CASE STUDY Scarborough & Rouge Hospital – Toronto, ON, Canada

Document the Path to Wound Healing with MolecuLight *i:X*®

Abdominoplasty ("tummy tuck") is one of the most commonly performed aesthetic procedures and can be associated with many complications, including infection, at a rate of 3-10%[1]. In this case, a 41-year-old woman experienced dehiscence and a surgical site infection after an an abdominoplasty, and was referred to a wound care specialist. Red fluorescence, as visualized on the MolecuLight ***i:X***, confirmed the presence of bacteria (>10^4 CFU/g)[2] at the periphery of the wound. To eliminate the bacterial load, the periphery of the wound was vigorously cleaned, and silver-based antimicrobials were applied in conjunction with negative pressure wound therapy. The wound surface area was measured using the MolecuLight ***i:X***. Follow-up care was provided and by Day 3, fluorescence imaging indicated that the red fluorescence was reduced and the size of the wound had decreased. With rapid feedback on surface area reduction and the effectiveness of therapy, a less onerous treatment was planned. The wound achieved a 54.8% reduction in surface area in 4 weeks, indicating a rapidly healing path.

Practitioner

Rose Raizman RN-EC, MSc, with over 19 years of experience, leads the Save Our Skin (SOS) team at Scarborough & Rouge Hospital located in Toronto, Canada, to combat pressure ulcers of hospital inpatients. She also oversees the wound care clinic for inpatients and outpatients.

Patient Condition

41-year-old female patient with an abdominoplasty surgical site infection. Received silver-based antimicrobials in conjunction with negative pressure wound therapy. Once the bacterial load was reduced, the clinician decreased the frequency of dressing changes.

DAY 1

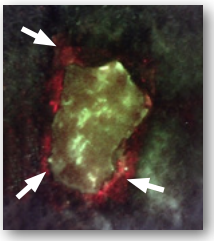

Fig. 1

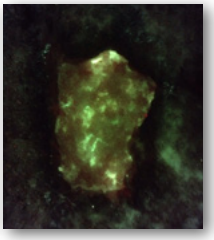

Fig. 2

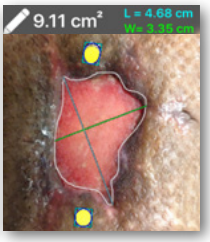

Fig. 3

Red fluorescence suggesting bacteria (>10^4 CFU/g) was visualized by the MolecuLight ***i:X*** (Fig. 1) prompting a change in the treatment plan to reduce bacterial load. Red fluorescence was decreased after vigorous cleaning (Fig. 2). Wound measurement was captured to document the wound size prior to treatment (Fig. 3).

DAY 3

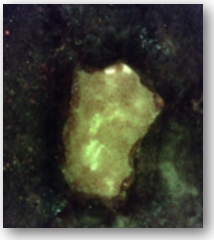

Fig. 4

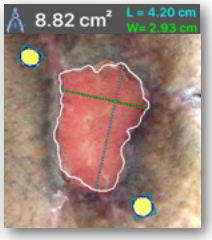

Fig. 5

The absence of red fluorescence indicating bacteria (>10^4 CFU/g) (Fig. 4) and a decrease in wound size (Fig. 5) demonstrated treatment effectiveness, and as a result, the clinician reduced the frequency of dressing changes.

WEEK 2

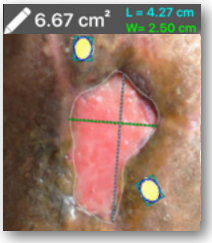

Fig. 6

WEEK 3

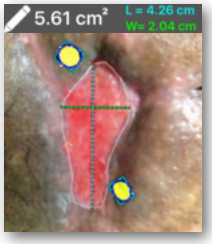

Fig. 7

WEEK 4

Fig. 8

Wound measurements were taken during follow-up visits confirmed that the size of the wound was decreasing steadily. By Week 4, the wound achieved a 54.8% reduction in surface area, indicating a rapidly healing path.

