

The use of a hypochlorous acid-based cleanser to remove bacteria and debris from the peri wound skin in venous ulcers



Dot Weir, RN, CWON, CWS Saratoga Hospital Center for Wound Healing & Hyperbaric Medicine

Background

- The use of pure hypochlorous (pHA) acid-based cleansers to cleanse wounds is well documented, and evidence based. The ability of stabilized pHA cleanser to remove wound debris via the simple act of soaking for 5-10 minutes in soaked gauze is well known. Less well known is the ability of pHA to soften and enhance the removal of debris, crusts and scales from the periwound skin. The presence of such debris is typical of venous wounds, which tend to be associated with skin of poor health around the wound, sometimes over extensive areas. We report cases and techniques of debris removal from periwound skin with pHA as compared to a commercial skin cleanser or saline cleansing.

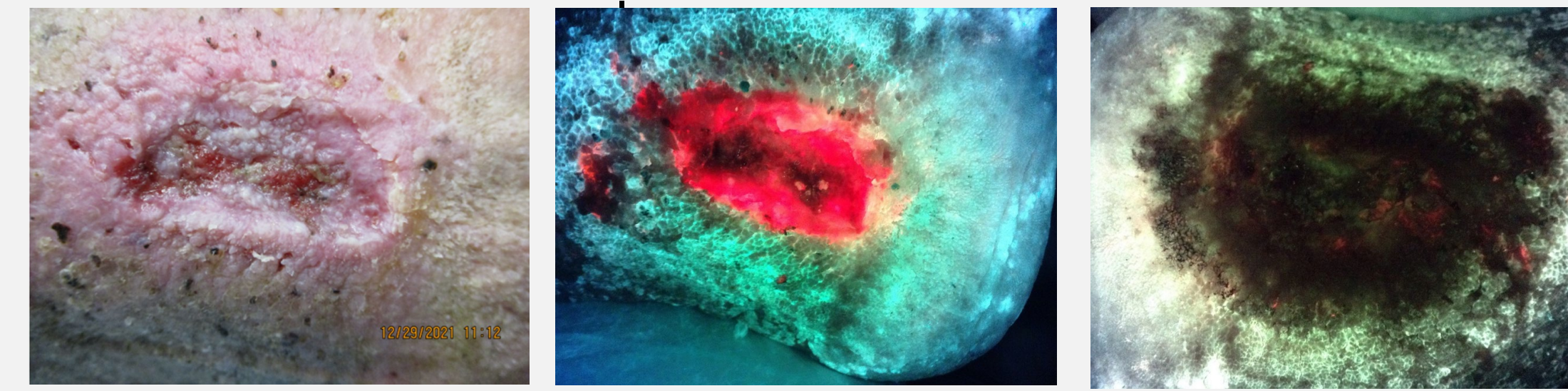
- We chose patients whose legs had visible scales and crusts around the wound. All of the legs were either soaked with saline or cleansed with a foaming skin cleanser, where lack of success led us to immediately switch to the use of pHA* soaking to remove the debris.

- Using fluorescence imaging, we have identified significant bacterial contamination of the periwound skin of patients with venous ulcers who are managed with compression wraps. When this skin is also dried, crusted and scaled these bacteria persist and are more difficult to remove through conventional means. We have learned that soaking with pHA softens and enhances removal of the debris and enables easier removal, which reduces the trapped bacteria, and in some cases reduces itching, and enables any addition of topical treatments or moisturizers to treat the skin more effectively versus coating the scales.

- Through case examples we show the improved cleansing and softening and removal of crusts and scales with pHA compared to the other cleansing methods. Both visually and augmented via the use of fluorescence imaging we illustrate that bacteria removal from periwound skin also occurred.

