Treatment of Non-Healing Radiation Injury Using Novel Extended-Wear Transforming Powder Dressing

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BACKGROUND

Over half of all cancer patients receive radiation therapy, resulting in skin injuries in approximately 95% of those treated.[1] Further complications occur in up to 60% of treated patients[2] and include compromised wound healing, chronic ulceration, pain, secondary infections, and psychological distress.[2,3] Established standard of care (SOC) strategies for treating radiation wounds primarily utilize antimicrobial dressings which require frequent and painful dressing changes and consume significant human and material resources.

CASE OVERVIEW

This case study describes a 76-year-old female with metastatic cancer, s/p T8 laminectomy, tumor debulking, and radiation therapy with a nonhealing radiation wound on the thoracic spine. The wound was refractory to SOC therapy for a period of three months. Multiple topical agents were used including silver and other antibacterial dressings without any improvement in wound healing. Palliative care and home health nurses were required to perform daily dressing changes.

CURRENT CLINICAL APPROACH

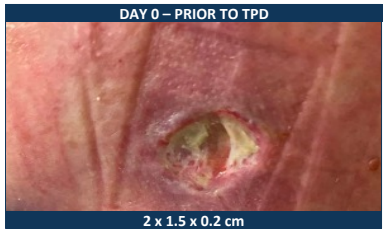
A novel transforming powder dressing (TPD) was applied and covered with a contact layer and gauze. TPD was "topped off" three times over the 33-day treatment period and secondary dressings were changed prn. TPD is an extended wear dressing that covers and protects the wound while releasing excess exudate through vapor transpiration.

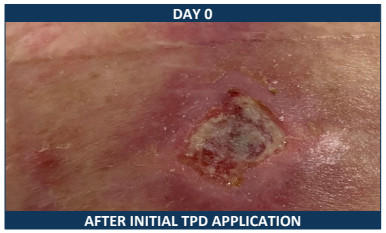
REFERENCES AND ACKNOWLEDGEMENTS

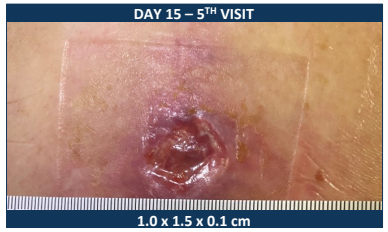
(1) Manna B, Cooper JS. Radiation Therapy Induced Skin Ulcer. [Updated 2022 Aug 10]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK507719/ (2) Haubner F, Ohmann E, Pohl F, Strutz J, Gassner HG. Published online 2012 Sep 24. Wound healing after radiation therapy: Review of the literature. Radiat Oncol. 2012;7:162 doi: 10.1186/1748-717X-7-162. Accessed 20 Oct. 2022. (3) Dormand E, Banwell PE, Goodacre TEE. Published online 2005 Jun 28. Radiotherapy and wound healing. Int Wound J. 2005 Jun; 2(2): 112-127. doi: 10.1111/j.1742-4801.2005.00079.x. Accessed 20 Oct. 2022. | **Acknowledgement:** This poster was presented in collaboration with Altrazeal Life Sciences Inc. All protocols and clinical assessments were conducted independently by Baptist Health without any financial compensation from the manufacturer. For application instructions and risks of this device please refer to Altrazeal® Instructions for Use.

PATIENT OUTCOMES

Prior to TPD, patient's non-healing wound measured 2.5 x 1.5 x 0.2 cm (0.6cm^3). TPD treatment resulted in full wound healing in 33 days. Patient reported pain and psychological relief after TPD application and was discharged from home health services.







CONCLUSION

Radiation wounds are highly challenging, hard-to-heal wounds. The case demonstrated TPD's effectiveness in healing a three-month-old refractory wound within 33 days. The patient also reported reduced pain and no complications were observed. Nursing visits were reduced from daily to once a week with TPD. We conclude that TPD should be considered as a viable, alternative therapy for patients with chronic radiation injuries with poor prognoses.

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