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Accelerated Healing of Mucocutaneous Separation Using a Transforming Powder Dressing (TPD): An Innovative Technique

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INTRODUCTION

Mucocutaneous separation (MCS) occurs when the stoma partially or circumferentially detaches from the mucosa of the surrounding peristomal skin at the junction where they meet. MCS is fairly common, with an incidence of 3.7-9.7%[1]. If left unresolved, MCS can lead to infection, peritonitis, stomal retraction or stomal stenosis[2]. Prompt and appropriate management of MCS is essential to prevent these complications and ensure optimal stoma function.

Current, conventional approaches to treat MCS are painful and resource-intensive, including localized wound care (cleaning, filling the separation with skin barrier powder or absorbent dressings), pouching systems to reduce skin trauma, and close monitoring of the separation in case a stoma revision is indicated.

METHODOLOGY AND MATERIALS

This case study involves a 27-year-old male with history of Crohn's Disease who underwent ileocolonic resection with end ileostomy surgery which was complicated by a 4.0 x 0.2 x 1 cm MCS on post-operative day 12. Concerned about the challenges of using traditional wound care products in this wound, an alternative wound care approach utilizing transforming powder dressing (TPD) was explored. This technique aimed to achieve the following:

1. Offer enhanced protection and reduce infection risk in case of ostomy output leakage into the peritoneal cavity
2. Reduce dressing change frequency to minimize pain and extend pouch wear time

TPD is an extended-wear, oxygen-permeable dressing made from polymers similar to those used in contact lenses. When moistened with saline, the powder transforms into a moist barrier that can remain in place for up to 30 days, providing wound coverage and protection.

Altrazeal® Transforming Powder Dressing

RESULTS

- TPD applied in the MCS on postoperative day 13, followed by a 2-piece pouching system
- **95% wound reduction in less than 24 hours post TPD** application
- **Achieved complete healing in 11 days** after initial TPD application
- **Reduced pain scores post TPD application** (2/10 versus 8/10 before application)
- **Reduced dressing changes and nursing time:** TPD only applied once and topped off once without any primary changes over 11-day period

DISCUSSION

A marked acceleration in cellular proliferation was observed after TPD application and the MCS wound healed quicker than anticipated with fewer applications versus standard of care and without any complications. Patient also reported significant pain reduction post TPD application. TPD is used regularly for peristomal complications in our clinical practice with good outcomes and should be considered also for treatment of MCS.

REFERENCES: (1) Tsujinaka S, Tan KY, Miyakura Y, Fukano R, Oshima M, Konishi F, Rikiyama T. Current Management of Intestinal Stomas and Their Complications. J Anus Rectum Colon. 2020 Jan 30;4(1):25-33. doi: 10.23922/jarc.2019-032. PMID: 32002473; PMCID: PMC6989127. (2) Jordan, RS & Burns, J. L. (2013). Understanding stoma complications. Wound Care Advisor, 2(4), 20-24. Retrieved from https://woundcareadvisor.com/understanding-stoma_complication-vol2-no_4/ | **ACKNOWLEDGEMENTS:** This poster was presented in collaboration with Altrazeal Life Sciences Inc. All protocols and clinical assessments were conducted independently by AdventHealth without any compensation. For application instructions and risks of this device please refer to Altrazeal Instructions for Use. | EDU-1111