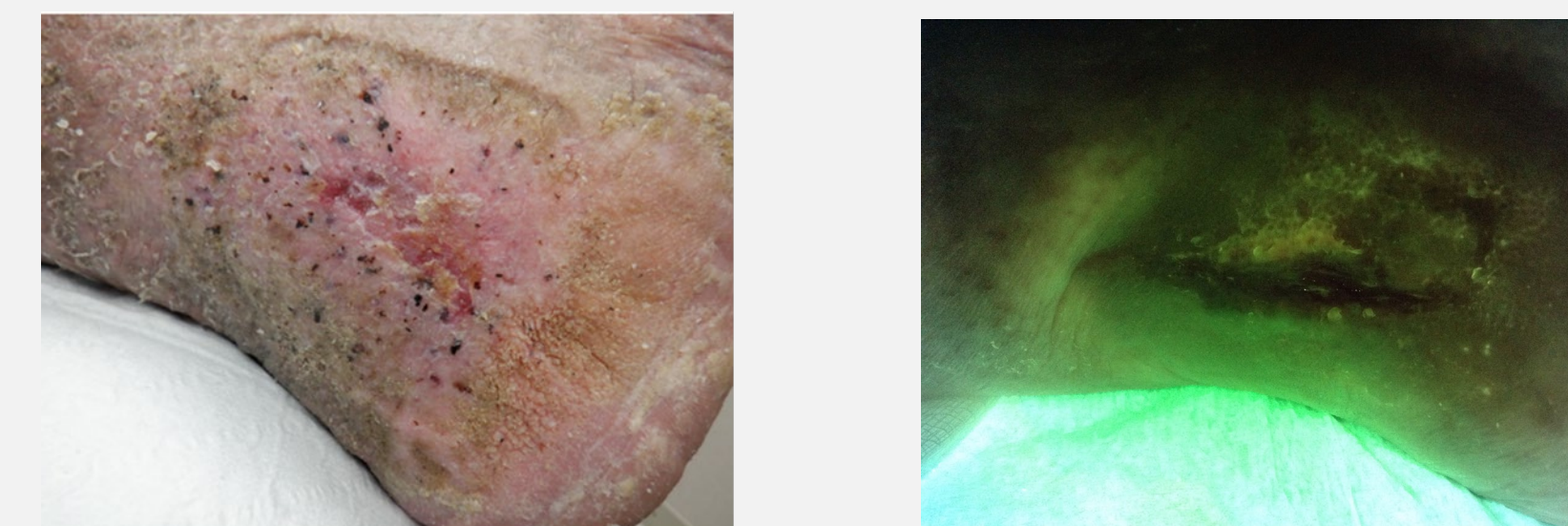
Cases: Examples of outcomes in a variety of wounds

70-year-old male, PMH: Chronic venous insufficiency with ulcer of many months with thickened macerated skin in the periwound Management with bolstered foam dressings and 2-



Prior to cleansing

After cleansing with pHA



Day 20 after cleansing protocol change

Patient with venous leg ulcer, difficulties with maceration which fluoresces in hyper-hydrated skin around wound. Cleansing with saline and foaming cleanser in periwound did not improve fluoresced bacteria. Soaking with pHA and targeted cleansing removed periwound bacteria.



42-year-old male, construction worker, with traumatic injury to left leg with hematoma complicated by edema. After evacuation and early debridement, wound was treated with new NPWT dressing which stays in place for 7 days. While improvement in the wound was noted, he did have some hyperhydration in the periwound area.



