

# OPTIMIZING CARE OF PERI-STOMAL SKIN COMPLICATIONS WITH A NOVEL TRANSFORMING POWDER

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## BACKGROUND | RATIONALE

Patients with Crohn's Disease and stomas frequently develop peri-stomal skin complications such as wounds and Pyoderma Gangrenosum (PG) that are challenging to manage. These patients often experience excruciating pain in the wounds. Enterostomal leakages also exacerbate existing skin damage making it difficult to secure stomal appliances.

The resulting increase in the frequency of appliance and wound dressing changes aggravates pain and frustration, decreases quality of life, and increases overall costs of care. Traditional dressings used to manage such wounds often require daily dressing changes multiplying the time, materials and labor needed to provide adequate care.

The purpose of this poster is to introduce ostomy and wound care clinicians to a new technique for managing peristomal skin and wound complications using Altrazeal® Transforming Powder Dressing (TPD).

A methacrylate-based novel wound modality, TPD is available in the form of sterile white granules. Upon hydration, TPD granules aggregate over the wound bed to form a moist, oxygen permeable barrier that conforms to and seals the wound surface while allowing fluid and gaseous exchange and preventing bacterial penetration. TPD may be left on the wound for up to 4 weeks.

## OBJECTIVE

The objective was to test the feasibility of TPD in simplifying care of complicated peri-stomal wounds.

## METHOD

TPD's performance was tested in a challenging case involving a patient with significant systemic and peristomal wound complications including:

- Crohn's disease
- Pyoderma Gangrenosum (PG)
- Moisture associated dermatitis (MAD)
- Chemical (irritant) dermatitis

## THE CHALLENGE: A CASE STUDY<sup>1</sup>

Female, 60 years old with:

- Crohn's Disease for 26 years with 27 hospitalizations
- Ileum resection, colostomy, loop colostomy revision secondary to hernia complication
- Diagnosed with peri-stomal PG 3 years ago
- 18%+ unintentional recent weight loss
- Excruciating pain (10/10 based on VAS score) secondary to PG and irritant dermatitis requiring
  - Narcotics
  - Hospital admissions for pain management
  - Frequent appliance changes due to severe burning pain around the stoma
- Poorly fitting ostomy appliance and irritant dermatitis from leaking stool

**Failed Treatments:** Tested several devices and dressings. In addition, injectable and topical steroids were tried without improvement. Opioids were taken every six hours to control pain.

**Onerous Care Regime:** Daily or twice daily appliance changes performed by the patient with homecare nurse visits every other day for ostomy evaluation and wound care.

## TREATMENT WITH TPD

TPD was used as a "last resort" after consultation with the patient's gastroenterologist to manage moisture and exudate of peristomal wounds, protect the skin with MAD and irritant dermatitis, and cover PG wounds. TPD was applied after wound cleansing and covered with the appliance. The appliance remained in place over TPD without further leakage of stool.



## REFERENCES | ACKNOWLEDGEMENTS

1. Real life case study, self-reported, photographed, and provided to authors with patient permission and encouragement to share her success story with other patients with similar issues.
2. Manufactured in USA by ULURU Inc. Please see Altrazeal Instructions for Use for a complete listing of indications for use, warnings and precautions.
3. This work was supported by ULURU Inc.

## OUTCOMES | CONCLUSION

**All peri-stomal skin complications, pain, and wounds were resolved** while using TPD. Within 1 week, pain reduced from severe to minimal and wound quality improved markedly. Skin complications were resolved within days and the appliance was worn comfortably for 4 days continuously, without pain or leakage. All oral pain medications were discontinued.

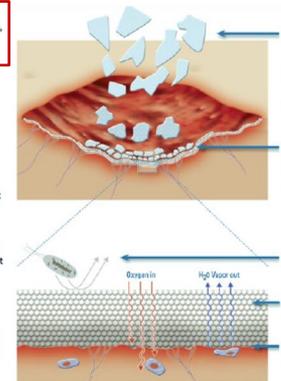
- Pain scores dropped from 10/10 to 0/10 within minutes of TPD application
- All wounds healed within two months
- Significantly improved patient's quality of life
- TPD application also resulted in several cost savings:
  - Reduced home nursing visits
  - Eliminated pain medications
  - Reduced appliance changes, supplies and labor costs
  - Avoided readmission for permanent ileostomy

**Conclusion:** Challenging ostomy complications can be successfully managed and resolved. Involving specialists and adoption of new technologies like TPD are key to delivering successful interventions and outcomes.

