

## CASE STUDY

### Unique PolyMem Dressings Provide Nutrients for Wound Closure in a Profoundly Malnourished Patient

**COCCYX PRESSURE  
ULCER**



**TROCHANTER PRESSURE  
ULCER**



**SCAPULA PRESSURE  
ULCER**



PolyMem dressings were used on **all stages of healing** and **helped to decrease pain** as well as atraumatically cleansed all 3 wound beds.

# Unique PolyMem Dressings Provide Nutrients for Wound Closure in a Profoundly Malnourished Patient

DR. CHARALAMBOS AGATHANGELOU, MD, PhD Geriatrics, Dhali Community Geriatric Home, Dhali, CYPRUS

## PROBLEM

The loving but uneducated family of a 90-year-old bedridden woman chose to care for her themselves in their home. She had end-stage Alzheimer's Disease, was immobile and was severely contracted. The unairconditioned home was poorly ventilated, very hot and humid. The family fed the patient blenderized food with a syringe. She developed a malodorous Stage IV coccyx pressure ulcer as a result of poor pressure redistribution and extreme malnutrition. As the wound size progressed, the elderly patient made increasingly unpleasant vocalizations, which the family felt indicated that she was in pain. After about two weeks, the patient's family invited health workers into their home to provide wound care.

## RATIONALE

PolyMem dressings clean wounds continuously, which almost always eliminates the need for cleansing at dressing changes, saving nursing time and avoiding disruption of the new growth in the wound bed. The dressings protect the wound area from pressure and shear during movement and provide a cushion, which is important for malnourished patients. Glycerol in the dressings can serve as a source of nutrients directly at the wound site, which can be very important in patients with poor circulation or poor nutrition. These unique dressings can also provide often dramatic drug-free pain relief, which is ideal for medically fragile patients. PolyMem dressings are our dressing of choice because the actions of their various ingredients working together result in many beneficial features for our geriatric wound patients.

## METHODOLOGY

The first priority was to educate the caregivers and provide pressure relieving aids. The family agreed to reposition the patient every three hours and feed the patient protein supplements, still with the syringe. The wound was initially cleaned with betadine solution prior to extensive sharp surgical debridement. The periwound area was covered with an antiseptic cream. Daily dressing changes, which did not include any wound cleansing, were done by visiting nurses, using PolyMem Wic® cavity filler in the deep area of the wound covered with standard PolyMem dressings.

## RESULTS

The wound exudate was easily controlled using PolyMem dressings changed daily. The wound bed became steadily cleaner and the odor gradually decreased. After only a few days, granulation tissue was visible. After two weeks of PolyMem dressing use, the patient became quiet again, which was thought to indicate that she was no longer in pain.

Later the patient developed a Stage III left scapula and a Stage III left trochanter pressure ulcer, which were dressed in the same way as the coccyx wound. The family was only able to provide the patient about 450 kcal/day, but despite this, the wounds gradually closed. When the wounds became shallow, PolyMem Wic cavity filler was discontinued. PolyMem dressings were used until complete wound closure.









## CONCLUSION

PolyMem dressings cleaned all three of the pressure ulcers while controlling the exudate, odor and wound pain. Given the patient's extreme nutritional deficits, it is likely that glycerol from the dressings was metabolized directly in the wound bed to provide energy and some of the cell components needed to close the wounds.



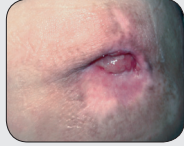
## OBJECTIVES

1. Recognize that glycerol, which is found in PolyMem dressings, is a nutrient that can be metabolized directly at the cellular level.
2. Observe that a non-verbal patient can still appreciate the decreased pain that can result from PolyMem dressings' nociceptor inhibiting abilities.
3. See how PolyMem dressings were used on this patients' wound at all stages of healing because signs of improvement were continuous to closure.