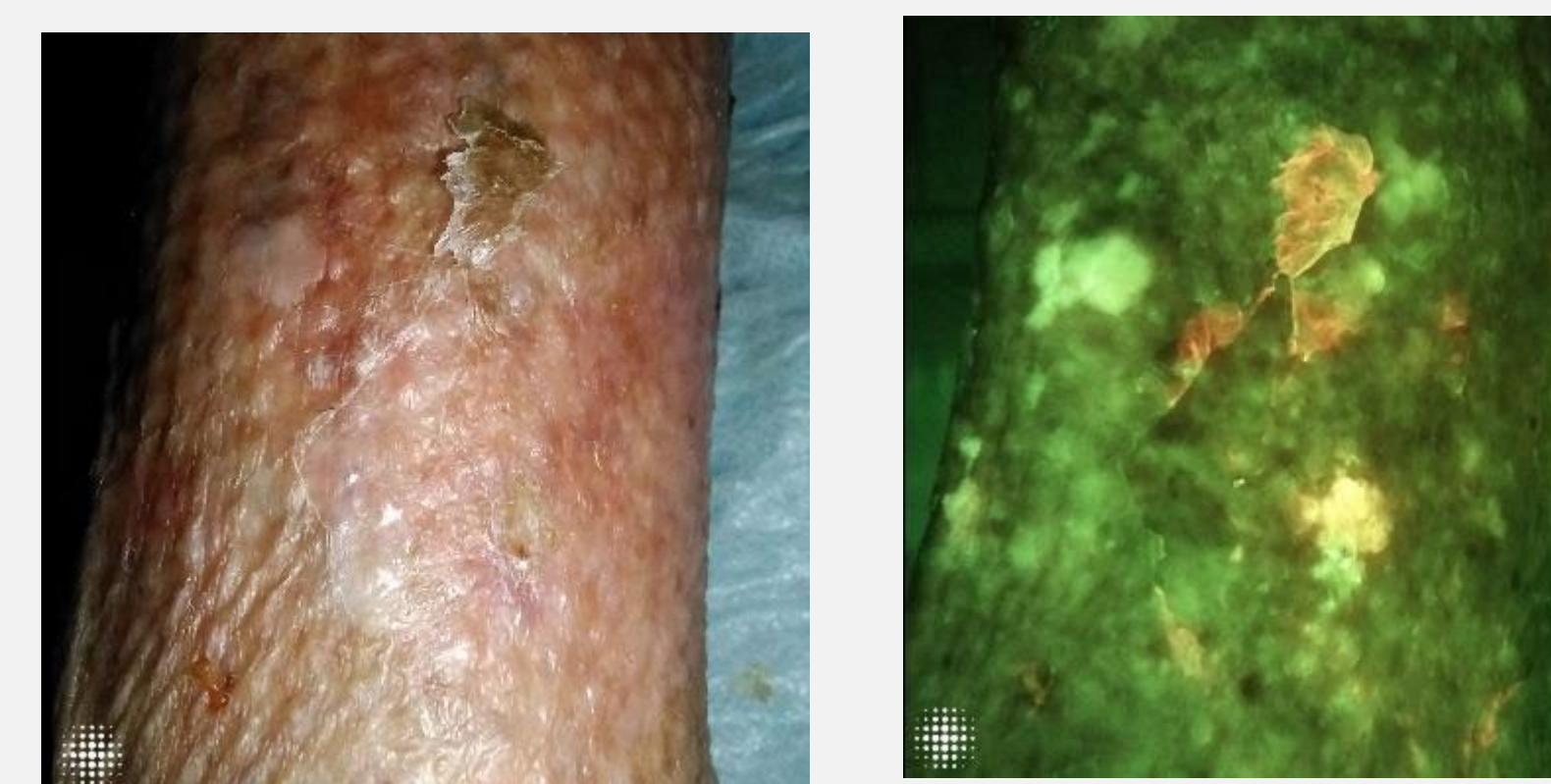
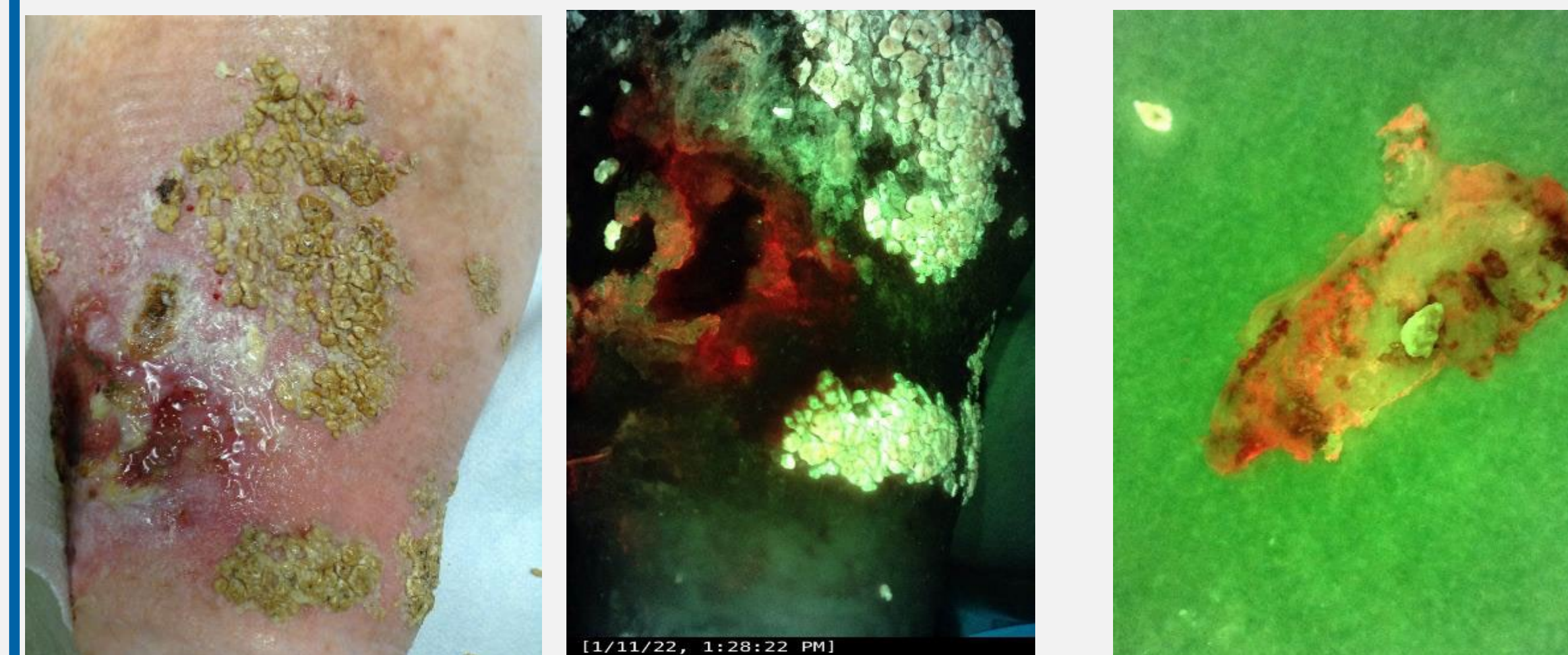
Initiation of NPWT