## ABOUT TPD<sup>2</sup>

### HOW IT HELPS:

- Wear time up to 30 days: reduces dressing changes, wound disturbance and exposure to infections
- Non-occlusive barrier: blocks entry of external bacteria but allows moisture and oxygen transportation
- Optimum moisture balance: absorbs moisture up to 68% (similar to skin tissue) but permits excess moisture to flow out
- Translucent cover: allows wound inspection without dressing removal
- Enhanced patient comfort: automatically flakes off as the wound heals or may be removed easily and atraumatically if required as it adheres without using adhesives



**HOW IT WORKS:**  
pHEMA (contact lens material) based dressing, scientifically engineered to provide an ideal wound healing environment

Its granules absorb moisture to transform into a transparent, skin-like barrier that seals and protects the wound

Prevents entry of exogenous bacteria

Permits oxygen transportation

Facilitates exudate management via vapor transportation

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# Peristomal Skin complications treated with Transforming Powder Dressing: A new Technology improves standard approaches to management

## Purpose:

The purpose of this poster is to introduce WOCN's and other providers to the value of a new technique to manage peristomal skin and periwound complications using a new Transforming Powder dressing.

## Objectives:

At the conclusion of this presentation the participant will be able to:

1. Identify Peristomal skin complications and the need for new management techniques.
2. Introduce the concept of peristomal skin management with Transforming Powder dressing.
3. Revisit novel approaches to stoma management with new innovative wound materials.

## Abstract:

Surgical patients with stomas and abdominal fistulas are some of the most challenging patients to manage when the peristomal and periwound skin is damaged. The weeping moisture from the damaged skin affects the ability to keep an appliance in place to control enteric discharge. Enterostomal soiling will exacerbate the skin condition making management even more difficult. The end result is a painful stoma or fistula site that patients find nearly impossible to manage on their own and require frequent re-application of the appliance increasing their cost of supplies. A new Transforming Powder Dressing material has become available that can help protect and heal damaged peristomal and wound skin while managing moisture successfully. Moisture management becomes critical to success with problematic appliance placement. Creativity with pouching and a new Transforming Powder Dressing has helped patients with peristomal skin wounding and mucocutaneous separation. Transforming powder dressing not only allowed them to heal, but helps extend wear time of the appliance. Two illustrative cases are presented to demonstrate this innovative approach to stomal care.

## Methods and Materials:

Transforming Powder dressing was applied to a patient's stoma complicated by mucocutaneous separation and peristomal skin wounding. The appliance was applied over the powder dressing and monitored.

A second patient developed a high output abdominal fistula.

Transforming powder dressing was used to protect the skin damaged by enteric content. With skin protected by Transforming Powder Dressing, the fistula was controlled with suction and film.

## Results:

Used under a stomal appliance, the mucosal separation healed as did the skin wounding. The stoma appliance was placed over the powder dressing and worked well to protect the skin from further damage from leakage. The mucosal skin separation was filled with Transforming Powder dressing and sealed with the stomal appliance to avoid leakage. Appliance wear time was extended which contributed to healing the peristomal skin.

Transforming powder protected the skin in a case of difficult to control high output fistula and allowed the patient to be successfully managed. Without the powder dressing, the patient had pain and irritation from the skin exposure from enteric contents. The Transforming Powder Dressing worked well to protect the skin and conformed to the shape of the wound. These results are illustrated in the Case Studies.

## CASE 1

Damaged peristomal skin and mucocutaneous separation



Transforming Powder Dressing applied



Stomal appliance applied over powder dressing



Peristomal Skin and mucocutaneous separation healed



## CASE 2

Small Bowel Fistula developed in midline wound



Transforming Powder Dressing applied to protect skin



Powder covering skin and fistula walled off with stoma paste



Film applied to cover suction and control fistula effluent



## Discussion:

When skin breakdown and mucocutaneous separation occur, ostomy leakage becomes more likely. Repeated skin injury may result in damaged skin and a weeping stoma area that will not accept an appliance. Prompt attention and effective treatment will more likely heal the condition and avoid lasting complication. Management of the moisture is imperative to fitting and securing the appliance footplate. Appliance leakage and failure becomes a result of repeated skin injury and can become cyclical, impacting on the patients self-esteem and quality of life. Transforming Powder dressing manages moisture and protects the wound bed from external contamination. We found that the stomal appliance can be placed over the powder dressing and remain in place to heal and protect the skin.

Small bowel fistulas when high output, are difficult to control. The surgeon is reluctant to re-operate within the first 12 weeks so as to avoid a "difficult abdomen" situation and run the risk of further complication. Having a management strategy that is effective in controlling the fistula and allow time to resolve the hostile post-operative abdomen is essential. Transforming Powder Dressing controlled the complicated skin issues that occurred with this difficult fistula. Enterostomal Therapists may find this technique useful in caring for their stomal and complex wound patients.

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# New Transforming Powder Dressing as a Cost Effective Management Technique in a case of Difficult to Heal Peristomal Pyoderma Gangrenosum

## Purpose:

The purpose of this presentation is to evaluate a unique new Transforming Powder Dressing and its cost effectiveness in managing a difficult Peristomal Pyoderma in a patient unsuitable for surgical stoma relocation.

