Real-time Detection of Asymptomatic Bioburden with the MolecuLight i:X® Revealed Need for Systemic Antibiotics and Immediate Hospitalization

Accurate wound assessment is essential when determining the treatment plan for a wound. And yet, studies have repeatedly demonstrated the unreliability and subjectivity of clinical signs and symptoms in detecting wounds with uncontrolled bacterial burden1,2.

Clinical Synopsis:
During a routine outpatient chemotherapy appointment, this patient mentioned a “large blister” that had developed on her bottom. This turned out to be a large, untreated sacral pressure injury (6 cm x 6 cm, 100% slough) and the hospital wound care specialist was called in for a thorough assessment. Standard assessment based on clinical signs and symptoms of infection did not suggest an infection in this wound. However, the clinician proceeded to image the patient’s wound under fluorescence with the MolecuLight i:X®, which showed extensive red fluorescence (indicative of bacterial loads of >10⁴ CFU/g) within and around the wound bed (Figure 2). This resulted in immediate hospital admission for treatment including systemic antibiotics. Swabs taken from these regions of red fluorescence were later confirmed to be heavy growth of *Staphylococcus aureus* and *Escherichia coli*. Throughout the patient’s treatment, the MolecuLight i:X® was also used to guide debridement of this patient’s wound, targeting areas of red fluorescence and sparing the areas of healthy tissues.

After 7 days of antibiotic treatment and NPWT, the red fluorescence in the wound bed was notably decreased (Figure 4). Hospital-based wound care treatment continued for 2 months before transferring the patient to a residential care setting. Six months after discovering the wound, it had decreased in size to 2 cm x 1.3 cm x 1.5 cm with 100% granulation tissue.
"My standard wound assessment revealed no signs and symptoms of infection. But the fluorescence images taken with my MolecuLight i:X told a different story. It was the images that led to this patient receiving the in-patient and antibiotic care that she required."

— Rosemary Hill, BSN, CWOCN, CETN(C)