

# Moisture Management Challenges for the WOC Nurse

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## Introduction

Moisture management poses a particularly difficult challenge for the WOC nurse. Frequently the WOC nurse is called when skin conditions arise from highly exudative venous stasis ulcers, excessive sweating (hyperhidrosis), intertrigo of deep skin folds, interdigital space maceration or periwound skin maceration resulting from draining wounds.

In our practice we have encountered denudement related to poorly managed moisture or failure of wounds to progress in the presence of copious drainage. Patients report comfort concerns related to burning, itching, and pain. Furthermore, secondary skin infections frequently occur following prolonged exposure to moisture in dark, warm environments such as under compression wraps, in deep skin folds, and in interdigital spaces.

Traditional methods of moisture management are not always easy, reliable or successful. There are multiple treatment options available to achieve the goal of moisture management, and the decision making tree is multifaceted in determining etiology and corresponding treatments. Products that address moisture control through different mechanisms (e.g. absorption, wicking, and barriers) may lead to further complication. The problem is further complicated when treatment of secondary infections is necessary. There is often confusion in implementing treatment modalities and in educating the patient and/or caregivers. Therefore, a time efficient, patient and caregiver friendly, cost effective solution is sought.

Our desire for this research was to explore a single treatment option that eliminated the potential for product conflicts, and to simplify and streamline the treatment of skin conditions resulting from excessive skin hydration. Overall the most important goal of this research was patient comfort and effective moisture management.

## Objective

The objective of this case study series was to explore the use of a new knitted polyurethane-coated textile with antimicrobial silver complex,\* combined with appropriate topical wound treatment, to manage skin conditions resulting from exposure to excessive moisture.

\* InterDry™ Ag Textile, Coloplast Corp., Minneapolis, MN

### Case Study 1



Maceration between toes before intervention    Silver textile\* weaved between toes    Resolution of maceration within 72 hours

A 69-year old paraplegic male with severe peripheral arterial disease and known occlusion of the aorticiliac junction presented with maceration between his toes. Prior medical history included multiple back surgeries due to a benign spinal tumor and skin grafting resulting from radiation treatment approximately 50 years ago. Additional medical history included HTN, dyslipidemia, NIDDM type 2, venous insufficiency, diabetic neuropathic ulceration of the right foot, and venous insufficiency of the right lower extremity.

A 1-inch strip of the silver textile\* was woven between his toes and changed daily following bathing. The maceration resolved within three days of treatment.

### Case Study 3



Placement of silver textile\*    Silver textile\* and brace    Resolution of maceration under brace

A 66-year old male presented with contracture of the left hand requiring the use of a brace. Previous medical history included CVA with left hemiplegia, heart failure, HTN, hyperlipidemia, NIDDM Type 2, history of acute DVT and CAD.

The palm and interdigital spaces of the left hand frequently became macerated and malodorous, so he would stop using the brace. A two-inch strip of the silver textile\* was placed in the palm of his hand and changed daily. This prevented maceration and malodor from occurring, allowing uninterrupted treatment with the brace. His hand was dry and comfortable, and he stated "whoever thought up this product was really smart! My hand has never felt this dry before."

### Case Study 2

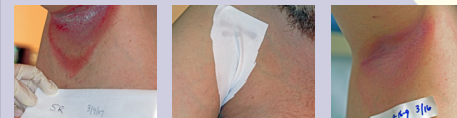


Macerated venous dermatitis    Compression wrap over the silver textile\*    Completed application

A 42-year old male presented with chronic, recurrent venous dermatitis to the lower extremities. Past medical history included Klinefelter's Syndrome (KS), hypogonadism, NIDDM Type 2, venous insufficiency, diabetic neuropathy, and mild mental retardation. Treatment of KS included testosterone injections which caused excessive sweating. Compression wraps were used to treat the venous insufficiency ulcers, but this resulted in venous dermatitis and new ulceration due to maceration caused by the excessive sweating.

The silver textile\* was used under the compression wrap to wick away excessive moisture, resulting in elimination of the maceration and venous dermatitis.

### Case Study 4



Intertrigo of the axilla before intervention    Silver textile\* secured in place with spray adhesive    Day 7: Resolution of intertrigo

A 44-year old male presented with intertrigo in his axilla, panniculus and groin folds. The patient had a history of alcoholism and was admitted for alcohol poisoning. Before the WOC Nurse was consulted, the current treatment was an antifungal-steroid cream combination. The affected areas were painful and the moist desquamation and patient compliance with a new treatment was a concern.

Treatment was changed from the cream to the silver textile.\* A silicone dressing with an adhesive spray (on intact skin) was used to secure the silver textile in place. Within 24 hours, the moist desquamation was significantly improved. After discharge, the patient modified the procedure, by securing the silver textile with surgical tape. Within one week, the affected areas were completely healed.

## Methods

This study was an open-label, non-randomized and non-comparative case study evaluation of the clinical utility of a new, knitted polyurethane-coated textile with antimicrobial silver complex.\* Patients were selected for inclusion based on the clinical judgment of the study investigators, and on failure of previous methods of skin moisture and/or microbial control. All patients agreed to participate in the case study and signed consent for photography.

## Conclusions

- 1) This new, knitted polyurethane-coated textile with antimicrobial silver complex\* provided effective moisture management and microbial control in these four challenging clinical situations:
  - Intertrigo of interdigital spaces.
  - Intertrigo of the axilla.
  - Venous dermatitis complicated with hyperhidrosis.
  - Maceration and malodor associated with skin occlusion by an external appliance.
- 2) This new, knitted polyurethane-coated textile with antimicrobial silver complex\* was well received by both the patient and staff as it streamlined the process of moisture and microbial control into simple and easily implemented protocols of care.
- 3) Further research is warranted to develop additional protocols of care for moisture and microbial control using this new, unique, knitted polyurethane-coated textile with antimicrobial silver complex.\*

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