

Where a Soft Convex Skin Barrier May Improve Security and Fit While Supporting Skin Health

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Abstract

A key goal of care for the new stoma patient is to acquire the skills for managing their stoma and treatment, as well as the psychosocial skills to integrate their stoma into their daily life.¹ This goal for independence can become more difficult to achieve when other conditions arise during their recovery. Successful patient outcomes can rely on the clinician being proactive in decision-making regarding initial and subsequent product selection while identifying challenges early to help ensure the road to independence and self-care is as smooth as possible.

This case study reports on a patient where the initial proactive choices were appropriate but required modification as circumstances changed. It highlights the benefits of ongoing review in optimising patient outcomes as well as considering the different types of convexity and their individual strengths.

Background & Surgical History

Mrs. N (initial changed to protect privacy) is a 79-year-old retired widow with two children. She has a history of breast cancer and was diagnosed with cancer of the colon and rectum for which she had a left hemicolectomy and the formation of an end colostomy in February 2021. (See Figure 1)

She has no known history of inflammatory bowel disease (IBD), such as ulcerative colitis and Crohn's disease. However, she does suffer from another inflammatory condition - rheumatoid arthritis. Additionally, Mrs. N always appeared rather anxious and worried about her prognosis, her stoma, and expressed concerns regarding her future care.

After surgery, her stoma was reasonably flush to her abdomen and considering the concerns of potential leakage, a proactive decision was made to place her in a firm convex pouching system to help mitigate this risk and help assuage her concerns. She was discharged on a Hollister two-piece drainable system with a firm convex skin barrier which she managed well while in hospital.

Challenges

Soon after discharge, Mrs. N was commenced on a six-month program of chemotherapy. She soon developed severe 'pins and needles' in all her extremities as well as some vision impairment. This pins and needles phenomenon is known as 'peripheral neuropathy' and is a well-documented side-effect of chemotherapy.² For many people peripheral neuropathy is a short-term issue, but for others, it can last a long time or even be permanent.² Vision impairment is also associated with chemotherapy and can manifest in several ways.³ Most eye changes related to medications are temporary and go away by adjusting the dose or stopping the drugs, but some may become permanent, and as such, prevention monitoring is essential.³

In May of 2021, Mrs. N visited the clinic for her chemotherapy port to be changed. She described that the peripheral neuropathy had made her pouching system application difficult. She said she had trouble coupling the pouch flange to the skin barrier flange, as well as correct alignment of barrier aperture to fit correctly around the stoma due to her vision issues.

Her stoma and peristomal skin were assessed with the pouching system removed. It was noted that three small, but distinct, ulcers had appeared on the lower aspects of the peristomal plane. (See Figure 2) These ulcers were described as painful and raised some concerns. As such, it was decided that weekly follow up reviews at clinic would be required for ongoing evaluation of the ulcers. Initial management involved changing the skin barrier every three days and applying stoma powder to the ulcers to help absorb the excess moisture which later became quite copious.



Figure 1 Newly fashioned end colostomy with sutures in place. February 2021.



Figure 2 Peristomal ulcers present on first review at clinic – Early May 2021.

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Her chemotherapy regimen was altered in mid-May, and she subsequently developed severe diarrhoea. Her peristomal ulcers continued to deteriorate and increase in exudate. A wound swab was taken for pathology and culture. This swab cultured *Proteus Mirabilis* gram-negative bacilli. While treated with oral antibiotics, this did not affect the ulcer progression and in late June her ulcers began to resemble some form of a chronic inflammatory condition with even greater exudate. (See Figure 3).

Nursing Interventions

As part of this patients' overall care plan, a topical honey preparation was firstly applied to the peristomal ulcers. Her pouching system was also modified to a soft convex, one-piece pouching system with a skin barrier infused with ceramides – a CeraPlus™ skin barrier*. Ceramides are a natural component of human skin and an essential for skin health function.⁴ As such, this type of skin barrier serves a dual function – to help provide an additional feeling of security from the integrated adhesive border, while supporting healthy skin underneath the skin barrier. It was thought that removing the coupling system step from the pouching system application procedure might make it easier for her to manage given her peripheral neuropathy. It was also presumed that the firm convex skin barrier might be exerting too much pressure creating pressure injuries and subsequent ulceration. While there is little evidence in the literature to support this theory,⁵ a softer convex solution might help alleviate this. Although, the high volume of exudate from the ulcers was affecting the skin barrier which would only last one to two days.

By the middle of June, one ulcer appeared visually healed, and the overall level of exudate had diminished. However, the overall progress of ulcer resolution was slow. She was changed to a two-piece soft convex skin barrier as the slightly different coupling mechanism allowed for easier pouch to barrier attachment for her with her peripheral neuropathy and she could return to a three-day wear time. By September some epithelialisation had occurred but the ulcers began to exhibit suspicious margins of violaceous colour. (See Figure 4).

This colour on dermal ulcers is highly indicative of a condition known as Peristomal Pyoderma Gangrenosum (PPG).⁶ Multiple lesions are common and appear with undermining of the ulcer edges.⁶ The annual incidence rate of PPG is low and thought to be around 0.6%.⁷ It can be challenging to diagnose as there is often no direct causation but many different associations.⁸ Mostly these associations are of the inflammatory kind and include rheumatoid arthritis⁸ – a condition from which Mrs. N suffers. Additionally, PPG development was in the past thought to be influenced by firm convex skin barriers. However, there is little evidence to support this theory,⁵ yet there is evidence that faecal contamination can exacerbate PPG.⁹ As PPG is an inflammatory condition and considered the diagnosis for Mrs. N, a topical steroid was introduced to her care plan (mometasone furoate – Elocon™ Lotion) to help manage this inflammation.

Ultimately, the task remained to proactively prevent leakage, support healthy peristomal skin, and thusly (and above all) contribute positively to the patient's overall quality of life.

Patient Outcomes

By late September, with the change in management of her pouching system and the close attention to her peristomal ulcers, her overall peristomal skin condition appeared visually very much improved. (See Figure 5).

Mrs. N's anxiety was largely reduced, she expressed that her peristomal ulcer pain was diminished and that the soft convex pouch system was more comfortable overall and felt secure. The coupling system on the two-piece products was easy for her to manage despite the peripheral neuropathy and she was able to continue to manage her care independently.



Figure 3 Defined ulcers with distinct margins – Late June 2021.



Figure 4 Ulcers developed violaceous borders – Mid September 2021.



Figure 5 Peristomal skin ulcers appear visually improved – Late September 2021.

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Conclusion

Noting from the onset that Mrs. N required some form of convexity based on her peristomal contours, was a positive proactive decision made in the early post-operative stage. While it is important that leakage is prevented to help prevent potential skin damage, it is equally important to help ensure peace of mind for the new person with an ostomy. Leakage early can negatively impact their confidence, and as such derail their progress to independence.¹ However, like most situations, things change, and the importance of reassessment cannot be understated. With reassessment, challenges and modifications can be addressed quickly and proactively. Understanding the benefits of the differing types of convexity for improving outcomes is an important step in managing our patients.



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Disclaimer: This case study represents this nurse's experience in using the CeraPlus™ skin barriers with the named patient, the exact results and experience will be unique and individual to each person.

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