ulcer post distal infective / necrotic tissue evacuation

**Outcome:** TPD continued at home with good healing. **Dressing changes reduced from once every 2 days (NPWT) to once a week (TPD).**



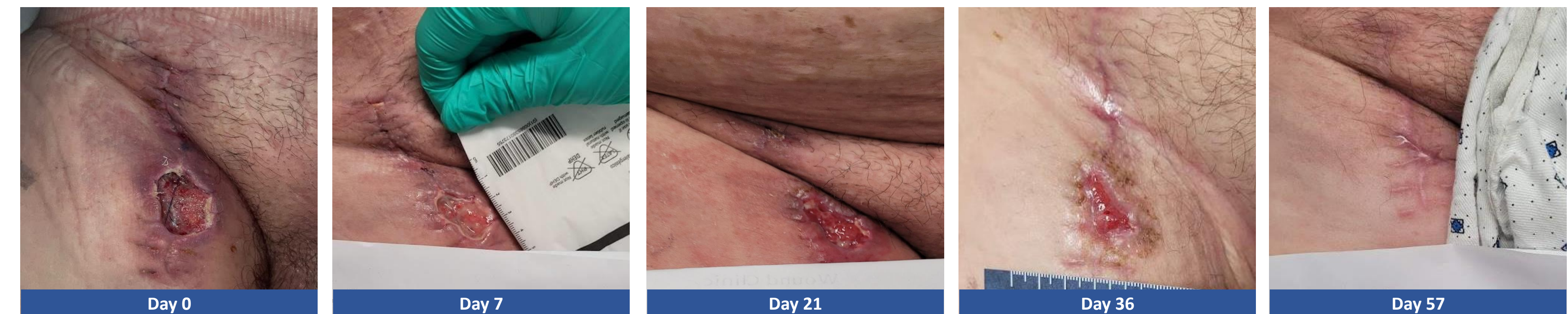
### #2. AMPUTATION SITE WOUND

- 71 y/o male with h/o HLD, DM, CAD (s/p CABG 1993), severe AS (s/p TAVR 2021), COPD, PAD s/p LLE angiogram with L SFA atherectomy and angioplasty on 10/2022 (**measurements:** 4.5 x 4.0 x 1.3 cm)
- Open surgical wound of left foot s/p partial 1<sup>st</sup> ray resection and wound debridement performed 11/2022 for OM
- Outcome:** Significant wound area reduction (4.5 x 4.0 x 1.3 cm to healed), with **12 TPD applications over 85 days or once a week**



### #3. SURGICAL WOUND C/B DEHISCENCE

- 72 y/o male with h/o HTN, AAA, depression, CKD3, HLD, A-fib, MI, diverticulitis, colovesicular fistula, PAD s/p R iliac stenting with femoral endarterectomy (08/2022) with postop course c/b by right groin infection and wound dehiscence
- Outcomes:** Accelerated wound healing (3.0 x 2.0 x 0.5 cm to healed) with only **4 clinic visits over 57 days or once every 14 days**. All dressing changes done at home with TPD, wound contact later and gauze.



### #4. REFRACTORY GRANULOMATOUS ULCER

- 74 y/o male, PVD progressed to rest pain, CLI
- Right fem-AT bypass with PTFE. Disease progression at distal anastomosis with jump bypass from PTFE to distal AT using basilic vein

**Outcome:** Significant wound area reduction of chronic granulomatous wound with TPD. **Dressing changes reduced from thrice (antimicrobial dressings) to once per week (TPD).**



## REFERENCES & ACKNOWLEDGEMENTS

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