# CASE STUDY

# Inflammation Relief Provides Key to Healing for Patient with Pyoderma Gangrenosum

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#### PURPOSE/GOAL:

6 15.0

4 10.0

A 37-year-old woman with ulcerative colitis developed an excruciatingly painful slough-filled pyoderma gangrenosum (PG) wound on her right lower leg the 7th of July. Topically, only bismuth tribromophenate/ petrolatum gauze dressings were tolerated. The patient required 6 - 8 propoxyphene/acetaminophen/ day to keep her persistent wound pain at 5 - 8 on enjoying other usual activities. the 0 - 10 scale. Despite high doses of systemic The patient's goals were: corticosteroids (injections, oral prednisone, dapsone), the wound increased in size, wrapping around her leg and stabilizing at ~10 cm x 7.5 cm (see photos).

When replacing dapsone with cyclosporine for three weeks failed to decrease the wound size and/ or pain, the patient's family searched the internet

for alternative treatments. The patient decided (with physician consent) to try extra-absorptive silver polymeric membrane dressings (PMDs) with email/ telephone guidance starting on the 8th of November. For four months, the wound had not decreased in size. Pain and the side-effects from narcotic pain relievers prevented the patient from driving, going to work, or

TYLENOL (500 mg)

- Short term: (1) decrease the pain enough to permit wearing socks (winter was coming)
- Intermediate: (2) wean off of narcotic pain relievers and (3) close the wound
- Long term: (4) a more cosmetically acceptable scar than she had from a previous PG wound.

PAIN LEVELS AND ANALGESIA

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9-Nov 1-Nov 3-Nov 1-Nov 1-Nov 1-Nov 1-Nov 1-Dec 1-Dec

Pyoderma gangrenosum is a notoriously painful type of inflammatory wound often found in patients with autoimmune disorders. Manual debridement is contraindicated because it leads to increased inflammation, which increases the size of the wound (pathergy). Polymeric membrane dressings\* (PMDs) can dramatically decrease inflammation and pain due to their unique ability to subdue the nociceptor response.

The components in PMDs also work synergistically to gently continuously debride wounds, eliminating the need for routine manual cleansing at dressing changes. Microbes pulled out of the wound bed with absorbed slough are killed when they come in contact with silver PMDs. All PMDs also promote brisk wound healing by

The bar graph depicts the patient's total daily

comparative relief she reported experiencing from

individual doses of Vicodin, Darvocet and Tylenol.

analgesia medication. The scale is based on the

The line graph summarizes the patient's

patient was able to progressively resume her

normal activities while rapidly decreasing her

pain medication and prednisone as the polymeric

membrane dressing provided wound pain relief.

Prior to the use of polymeric membrane

dressings, the patient's wound pain was

with increased pain.

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elevated at dressing changes. With PMD's,

dressing changes were no longer associated

detailed pain reports on a 0 -10 scale. The

pulling nutrients from the body into the wound bed and fostering an ideal moisture balance. The patientpreferredextra-absorptive silver PMDs for their increased cushioning and fluid-handling

# **METHODOLGY:**

The patient was a true partner in

her own care, performing all dressing changes herself with clinician email and telephone guidance. Because PMDs continuously cleanse wounds, the slough was atraumatically removed without any additional action on the part of the patient. The clinician and the patient sent questions and digital photographs back and forth via email at least daily at first, tapering to weekly as the wound healed and the patient gained confidence. The patient faithfully reported data for every dressing

Initially, the wound was extremely sensitive to touch, so the patient sprayed water on the wound to make dressing changes more comfortable (see box). Her knowledge of the mechanism of action of PMDs motivated her to persist despite this initial pain. Erring on the side of diligence, dressings were changed twice daily for the first 8 weeks, then daily. No manual wound cleansing or debriding was ever required.

#### **RESULTS:**

The wound was already markedly cleaner and measurably smaller by day four. The patient rapidly weaned herself off of her narcotic pain relievers (see graph). On day twenty, the wound pain was down to 4 – 5 without any pain medications at all. After less than one month of using extra-absorptive silver PMDs on her wound, the patient was able to wear socks.