## #1 STAGE IV COCCYX PRESSURE ULCER

| NOV 14, 2007                                                                                                                  | NOV 19, 2007                                                                                                      | DEC 12, 2007                                                                                                               | DEC 28, 2007                                                                                                       | JAN 17, 2008                                                                                                                        | MAR 11, 2008                                                                                                                          | JUN 19, 2008                                                                                                                    | JAN 16, 2009                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
|                                              |                                  |                                           |                                   |                                                    |                                                    |                                              |                              |
| Initial appearance of the coccyx pressure ulcer. Sharply debrided. PolyMem Wic cavity filler and PolyMem dressings initiated. | Five days of using PolyMem dressings – no rinsing. At two weeks, the patient's pain seemed to subside completely. | At only one month, the dressings are still cleansing the wound bed. Liquefied slough is removed with each dressing change. | At six weeks, the wound bed is clean with granulating edges. Undermining is filled with PolyMem Wic cavity filler. | At two months, despite very poor nutrition, the wound is shallower. The dressings eliminated the need for pain meds or antibiotics. | The patient can take in only about 450 kcal/day, but the wound is filling in. Glycerol, found in the dressings, is a nutrient source. | At seven months, the wound is nearly closed! Palliative wound care has almost led to wound closure in this 90-year-old patient. | The scar remains very fragile, but in 14 months PolyMem dressings eliminated the painful, highly exuding wound. |

## #2 STAGE III LEFT TROCHANTER PRESSURE ULCER

| FEB 28, 2008                                                                                                                                                              | MAR 31, 2008                                                                                                                                                                       | APR 7, 2008                                                                                                                                                                            | MAY 31, 2008                                                                                                                                                                     | AUG 25, 2008                                                                                                                                                                          | OCT 13, 2008                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                         |                                                                                                  |                                                                                                      |                                                                                               |                                                                                                   |                                                                                                     |
| The severely malnourished patient developed this new Stage III pressure ulcer on her left trochanter. A PolyMem dressing was applied as soon as the wound was discovered. | In only one month, the dressings had atraumatically cleaned the wound bed while inhibiting the nociceptor response. This kept the fragile patient comfortable without medications. | At just over 5 weeks, the slough has been removed by the dressings, revealing bone just below the thin layer of muscle. Granulation tissue is quickly filling in areas of undermining. | Amazingly, at only three months the wound is almost closed. By eliminating all cleansing at dressing changes, we avoided cooling or otherwise disrupting the fragile new growth. | At five months, the wound is small and superficial. Since the woman is only taking in about 450 kcal/day, we believe glycerol from the dressings was utilized to form the new tissue. | (photo: 7½ months) The Stage III trochanter pressure ulcer fully closed some weeks previously. It did not reopen, despite the overall fragility of this "U shaped" 90-year-old patient. |

## #3 STAGE III SCAPULA PRESSURE ULCER

| DEC 7, 2007                                                                                                                                                                                                                               | DEC 24, 2007                                                                                                                                                                                                                                                    | JAN 7, 2008                                                                                                                                                                                                                                         | FEB 4, 2008                                                                                                                                                                                                         | MAR 11, 2008                                                                                                                                                                                                       | APR 7, 2008                                                                                                                                                                                          | MAY 30, 2008                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                        |                                                                                                                                                                              |                                                                                                                                                                  |                                                                                                                                  |                                                                                                                                |                                                                                                                 |                                                                                                                    |
| Three weeks after health workers began teaching the family about offloading the coccyx wound and turning the patient, they discovered this Stage III pressure ulcer on the patient's scapula. PolyMem dressings were applied immediately. | After only two weeks, the continuous cleansing action of the dressings had atraumatically removed most of the eschar and slough from the wound bed. No additional cleansing or even rinsing was needed at dressing changes. The wound odor was completely gone. | At one month, a thin layer of slough formed over the wound bed. The author resisted the urge to disturb the wound bed. His experience showed that disrupting the new granulation tissue could delay healing; the dressings would remove the slough. | PolyMem dressings draw and concentrate regenerative cells and nutrients from the body into the wound bed, promoting rapid wound closure. Glycerol from the dressings may be used as an energy source and substrate. | In just over three months, the wound was significantly shallower and smaller, despite incomplete offloading. With nociceptor inhibiting PolyMem dressings in place, the patient consistently appeared comfortable. | Undermining was completely resolved, so the PolyMem Wic cavity filler was no longer needed. Standard PolyMem dressings were the only wound care for the fragile patient. No medications were needed. | Only six months after the Stage III scapula pressure ulcer appeared, it was completely closed. PolyMem dressings were used to closure because at all stages of healing there were signs of improvement. |

This case study was unsponsored. Ferris Mfg. Corp. contributed to this poster design and presentation.