MolecuLight®

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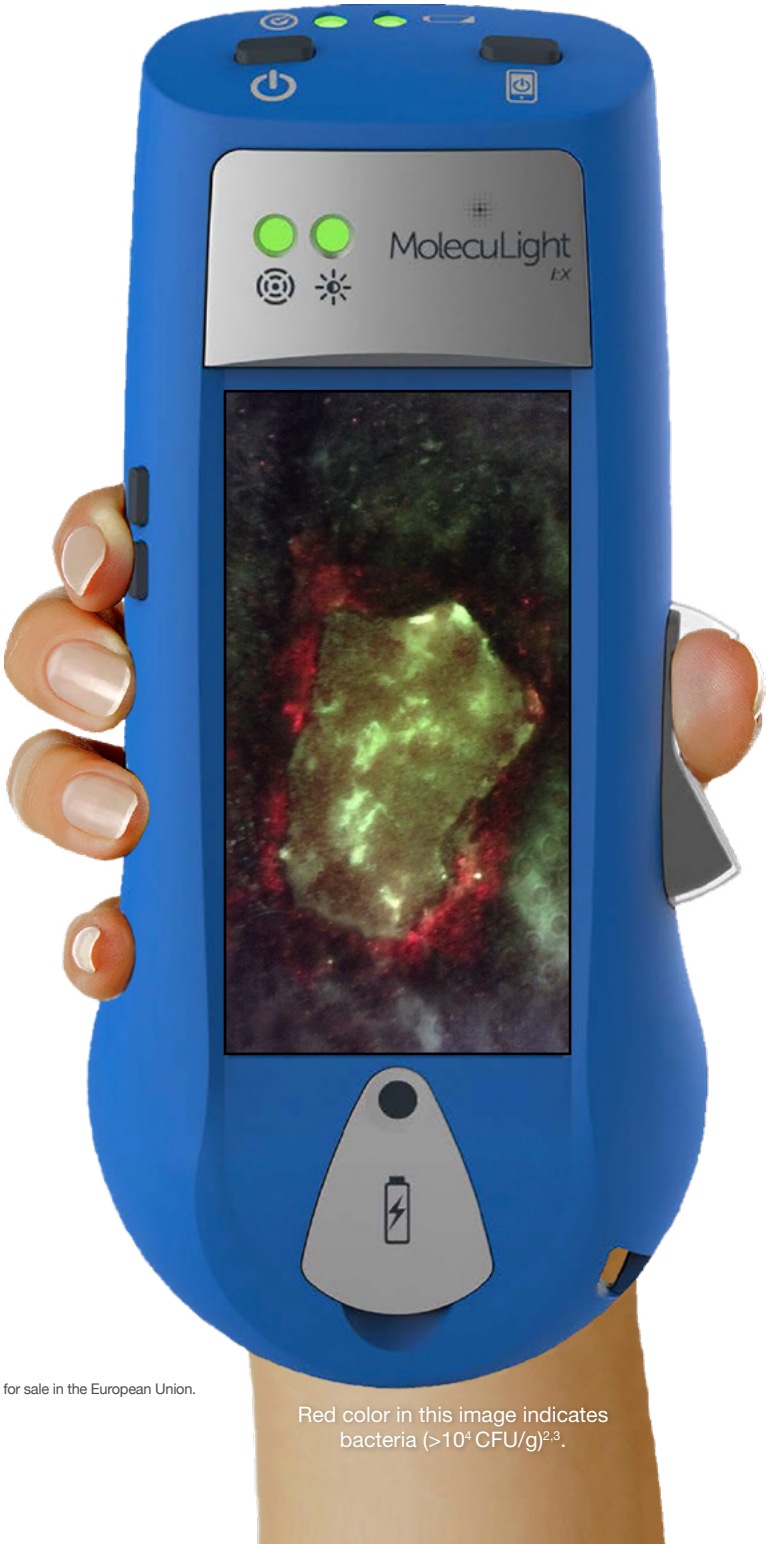
MolecuLight *i:X*®

The MolecuLight ***i:X*** allows clinicians to quickly, safely and easily identify wounds with bacteria[2-6] (at loads of >10^4 CFU/g, in combination with CSS) and measure wounds[4,6] at the point of care to provide them with valuable information to inform treatment and monitor progress[5,6].

Testimonial

"The decreased red bacterial fluorescence after vigorous cleaning gave me confidence that the bioburden could be managed with dressing changes that decreased in frequency. Furthermore, using the wound measurement feature it was easy to calculate that the wound size had decreased by over 50% in just 4 weeks, meaning that the treatment was effective and the wound was indeed on a healing trajectory."

— Rose Raizman RN-EC, MSc



Red color in this image indicates bacteria (>10^4 CFU/g)[2,3].

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+1.647.362.4684
Toll Free 1.877.818.4360 (Canada)
info@moleculight.com

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References:
Images provided by Rose Raizman, RN-EC, MSc, Scarborough & Rouge Hospital, ON, Canada
MolecuLight Clinical Case 0066.

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2. Rennie MY *et al.* Point-of-care fluorescence imaging predicts the presence of pathogenic bacteria in wounds: a clinical study. J Wound Care. 2017 Aug 2;26(8):452-460.
3. Rennie MY *et al.* Understanding Real-Time Fluorescence Signals from Bacteria and Wound Tissues Observed with the MolecuLight ***i:X***. Diagnostics (2019).
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5. DaCosta RS *et al.* Point-of-care autofluorescence imaging for real-time sampling and treatment guidance of bioburden in chronic wounds: first-in-human results. PLoS One (2015).
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The MolecuLight® ***i:X*** Imaging Device is approved by Health Canada for sale in Canada and has CE marking for sale in the European Union. The MolecuLight® ***i:X*** Imaging Device has received FDA clearance.