Beyond Foam: Improved Healing with an Innovative Silver Impregnated Silicone Super Absorbent Polymer (SAP) Dressing

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Introduction

Wound dressings play a key role in creating an environment that is optimal for wound healing. Choosing the correct dressing becomes even more critical when patients have risk factors that could result in suboptimal healing. Patients with comorbid conditions may face healing challenges when it comes to traumatic wounds, with complications ranging from infection or dehiscence to prolonged healing.[1] The purpose of this case study was to explore the use of a silver-impregnated silicone super absorbent polymer (SAP) dressing to promote healing of a traumatic wound in a patient with chronic venous insufficiency and who also developed a potential hypersensitivity to foams.

Case Description

A 71-year-old female presented with a chief complaint of a traumatic wound after bumping her leg 3 days prior to presenting to wound care center for treatment. The patient received initial treatment in the emergency department with a gauze dressing and oral antibiotics and complained of significant pain upon initial assessment. Her medical history included current tobacco use, chronic obstructive pulmonary disease (COPD), and chronic venous insufficiency.

The initial treatment included debridement of the wound, an antimicrobial cream, a foam dressing, and a compression sleeve. The patient was seen weekly, and an enzymatic debriding agent was implemented to assist in the removal of non-viable tissue. The standard foam dressing and compression sleeve were continued as well.

There was initial improvement in the wound, but approximately 5 weeks into the patient's care, the patient started to develop a peri-wound irritation and fragility of the surrounding skin. The use of the enzymatic debriding agent and compression sleeve was continued, and the decision was made to change dressings from a foam to a silicone-based super absorbent polymer (SAP) dressing containing a 1% silver compound.

At the first follow-up visit, approximately 1 week after the dressing was changed from foam to the 1% silver silicone SAP, the patient's peri-wound maceration was significantly reduced. By the second follow-up visit, approximately 2 weeks after the switch to the 1% silver SAP, the peri-wound maceration had completely resolved, and the patient's healing had significantly progressed.

Discussion

There was significant reduction in wound irritation that was caused by the initial dressing selection, which was resolved by changing from foam to the silicone-based super absorbent polymer dressing containing a 1% silver compound. In addition to a reduction in irritation and maceration, the wound progressed in healing. The patient and provider also reported satisfaction regarding dressing application, wound irritation, and overall wound improvement with the addition of the silver silicone super absorbent polymer dressing.

Conclusion

The silver-impregnated silicone super absorbent polymer dressing resulted in a resolution of the wound irritation, and significant progress in wound healing was seen. It is recommended to continue to evaluate this product on additional patients, especially those experiencing delayed healing, skin irritation, or maceration from foam to see if these results can be replicated.

Wound at time of initial evaluation

Peri-wound maceration 5 weeks s/p treatment initiation with foam dressing

Decision made to change to 1% silver SAP dressing

1 week after changing to 1% silver SAP dressing

2 weeks after changing to 1% silver SAP dressing

References

1. Leaper, D. J. (2006). "Traumatic and surgical wounds." *BMJ* **332**(7540): 532-535.