One week later, hyper-Hydration of skin

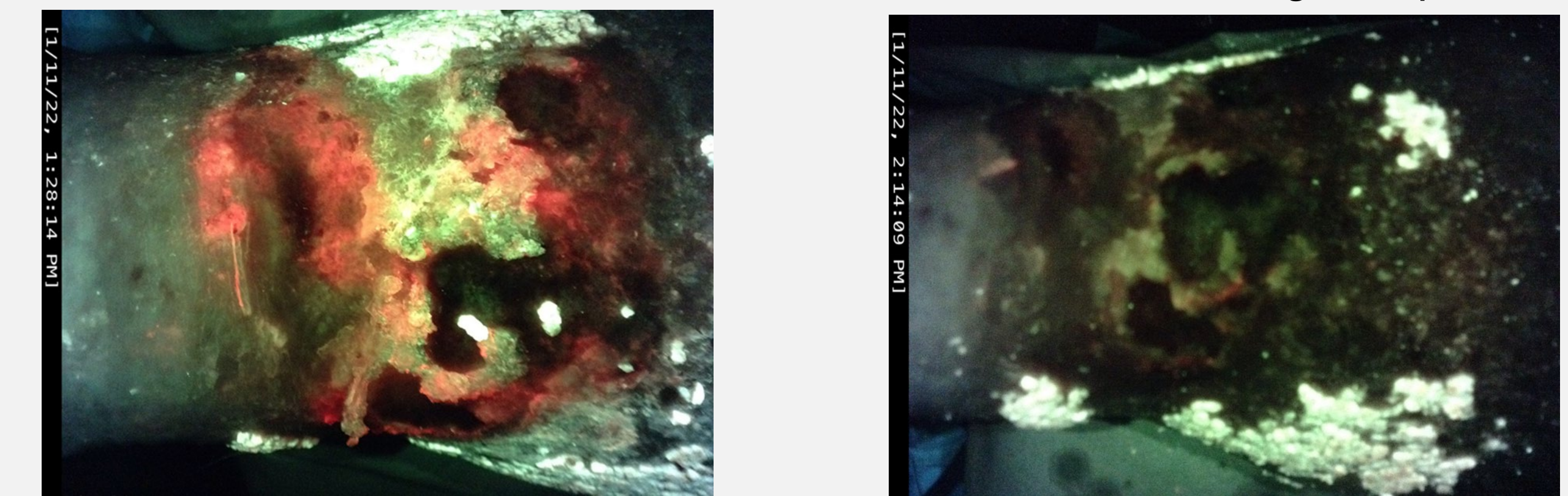
Fluorescence imaging of Periwound after cleansing with foaming cleanser

Post cleansing with pHA

Fluorescence of Skin Scales



Fluorescence of skin/scales after ultrasonic cleansing with pHA



Patients with chronic skin changes from venous insufficiency, soaked for 20 minutes with pHA

