

Treatment of chronic parastomal ulceration with silver sulfadiazine and hyaluronic acid: a case series

ABSTRACT

Skin complications in ostomates are widely reported and can cause physical and emotional challenges in everyday life. Chronic parastomal skin complications can be difficult to heal and cause significant pain.

Two patients presented to the stomal therapy clinic for treatment and were diagnosed with chronic parastomal skin ulceration. Following standard treatment of wound management, topical corticosteroid ointment and appliance review, the ulcers were either not improving or had reoccurred. Treatment with a combination cream consisting of 0.2% Hyaluronic acid (HA) and 1% Silver sulfadiazine (SSD) was initiated and both patients demonstrated complete healing.

Treatment of parastomal skin ulceration with dual action cream 0.2% HA and 1% SSD was successful for these two patients, with a reduction in pain and purulent fluid noted throughout treatment, in addition to a reduced cost of treatment when compared with standard protocols.

Keywords peristomal skin, hyaluronic acid, wound, silver sulfadiazine

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INTRODUCTION

The risk of an ostomate developing a peristomal skin complication in their lifetime has been estimated as anywhere from 6–80%¹. Ostomates with a skin complication report negative body image at a greater rate². Male ostomates with a skin complication were 1.72 times more likely to report negative body image than ostomates with no skin complications, and female ostomates were even higher at 1.87 times more likely to report negative body image². These complications account for approximately 40% of all visits to stoma care nurses³.

Peristomal and parastomal skin complication causes can be complex and include chemical injury, skin trauma, infection, contact dermatitis and disease related conditions⁴. Peristomal skin complications are more common in patients with an ileostomy (57%) and a urostomy (48%) than those with a colostomy (35%)⁵. Although peristomal skin complications, including ulcers, are quite common, chronic parastomal ulcers are unusual and can be difficult to manage⁶.

Ostomates who develop parastomal ulcers often have underlying conditions such as Crohn's disease, irritable bowel disease (IBD) or Pyoderma gangrenosum (PG). Treatment and management of a parastomal ulcer consists of appliance review, wound care, systemic treatment (if patient has Crohn's disease, IBD or PG) and local treatment, usually a corticosteroid⁶. If a patient does not have Crohn's disease, IBD or PG, their parastomal ulcer is likely to respond quickly to local wound treatment⁶. Symptoms often include pain, appliance difficulties and leakage⁶. Often these ulcers may not look severe, but ostomates describe a strong burning pain, exacerbated by appliance changes⁶.

Stoma-associated skin complications have a wide ranging impact on an ostomate's quality of life, and it is vital they are resolved quickly. The aim of this case study is to examine two ostomates with parastomal ulceration in which the standard treatment plan failed, with ostomates then trialling a new combination treatment of 0.2% Hyaluronic acid (HA) and 1% Silver sulfadiazine (SSD).

PRODUCT ACTION

HA induces an accelerated tissue repair reaction, characterised by the growth of well-organised granulation tissue. HA receptor binding engages endothelial cells, macrophages, fibroblasts and keratinocytes and modifies their properties

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toward a more “repair oriented” condition^{7,8}. In addition to stimulating cellular repair mechanisms, the substantial water binding capacity of HA molecules provides ideal conditions for migration and reproduction of the cells that form new tissue^{7,8}.

SSD is a combination of two antimicrobial agents (silver and sulfadiazine) with broad spectrum antibacterial properties and is especially effective against those micro-organisms often found in infected skin lesions⁹. Applied on exudative wounds, SSD releases its silver ions, which increase the bacteriostatic effect of the sulfonamide radical. The sustained antimicrobial action of the sulfadiazine and silver combination is due partly to the continuous interaction with the fluids on the wound bed, which induces a slow, prolonged release of silver⁹.

Combination treatment of HA plus SSD (HA+SSD), as compared to SSD alone, has been proven to accelerate the repair process while also providing broad spectrum antibacterial action¹⁰. Clinical studies have demonstrated using the combination product of HA+SSD resulted in a reduction of nursing time, expenses and use of pain relief medication^{11,12}.

