Use of a Cellular Human Repair Matrix for Chronic Wounds in Patients Taking Long-term Corticosteroids

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Abstract

Introduction

Despite the introduction of advanced wound therapies, patients with underlying auto-immune disorders requiring chronic, oral corticosteroids pose a complicated challenge for practitioners. Corticosteroids have been shown to reduce re-epithelialization, decrease fibroblast response, and inhibit collagen synthesis leading to delayed wound healing and decreased tensile strength.^{1,2} A retrospective case series of the use of a cellular human repair matrix* in patients with chronic wounds on oral corticosteroids is reported.

Methods

Seven patients (6 female, 1 male) requiring chronic, oral corticosteroids at doses of 5-10 mg per day for rheumatoid arthritis (n=6) or advanced COPD (n=1) were treated with the cellular repair matrix at an outpatient wound care center between April 2010 and March 2012. Wound types included 4 venous leg ulcers (VLUs), 2 traumatic wounds, and 1 diabetic foot ulcer (DFU). All wounds had failed previous therapies, 5 of whom had failed advanced therapies. Mean wound size was 8.27cm² (range 0.89 to 33.6cm²). All patients received standard of care including regular wound evaluation and wound debridement. The treatment regimens were determined at each visit based on clinical appearance. Four examples are presented in this poster.

Complete re-epilthelialization was achieved in all 7 patients within 16 weeks (range 2-16 weeks). Among patients with VLUs, mean time to closure was 4.25 weeks (range 2-7 weeks). Patients received an average of 3 grafts (range 2 to 7). There was no recurrence of any wound with maximum follow-up out to one year. There were no reported safety issues related to application of the grafts.

Conclusion

Patients with chronic wounds requiring oral corticosteroids pose additional challenges to heathcare providers. The use of a cellular human repair matrix shows promise in the treatment of these complicated, refractory wounds and should be considered early in the treatment course.

1. Poetker DM, Reh DD. A comprehensive review of the adverse effects of systemic corticosteroids. Otolaryngologic clinics of North America 2010;43:753-68. 2. Wang AS, Armstrong EJ, Armstrong AW. Corticosteroids and wound healing: clinical considerations in the perioperative period. American journal of surgery 2013.

*Grafix® PRIME

Osiris Therapeutics, Inc. Columbia, MD

Case 1

Patient Information and Medical History

- History of rheumatoid arthritis and venous insufficiency, taking 5mg of prednisone daily.

Wound Description

- Presented with a 0.89cm² venous ulcer on dorsum of left foot.
- Wound present for 10 weeks prior to application of cellular repair matrix.
- Failed alginate dressing and compression treatment.

Treatment and Outcome

- Patient received 7 applications of the repair matrix.
- Wound closure in achieved in 7 weeks.



Prior to Treatment











Week 7 - Closure

Case 2

Patient Information and Medical History

65-year old female.

• History of rheumatoid arthritis, venous insufficiency, diabetes mellitus, non-compliance, taking 5mg of prednisone daily.

Wound Description

- Presented with a 33.6cm² traumatic wound on right lower leg.
- Wound present for 16 weeks prior to application of cellular repair matrix.
- Failed silver dressings and porcine small intestinal submucosa product.

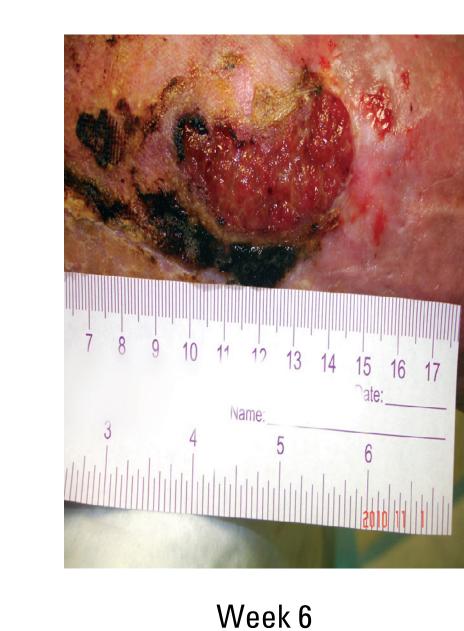
Treatment and Outcome

- Patient received 3 applications of the repair matrix.
- Wound closure achieved in 16 weeks.

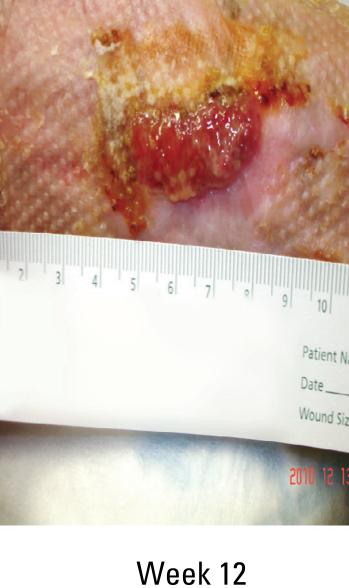


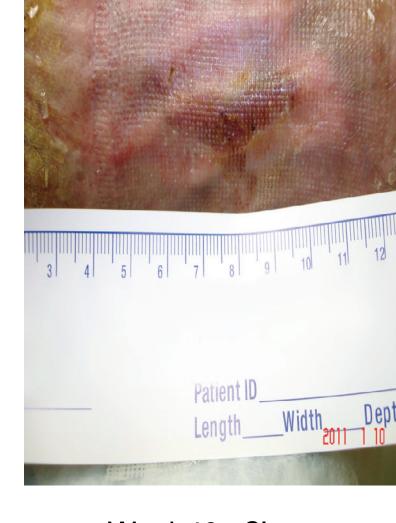


Week 2









Week 16 - Closure

Case 3

Patient Information and Medical History

- 73-year old female.
- History of rheumatoid arthritis, chronic obstructive pulmonary disease, tobacco use, taking 5mg of prednisone daily.

Wound Description

- Patient presented with 5.8cm² venous ulcer on dorsum of right foot.
- Wound present for 32 weeks prior to application of cellular repair matrix.
- Failed porcine small intestinal submucosa product prior to treatment.

Treatment and Outcome

- Patient received 3 applications of the repair matrix.
- Wound closure achieved in 4 weeks.



Prior to Treatment







Case 4

Patient Information and Medical History

- 78-year old female.
- History of rheumatoid arthritis, venous insufficiency, tobacco use, taking 7.5mg of prednisone daily.

Wound Description

- Patient presented with 10.6cm² venous ulcer on dorsum of right foot.
- Wound present for 12 weeks prior to application of the cellular repair matrix.
- Failed silver dressing and porcine small intestinal submucosa product prior to treatment.

Treatment and Outcome

- Patient received 2 applications of the repair matrix.
- Wound closure achieved in 4 weeks.



