

### CASE STUDY

## Endovascular intervention in a non-healing diabetic foot ulcer

### Doug Toole, DPM

Dr. Toole, co-owner of the Innovation Medical Group in Salt Lake City, is a certified podiatrist through the American Board of Podiatric Medicine.

**“** With Snapshot<sub>NIR</sub> we were able to demonstrate the success of vascular intervention in addition to the efficacy of this advanced wound care regimen. As post-intervention treatment continued, these images confirming regular healing progress helped to motivate the patient to strict compliance leading to complete wound closure.”

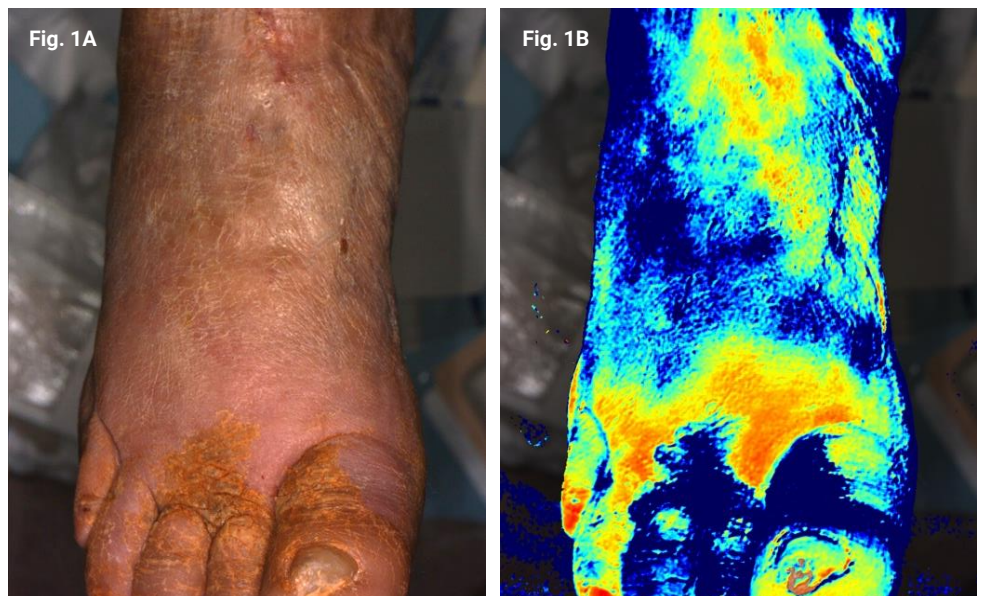
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### CASE HISTORY

A 78-year-old male with peripheral arterial disease (PAD) and diabetes presented at the clinic with a non-healing diabetic foot ulcer (DFU). The patient had been treated for several months with a serial advanced wound care regime, including weekly debridement, allograft placement and appropriate off-loading. The patient experienced hospitalizations and was at high risk for amputation.

### OBSERVATIONS

Near-infrared spectroscopy (NIRS) imaging with Kent Imaging's Snapshot<sub>NIR</sub> was used on presentation to the clinic to document the level of oxygen saturation ( $S_tO_2$ ) in the wound. This imaging illustrated very low tissue oxygenation ( $S_tO_2$ ) impeding wound healing due to low tissue perfusion in the associated angiosome. This information was used to escalate vascular referral and the patient underwent an endovascular intervention to improve flow and oxygen delivery to the tissues. Post-intervention imaging captured with Snapshot<sub>NIR</sub> demonstrated drastic improvement in tissue oxygenation and viability.



**FIGURE 1-** Baseline clinical (1A) and  $S_tO_2$  (1B) images before debridement, allograft placement and appropriate off-loading.

# Snapshot<sub>2</sub><sup>NIR</sup>

## Seeing is Believing in Wound Care

### Portable for All Points of Care

#### Rapid Assessment

Quickly and easily assess the wound bed and surrounding tissue without the use of dyes or patient contact.

#### Wound Debridement

Clearly identify non-viable tissue in and around the wound bed. Repeat imaging as needed to confirm graft survival.

#### Wound Monitoring

Ability to assess dehisced, chronic or slow healing wounds in conjunction with hyperbaric pressure or other treatments without the need for injections or patient contact.

#### Documentation and Tracking

Track and compare the same patient throughout their care. Assess patients where you see them to record treatment progress and evaluate effect of the treatment modality.

#### Patient Compliance

Share images with patients to provide visualization of treatment progress. Encourage patients through treatment and therapy.



### OBSERVATIONS (Continued)

The  $S_tO_2$  images demonstrate the efficacy of the vascular intervention and show the progress in healing during the course of treatment, from exposed capsular tendon to tissue granulation. These images helped to motivate the patient to adhere to consistent therapy and the final result was complete wound closure.



Fig. 2

**FIGURE 2-** DFU with exposed tendon prior to endovascular intervention and compliant therapy.

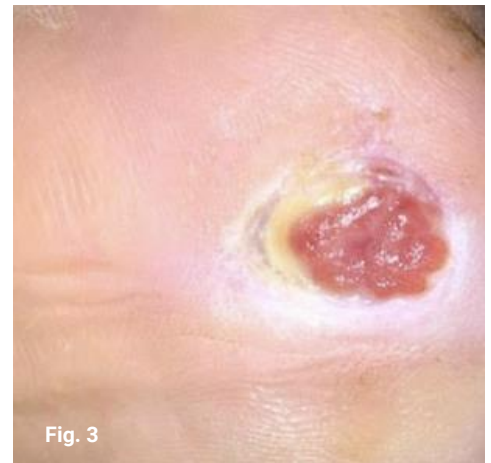


Fig. 3

**FIGURE 3-** Granulated tissue with wound healing following endovascular intervention and therapy compliance.



Fig. 4A

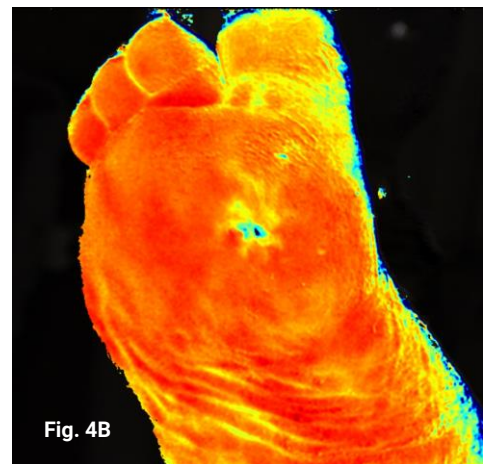


Fig. 4B

**FIGURE 4-** (4A) Almost complete resolution of wound following intervascular intervention and serial biologic graft applications. (4B) Corresponding Snapshot<sub>2</sub><sup>NIR</sup> image of wound, with oxygen markers, showing the increased oxygenation.