As her wound healed and the pain decreased, the patient became more physically active, which made the wound more vulnerable to injury. However, when she bumped the wound, moved heavy boxes all day, wore boots to shovel snow for several hours, etc., acetaminophen sufficiently controlled the resultant

The wound fully closed in 3½ months using extraabsorptive silver and standard PMDs as the only topical wound treatment. One year later, the patient remained pleased with the cosmetic outcome.

#### **CONCLUSION:**

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Persistent use of extra-absorptive silver PMDs resulted in decreased inflammation, excellent pain relief, brisk slough removal, increased quality of life, and steady healing to complete closure of this very challenging PG wound. All of the patient's goals were met or exceeded. As of May 2014, the wound has not recurred.

Guidance and supplies for this case study and presentation were provided by Ferris Mfg. Corp.

### **OBJECTIVES:**

- 1. Note the effectiveness of the atraumatic slough removal system built into polymeric membrane dressings (PMDs).
- 2. Recognize that inflammatory wounds respond well to the use of PMDs, which are able to limit and focus the inflammation.
- 3. Consider the advantages of eliminating the need for narcotic pain relievers through the use of PMDs, which contain a built-in pain relieving mechanism.

PMDs contain glycerin, a non-toxic surfactant, and a super absorbent starch in an extremely pliable hydrophilic foam base. These components help to create an active water flux, drawing nutrient- and enzyme-rich fluid from the body into the wound bed, separating the slough from the wound surface, and floating it so that it can be captured by the dressing. Application of PMDs may be initially uncomfortable for some patients, particularly those with very slough-filled wounds. The "pulling" sensation these patients feel as the PMDs draw fluid from the body through the wound bed can be diminished by wetting the wound with water or saline prior to the application of the dressings. This delays for a short time the pulling of the slough onto and into the PMDs, allowing the patient's body time to adapt. Experienced clinicians report this successfully alleviates initial discomfort.

Due to the extreme pain her wound had caused her, this patient was very fearful. She sprayed the wound with water prior to the application of the dressings for the first 2½ weeks. Using this technique, the patient was able to tolerate PMDs on this painful inflammatory wound even when the dressings were removing large amounts of slough.

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- \*PolyMem® PolyMem Silver Max® and PolyMem Max® Dressings are made by Ferris Mfg. Corp., Fort Worth, TX USA 800.POLYMEM (765.9636) www.polymem.com





08 Nov 2008 Before the first use of extra-absorptive silver polymeric membrane dressings (PMDs): thick slough and macerated periwound. (Day 0)





12 Nov 2008 Slough decreased to 70% without manual cleansing. Maceration resolved. Wound size decreased from 10 cm x 7.5 cm on Day 0 to 9.75 cm x 7.0 cm now. (Day 4)





28 Nov-2008 No pain medications today! No longer spraying water on wound bed at each dressing application. 8.75 cm x 6.25 cm with 20% slough, 40% granulation. (Day 20)





05 Dec 2008 Wore socks today! Taking acetaminophen occasionally, but no narcotic pain medications (see pain chart). Crusts on periwound only. 8.0 cm x 5.75 cm. (Day 27). Goals 1 & 2 met!





13 Jan 2009 VVisible wound outline through the back of standard-absorption pink PMD indicates daily dressing changes are sufficient. Extra-absorptive silver PMDs were usually used. Wound bed is clean, but extraneous periwound crusts were not disturbed, avoiding potential trauma. 5.75 cm x 3.5 cm. (Day 66)





23-Feb 2009 Closed. Leg soaked to safely and painlessly remove crusts. (Day 104) Goal 3 met!



18 Mar 2009 Standard absorption pink PMDs were used for 4 additional weeks after wound closure to strengthen the scar.



7 Feb 2010 One year after closure, wound remains closed. Excellent cosmetic outcome. Final goal met!