CASE PRESENTATIONS

Case 1

Patient TW is an 80-year-old female who underwent a total proctocolectomy with formation of an end ileostomy in May 2020. The patient’s ileostomy was healthy and the peristomal skin remained intact until she presented to the stomal therapy outpatient clinic in July 2021 with an ulcer of unknown aetiology. The ulcer measured 80mm x 50mm and was adjacent to her stoma at 10 o’clock. There was no pain and no odour noted, with low serous exudate and a soft base of the wound.

Management and outcome

Treatment initiated on 22 July 2021 (Figure 1) was a corticosteroid ointment, a silver antibacterial barrier dressing and a hydrocolloid dressing. The dressing was changed daily in conjunction with changing their ostomy appliance. After 1 month of treatment (Figure 2) the wound was 100mm x 50mm, with a clean base and purulent fluid present. The peri-wound skin was fragile and at risk of further breakdown. The patient’s colorectal surgeon had considered a biopsy to rule out infection of the wound with PG if the wound continued to show no signs of improvement.

The initial treatment was ceased and treatment with a cream containing 0.2% HA and 1% SSD was initiated (HA+SSD). Treatment was daily in conjunction with changing their ostomy appliance, which was the patient’s preference (Figure 3).

Following treatment with HA+SSD cream the wound continually reduced in size until it was healed. There was no pain or odour noted and the serous exudate reduced. On 16 September (Figure 4) treatment was ceased and the patient was advised to restart treatment if any break down of the wound reoccurred; however, the wound continued healing (Figure 5) and has remained healed almost 12 months later.



Figure 1. Case study 1 – 22 July



Figure 2. Case study 1 – 19 August



Figure 3. Case study 1 – 2 September



Figure 4. Case study 1 – 16 September (treatment ceased)



Figure 5. Case study 1 – 1 October

The treatment cost of standard vs combination HA+SSD treatment showed significant differences (Figure 6). The combination SSD + HA treatment was greater than 40% less expensive per dressing change, with only 25% of the tube being used in total.

Case 2

Patient ML is an 84-year-old male who had an ileal conduit formed in 2007. The patient’s ileal conduit and peristomal skin was healthy following surgery and had not been reviewed by a stomal therapist in 11 years. The patient presented to the stomal therapy outpatient clinic in June 2021 with peristomal ulceration and skin loss. The ulcer measured 20mm x 40mm and extended from the stoma edge from 12 o’clock to 7 o’clock. The ulcer was extremely painful with a sloughy base, low serous exudate and no oedema or odour.

Management and outcome

Treatment initiated on 16 June 2021 (Figure 7) was a corticosteroid ointment every second week, a silver antibacterial barrier dressing and a large and a small hydrocolloid ostomy seal. The dressing was changed according to patient preference and when the ostomy appliance leaked, which ranged from once per day to once per week.



Figure 6. Case 1 – cost comparison of standard treatment vs combination HA+SSD treatment on a weekly and daily basis

Following 6 weeks of treatment (Figure 8), the ulcer was healed and treatment was ceased; however, the new granulation tissue in the 5 o'clock to 7 o'clock section of the ulcer appeared to be very fragile. The patient then re-presented on 8 October with the ulcer having broken down again (Figure 9). The wound measured 10mm x 5mm, with a sloughy pale base, wound edge maceration, low exudate and no pain, no oedema and no



Figure 7. Case study 2 – 16 June



Figure 8. Case study 2 – 6 August



Figure 9. Case study 2 – 8 October



Figure 10. Case study 2 – 15 October



Figure 11. Case study 2 – 29 October



Figure 12. Case study 2 – 26 November

odour. At this stage the patient reverted to the initial treatment regime of a corticosteroid ointment every second week, a silver antibacterial barrier dressing and a hydrocolloid ostomy seal. The dressing was changed every 2–3 days, in conjunction with the ostomy appliance.

After 1 week (Figure 10) the wound was increasing (10mm x 20mm) and the initial treatment was ceased and treatment with a cream containing 0.2% HA and 1% SSD was initiated (HA+SSD). Treatment occurred every two days in conjunction with changing their ostomy appliance, which was according to patient preference.

Following treatment with HA+SSD cream the wound continually reduced in size until it was healed. Two weeks following initial treatment (Figure 11) the wound had reduced from 10mm x 20mm to 5mm x 5mm. There was pink granulation tissue, low serous exudate and some maceration noted at the wound edges. No pain, oedema or odour were noted. Six weeks following treatment (Figure 12) the wound had healed and has since remained healed.

