

# P2323 | Case Series: Chronic Wounds Treated With a Novel Transforming Powder Dressing

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## BACKGROUND

Chronic wounds are associated with differing burdens for patients, health care professionals and health care systems. There is a high impact on quality of life for patients. Pain, exudation, malodor, and the resulting restrictions of leisure activities are typical. Transforming Powder Dressing (TPD) represents a novel transforming methacrylate-based dressing in powder form. Hydration of the powder granules leads to an irreversible aggregation. The resulting dressing conforms exactly to the wound surface and provides a moist wound environment. We present the results of a case series of patients with chronic stagnating wounds treated with TPD.

## OBJECTIVES

The objective was to evaluate the impact of treatment with TPD on the reduction of wound size and pain score over an observational period of 12 weeks.

## METHODS

We treated 11 patients with chronic wounds of different etiologies (Table 1) with Transforming Powder Dressing. All patients had received the best practice treatment and had experienced stagnation of wound healing for at least three months prior to the treatment with TPD. The observational period lasted 12 weeks. Wounds were inspected for a dressing change (or addition / top-off of more powder) every seven to fourteen days by a wound specialist. For every visit wound size and pain score (on the visual analogue scale - VAS) were obtained. Descriptive measures were computed. Quantitative variables were described as qualitative data as n in %, as mean with standard deviation (SD) for continuous variables. All analyses were performed using IBM SPSS, Windows® software version 23.0.

## RESULTS

### Study population

We included and analysed data of 11 chronic wounds from 11 patients, of which seven patients (64%) were female. The mean age was 63 years. The wounds were of different etiologies. Table 1 shows basic characteristics of the study population.

Tab. 1 Study population

Patient Number	Age in years	Gender	Duration before treatment in months	Etiology of the wound
1	74	Female	24	Post-thrombotic syndrome
2	61	Female	11	Pyoderma gangrenosum
3	24	Female	12	AV-Malformation
4	76	Female	12	Postoperative wound healing disorder
5	70	Female	12	CVI and mixed connective tissue disease
6	52	Female	156	Urticaria vasculitis
7	79	Female	7	Calcinosis cutis
8	64	Male	28	Peripheral arterial occlusive disease
9	72	Male	10	Diabetic foot and peripheral arterial occlusive disease
10	71	Male	8	Peripheral arterial occlusive disease
11	47	Male	30	CVI and mixed connective tissue disease

## RESULTS

### Wound size

The mean wound size decreased from 12.6 cm<sup>2</sup> at visit 1 to 2.7 cm<sup>2</sup> at last visit in week 12 (Table 2, Figure 1). The mean relative difference of wound size between visit 1 and the last visit was reduced by 40.9 % (SD 86.6 %). Four of 11 wounds full closure.

Tab. 2 Wound size in cm<sup>2</sup>

	Day 0	After 4 Weeks	After 8 Weeks	After 12 Weeks
Number of patients	Valid	11	11	9
	Missing	0	0	2
Mean	12.60	8.85	3.78	2.65
Median	8.75	7.50	1.33	1.08
Standard deviation	13.69	12.82	5.28	3.05
Minimum	1.80	.30	0.00	0.00
Maximum	49.00	45.50	14.00	6.96

Figure 1. Wound size (cm<sup>2</sup>)

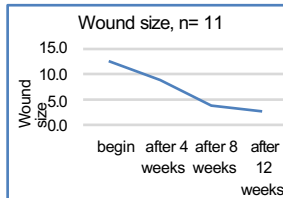
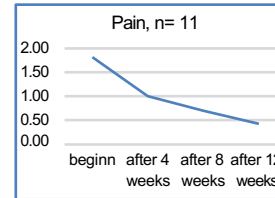


Figure 2. Pain score (VAS 0-10)



### Pain score

The pain score decreased from 1.8 (SD 2.1) at visit 1 to 0.4 (SD 1.1) at the last visit (Figure 2). Four of 11 patients had painless wounds.

### Drop outs

During the treatment period 3 dropouts were observed. Patient 2 discontinued treatment because lack of time for consultations. Patients 10 and 11 discontinued treatment because of the progression of the wounds in week 8.

### Clinical presentation

Figure 3. Patient 1 - Postoperative wound healing disorder



## RESULTS

### Clinical presentation

Figure 4. Patient 6 – Urticaria vasculitis



Figure 5. Patient 5 - CVI and mixed connective tissue disease

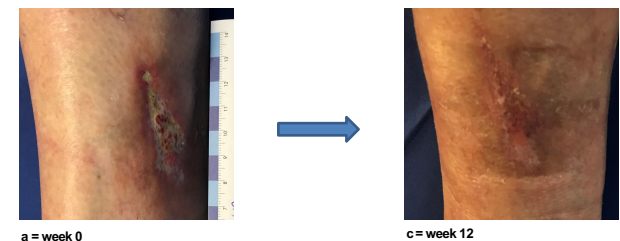


Figure 6. Patient 7 – Calcinosis cutis



## CONCLUSION

TPD offers a promising approach to treat chronic wounds. Reduction of wound size and pain contribute to a better quality of life and can reduce costs for the health care system. A highly beneficial characteristic of TPD observed during this study was the marked reduction in the frequency of dressing changes. In clinical routine, the mean period between dressing changes was about 2 weeks, suggesting the product offers a promising alternative to conventional dressings.