## Objectives:

- At the conclusion of this presentation the participant will be able to:
1. Identify a difficult to manage case of peristomal Pyoderma Gangrenosum and challenges in stoma appliance application while recognizing the potential of a new Transforming Powder Dressing.
  2. Evaluate the preliminary pharmacoeconomics in treating peristomal problematic wounds using an alternate therapy technique with a Transforming Powder Dressing vs. conventional care methods.
  3. Realize that Transforming Powder can be combined with actives to uniquely enhance its application in treating wounds.

## Abstract:

Pyoderma Gangrenosum is a difficult condition to treat for any wound care provider. When Pyoderma occurs around a stoma, the inability to apply an appliance complicates healing and increases patient discomfort. When the appliance fails as a result of excessive drainage, cost of multiple ostomy appliance applications becomes an issue as Medicare limits the number of appliances to the patient per month. The unique properties of Transforming Powder dressing has application to protect the peristomal wound and allow placement of a stoma appliance while managing fluid and exudate. The powder dressing reduces pain and can be combined with active treatments to be delivered into the wound to promote and manage healing. This presentation demonstrates the utility and uniqueness of a new technology of wound dressing material and how it is used to treat the wound, manage exudate and increase the appliance wear time. Increasing appliance wear time has been instrumental helping the patient's care to become compliant with Medicare monthly limitations regarding stoma supplies. This represents substantial savings for the patient, eliminating out of pocket costs.

## Methods:

Transforming Powder Dressing was used to manage the moisture and exudates of the peristomal wound to allow placement of a stoma appliance. Powder was applied to the wound and aggregated with saline. Transforming Powder was also combined with Cadexomer Iodine, Triamcinolone Acetonide, and Cromolyn Sodium as the dressing formed to actively manage the wound bioburden and treat the underlying pyoderma. Calcium Alginate was shredded into tufts and applied above the aggregated powder dressing to absorb transpired moisture vapor. The appliance was applied over the alginate and secured.



Table 1

| APPLIANCES                 | PBE POWDER  | WITH POWDER |
|----------------------------|-------------|-------------|
| Daily                      | 3           | Less than 1 |
| Monthly                    | 90          | 20          |
| Cost \$ 90 per 5           | \$ 1,620.00 | \$ 360.00   |
| Monthly Savings to Patient |             | \$ 1,260.00 |

## Case Presentation:

A 70 year old white female who had undergone abdominal colectomy with ileostomy for ulcerative colitis presented to the wound clinic with a deeply cavitated peristomal wound. She had not been able to keep an appliance on the stoma and had been using 3 to 4 appliances per day with no success. She had been paying out of pocket for the additional appliances not covered by Medicare; coverage limits are 20 appliances per month. She had been using convex appliances at a cost of \$ 90/5 appliances at a local DME. She described constant pain and irritation from the wound. She was unable to carry on normal daily functions due to frequent failure of her appliance. Biopsy of the wound demonstrated "changes of acute and chronic inflammation and granulation tissue formation. Pyoderma Gangrenosum can not be excluded." Often associated with Ulcerative Colitis, Peristomal Pyoderma has this typical appearance. The patient had a complicated congestive heart failure that would prevent surgical relocation of her stoma. Local wound and stoma management was required to help this patient.

## Results:

The technique of application was taught to the patient's daughter and granddaughter who assisted with appliance fitting throughout the week. Successful wound management allowed the appliance to stay in place for 3 to 4 days and eliminated out of pocket costs for the excess appliances. Cost savings assuming 3 appliances per day represented \$ 1260 monthly to the patient. The patient's peristomal wound shows evidence of healing and she admits the pain is controlled. Most importantly the patient's quality of life is immediately improved by managing her stoma function satisfactorily giving her the freedom to go out into the community. The patient and her family used an average one 2 gram pouch of Transforming Powder Dressing weekly for a supply cost of \$ 27.

## Conclusion:

A unique new Transforming Powder Dressing was used to manage a difficult peristomal wound. Appliance wear time was normal and was responsible for the patient's usage of appliances to be compliant with Medicare allowable supplies. This represents a very substantial savings of out of pocket costs to the patient of \$ 1260 per month. The ability of this material to manage exudate from a wound by virtue of its high moisture vapor transportation rate allowed the appliance to stay in place despite a difficult wound condition. Additionally, the ability to combine active agents with the dressing and have them delivered at the wound surface as treatment is an important part of wound management in this case. Bioburden can be addressed with combining cadexomer iodine with the powder at application. Triamcinolone acetonide and Cromolyn sodium were combined with the powder dressing at application to treat the inflammation and address the underlying pyoderma which can impact on healing. This technique is effective and helpful in a variety of stoma conditions encountered by enterostomal therapists and WOCN's. The versatility of this material has application in a wide variety of wound conditions as demonstrated in this case.

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