**Ferris Mfg. Corp.**

5133 Northeast Parkway | Fort Worth, TX 76106 USA

Toll Free USA: 1.800.POLYMEM (765.9636) | International: +1 630.887.9797

[www.polymem.com](http://www.polymem.com)

#### BIBLIOGRAPHY:

1. Bergstrom N, Horn SD, Smout RJ, et al. The national pressure ulcer long-term care study: outcomes of pressure ulcer treatments in long-term care. *J Am Geriatr Soc.* 2005;53(10):1721-1729.
2. Yastrub DJ. Relationship between type of treatment and degree of wound healing among institutionalized geriatric patients with stage II pressure ulcers. *Care Manag J.* 2004 Winter;5(4):213-8.
3. Beitz AJ, Newman A, Kahn AR, Ruggles T, Eikmeier L. A polymeric membrane dressing with antinociceptive properties: analysis with a rodent model of stab wound secondary hyperalgesia. *J Pain.* 2004 Feb;5(1):38-47.
4. Agathangelou C. Huge Sacral Pressure Ulcer Closed in Four Months Using PolyMem® Silver™ Dressings. Presented at 17th Conference of the European Wound Management Association (EWMA). Poster #135, May 2 – 4, 2007. Glasgow, Scotland.
5. Kahn AR. A Superficial Cutaneous Dressing Inhibits Pain, Inflammation and Swelling In Deep Tissues. Presented at the World Pain Conference, July 15-21, 2000. *Pain Medicine* 2000 June;1(2):187.
6. Fowler E, Papen JC. Clinical evaluation of a polymeric membrane dressing in the treatment of dermal ulcers. *Ostomy/Wound Manage.* 1991; (35):35-38,40-44.
7. Foresman PA, Etheridge CA, Rodeheaver G. A wound dressing evaluation of partial-thickness rat wounds. *SAWC Health Management Pub.* 1991; Annual Meeting Power Point Presentation.
8. Baharestani MM, Pope E. Chronic Wounds in Neonates and Children In *Chronic Wound Care: A Clinical Source Book for Healthcare Professionals.* 4th Edition. Editors: Krasner DL, Rodeheaver GT, Sibbald RG. HMP Communications. Malvern, PA. 2007. Page 685.
9. Goldberg S. *Clinical Biochemistry Made Ridiculously Simple.* Miami, FL: MedMaster, Inc., 1999. 10. Frank MSB, Nahata MC, Hilty MD. Glycerol: a review of its pharmacology, pharmacokinetics, adverse reactions and clinical use. *Pharmacotherapy* 1981; 1(2):147 -160.

#### ORIGINAL POSTER PRESENTED AT\*:

NPUAP 11th Biennial Conference. Poster #36. February 27 - March 1, 2009. Arlington, VA USA.

\* This version has been modified from the original; it reflects PolyMem branding.

PolyMem, PolyMem Silver, PolyMem Wic, Wic, PolyMem Wic Silver, PolyMem Wic Silver Rope, PolyMem Max, Max, PolyMem Max Silver, Shapes, Shapes by PolyMem, The Shape of Healing, The Pink Dressing, SportsWrap, SportsWrapST, More Healing • Less Pain, interlocking circles design, PolyMem For Sports, Not too Loose...Not too Tight...Just Right!, Ferris and FMC Ferris and design are marks owned by or licensed to Ferris. The marks may be registered or pending in the US Patent and Trademark Office and in other countries. Other marks are the property of their respective owners.