# Controlling Wound Edema with Fuzzy Yarn Focused Compression in Direct Contact with Granulation Tissue Speeds Healing



## Recurrent Pretibial Stasis Ulcer

**Problems**

- Stasis Dermatitis and Ulcer x 20 years



Fig. 1. Recurrent pretibial stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.



Fig. 2. Recurrent pretibial stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.

**Rx**

- Polymer powder LYC dressings 2x week

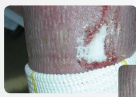


Fig. 3. Recurrent pretibial stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.



Fig. 4. Recurrent pretibial stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.

**Outcome**

- Polymer powder gel controls ulcer pain. Patient compliance is high,
- Ulcers heal with two wound center visits over 32 days



Fig. 5. Recurrent pretibial stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.



Fig. 6. Recurrent pretibial stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.



## Stasis Ulcer

**Problems**

- Calf Skin Slough
- Hemodialysis
- Diabetes
- Coronary Disease
- Saphenous Vein Harvest Incision

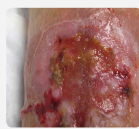


Fig. 7. Stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.



Fig. 8. Stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.



Fig. 9. Stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.

**Outcome**

- Yarn Focused Compression directly on wound surface results in healing



## Chronic Stasis Dermatitis

**Problems**

- Chronic Stasis dermatitis
- Warm weather triggers bilateral calf stasis ulcers
- Peripheral Vascular disease



Fig. 10. Chronic stasis dermatitis, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.

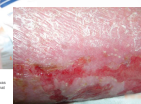


Fig. 11. Chronic stasis dermatitis, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.



Fig. 12. Chronic stasis dermatitis, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.



Fig. 13. Chronic stasis dermatitis, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.

**Rx**

- Polymer powder gel
- Yarn Focused Compression in direct contact with wound granulation tissue

**Outcome**

- Rapid control of stasis edema and skin edema
- Rapid epithelization of wound surface



Fig. 14. Chronic stasis dermatitis, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.



## Recurrent Pretibial Stasis Ulcer

**Problems**

- Stasis Dermatitis, recurrent ulcers x 20 years



Fig. 15. Recurrent pretibial stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.



Fig. 16. Recurrent pretibial stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.



Fig. 17. Recurrent pretibial stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.



Fig. 18. Recurrent pretibial stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.

**Rx**

- Polymer powder dressings (2 per week)

**Outcome**

- Polymer powder gel controls ulcer pain
- Longitudinal Yarn Compression stockinet (LYC) in direct contact with granulation tissue speeds healing
- Ulcers healing, at time of publication, after 17 days of Longitudinal Yarn Compression.



Fig. 19. Recurrent pretibial stasis ulcer, 20 years. The ulcer is located on the medial malleolus and is surrounded by stasis dermatitis. The ulcer is approximately 4 cm in diameter and is deep to the level of the tibia. The ulcer is surrounded by a thick, yellow, crusting material. The ulcer is surrounded by a thick, yellow, crusting material.

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Controlling Wound Edema with Yarn Focused Elastic Compression in Direct Contact with Granulation Tissue Speeds Healing

Revised Objective:

Control the edema of the wound surface with the use of Yarn Focused Elastic Compression (LYC) in direct contact with granulation tissue.

Problem: Chronic edema of the wound surface is a major barrier to healing. Edema resulting from increased hydrostatic pressure in the wound bed impedes the delivery of oxygen and nutrients to the wound surface, which impedes the healing process.

Method: Yarn Focused Elastic Compression (LYC) in direct contact with granulation tissue was used to control the edema of the wound surface.

Results: Chronic edema of the wound surface was controlled with the use of Yarn Focused Elastic Compression (LYC) in direct contact with granulation tissue. The wound surface was healed after 17 days of LYC.

Conclusion: Chronic edema of the wound surface was controlled with the use of Yarn Focused Elastic Compression (LYC) in direct contact with granulation tissue. The wound surface was healed after 17 days of LYC.

elastic compression, directly in contact with wound granulation tissue, control edema and increase wound healing time to 17 days. LYC, associated with the use of a polymer powder gel, controls edema of the wound surface. The use of LYC in direct contact with granulation tissue speeds healing.

Method: Elastic compression, directly in contact with granulation tissue, was used to control the edema of the wound surface.

Results: Chronic edema of the wound surface was controlled with the use of Yarn Focused Elastic Compression (LYC) in direct contact with granulation tissue. The wound surface was healed after 17 days of LYC.

Conclusion: Chronic edema of the wound surface was controlled with the use of Yarn Focused Elastic Compression (LYC) in direct contact with granulation tissue. The wound surface was healed after 17 days of LYC.

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