Visualizing *Pseudomonas aeruginosa* and *Staphylococcus aureus* with the MolecuLight ***i:X*** led to optimized sampling

Clinician

Ron Linden, MD, is the Founder, CEO and Medical Director of Ontario Wound Care and the Judy Dan Research & Treatment Centre and has specialized in hyperbaric medicine for over 20 years.

Patient Condition

This patient presented with a diabetic foot ulcer on their left heel resulting from poorly controlled diabetes.

This patient presented at clinic with a deteriorating diabetic foot ulcer as a result of poorly controlled diabetes. At this stage, contamination and infection with pathogenic bacteria is increasingly likely, and is indeed what happened with this patient. An infection is a serious complication of a foot ulcer and requires immediate treatment. Since not all infections are treated the same way, accurate sampling is critical to identify the causative pathogens, and ensure appropriate treatment selection.

Further, real-time bacterial visualization and early detection of these pathogens is vital, as polymicrobial *Pseudomonas aeruginosa* and *Staphylococcus aureus* infections are more virulent than single pathogen infections and result in worse patient outcomes.[1,2]

The clinician used the MolecuLight ***i:X*** to assess this wound and FL-images (Figure 2) revealed both cyan and red fluorescence indicating polymicrobial contamination. Most potentially harmful bacteria fluoresce red when imaged with the MolecuLight ***i:X*** (e.g. *Staphylococcus aureus*), however *Pseudomonas aeruginosa* uniquely fluoresces cyan.

Prior to using the MolecuLight ***i:X***, the clinician indicated he would have swabbed the middle of this wound, however this FL-image (Figure 2) guided the clinician to sample both the red and cyan regions of fluorescence, thereby increasing the likelihood of detecting both species.

Curettage samples confirmed heavy growth of *Pseudomonas aeruginosa* and light growth of *Staphylococcus aureus* in this wound.

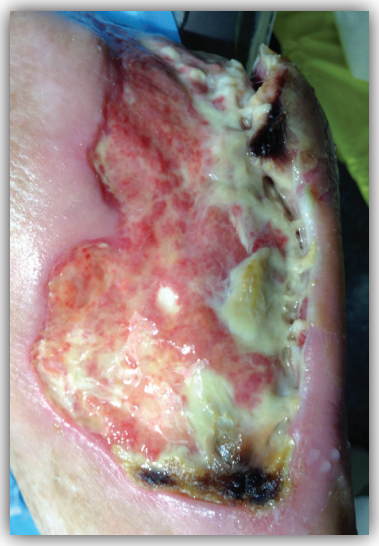

Figure 1: Standard Imaging Mode.™

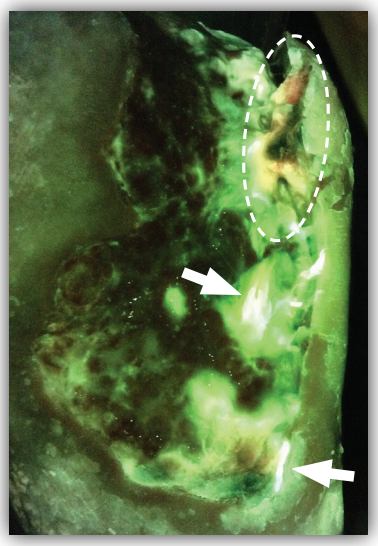

Figure 2: Fluorescence Imaging Mode.™ The circle indicates red fluorescence which suggests the presence of *S. aureus*. The arrows indicate areas of fluorescence signal oversaturation from heavily concentrated *P. aeruginosa,* which appear more white than cyan.

US FDA De Novo approval pending – the MolecuLight *i:X*™ Imaging Device is not available in the US.

MolecuLight
LOOK TO HEAL®

MolecuLight *i:X*™

Wound Intelligence Device

The MolecuLight ***i:X*** allows clinicians to quickly, safely and easily visualize bacteria[3] and measure wounds[4] at the point of care so they have maximum insights for accurate treatment selection and accelerated healing.[3]

Testimonial

"Previously, I would have swabbed in the middle of the wound, getting results which would be positive for *Pseudomonas* but missing the *Staphylococcus aureus.* If you're involved in wound care the MolecuLight ***i:X*** is an essential tool."

— Ron Linden, MD

Bacteria may appear red, white, and cyan in image.

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References:
Images provided by Ron Linden, MD, Judy Dan Research & Treatment Centre, Toronto, ON, Canada
MolecuLight Clinical Case 0044.

1. Pastar I *et al.* 2013. PLoS One 8:e56846.
2. Hendricks KJ *et al.* 2001. J. Bone Joint Surg. Am. 83-A:855–861.
3. DaCosta RS *et al.* PLoS One. 2015 Mar 19;10(3).
4. MolecuLight Inc. Case Study 0051. 2016.

The MolecuLight *i:X*™ Imaging Device is approved by Health Canada (Medical License #95784) and has CE marking (Certificate #G1160292355002) for sale in Canada and the European Union.
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