The treatment cost of standard vs combination HA+SSD treatment showed significant differences (Figure 13). The combination HA+SSD treatment was greater than 50% less per dressing change, with only 25% of the tube being used in total.

DISCUSSION

Both patients presented with parastomal ulcers of unknown aetiology which did not resolve with standard treatment. Following treatment with combination cream treatment 0.2% HA and 1% SSD (HA+SSD) the ulcers were successfully managed and healed. A small pea-sized amount of the combination cream was applied in a thin layer directly to the ulcer using a Q-tip, with no secondary dressing and the ostomy appliance applied on top. The application of cream underneath the baseplate did not affect adhesion of the hydrocolloid, and both patients reported no leakage or baseplate lifting prior to their pouch change schedule. This treatment facilitated discharge of patients from stomal therapy clinic, and both ulcers have remained healed since.



Figure 13. Case 2 – cost comparison of standard treatment vs combination HA+SSD treatment on a weekly and daily basis

CONCLUSION

The cost of standard treatment compared to combination treatment of HA+SSD was significant. For Case 1 the cost of standard treatment was 1.68 times higher than the combination treatment, and for Case 2 the cost of standard treatment was 2.08 times higher than the combination treatment. In addition, the standard treatment failed for both patients and the wounds were still not healed after weeks of treatment, whereas the cost of combination treatment was calculated as time to wound healing. The significant cost difference of the HA+SSD combination cream compared to standard parastomal ulcer treatment (not taking into account additional GP reviews for scripts of Kenacomb®) indicates it could be an effective, low-cost intervention which could be applied at first presentation of a parastomal ulcer.

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The patients consented to the use of their information for this case study. Photographs were taken with the patients' verbal and written consent.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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REFERENCES

1. Norman T, Haesler E, Carville K, et al. Establishing a consensus on stomal, parastomal and peristomal complications. *J Stomal Therapy Aust* 2022;42(2):10–19.
2. Nichols TR, Riemer M. Body image perception, the stoma peristomal skin condition. *Gastrointest Nurs* 2011;9(1):22–26.
3. Antonini M, Arena R, Mancini S, et al. Peristomal skin changes: what treatment should be adopted? Results of an observational multi-centre study. *WCET J* 2018;38(1):30–34.
4. Taneja C, Netsch D, Rolstad BS, et al. Clinical and economic burden of peristomal skin complications in patients with recent ostomies. *J Wound Ostomy Cont Nurs* 2017;44(4):350–357.
5. Herlufsen P, Olsen AG, Carlsen B et al. Study of peristomal skin disorders in patients with permanent stomas. *J Wound Ostomy Cont Nurs* 2013;40(4):400–6.
6. Yeo H, Abir F, Longo WE. Management of parastomal ulcers. *World J Gastroenterol* 2006;12(20):3133–7.
7. Chen CP, Hung W, Lin SH. Effectiveness of hyaluronic acid for treating diabetic foot: a systematic review and meta-analysis. *Dermatol Ther* 2014;27(6):331–6.
8. Voigt J, Driver VR. Hyaluronic acid derivatives and their healing effect on burns, epithelial surgical wounds, and chronic wounds: a systematic review and meta-analysis of randomized controlled trials. *Wound Repair Regen* 2012;20(3):317–31.
9. Farris A, Prosdocimi M, Bevilacqua C. Association of hyaluronic acid and silver sulphurdiazine for topical use: rational basis and recent clinical evidence in wound healing. *Farmaci* 2010;9(6):1–7.
10. Costagliola M, Agrosi M. Second degree burns: a comparative, multicentre, randomized trial of hyaluronic acid plus silver sulfadiazine alone. *Curr Med Res Opin* 2005;21(8):1235–40.
11. Soma PF, Stella M, Comitini S. Role of a HA based hyaluronic acid in re-epithelisation: a clinical model. 37th National Meeting of the Italian Society of Plastic, Reconstructive, and Aesthetic Surgery, 1988.
12. Torregrossa F, Caroti A. Clinical trial of the topical use of hyaluronic acid-soaked gauzes in the treatment of sluggish ulcers. *Giorn Int Derm Vener* 1983;118.