



Snapshot_{NIR}

Advancing Tissue Assessment in Reconstructive Surgery

Nipple sparing mastectomy & sentinel node biopsy with immediate DTI reconstruction

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"Snapshot_{NIR} provides an excellent, convenient and reliable method of predicting skin flap viability following mastectomy, thus impacting intraoperatively the optimal course of treatment: immediate vs. delayed reconstruction; DTI vs. tissue expander. I use Snapshot_{NIR} on every immediate breast reconstruction I perform. I find it to be an invaluable tool in my practice."

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CASE HISTORY

57-year old woman with recently discovered left invasive ductal carcinoma (IDC) underwent a left unilateral nipple sparing mastectomy via an infra-mammary fold (IMF) incision, along with a sentinel node biopsy (SNBx). The breast surgeon used both methylene blue and radio-nucleotide for node identification. Snapshot_{NIR} near infrared spectroscopy (NIRS) imaging was used to confirm tissue oxygen saturation (S_tO_2) in the mastectomy skin flap intraoperatively.



Fig. 1

Fig.1: Pre-operative markings.



Fig. 2

Fig.2: Snapshot_{NIR} image capture in the OR.
Note placement of focal point (centre dot in nipple areola complex, and the framing dots which indicate full field of view to be captured.

After confirming excellent tissue oxygenation in the skin flaps, the patient was reconstructed with a pre-pectoral silicone gel implant with acellular dermal matrix (ADM) using the "tent" or anterior coverage technique.

Advancing Tissue Assessment in Reconstructive Surgery

Portable for all points of care

Preoperative Planning

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

Interoperative Assessment

Assess surgically manipulated or altered tissue to determine flap viability.

Postoperative Surveillance

Continued surveillance in recovery ensures tissue survival and identification of congested flaps prior to discharge.

Follow-Up Visit Tracking

Evaluate areas of concern to ensure continued positive flap health. The immediate visual data supports the ability to optimize expansion with maximal filling, while ensuring tissue viability throughout each visit.

In-Clinic Monitoring

Ability to assess dehiscid or slow healing wounds without the need for injections or patient contact.

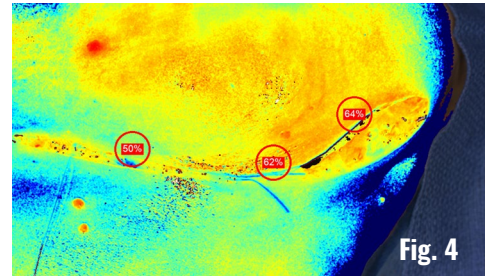


Fig3 & 4: Clinical and NIRS images of incision line captured with Snapshot_{NIR}, confirming the tissue viability of the flap.

Fig5: Intra-operative view of ADM-covered prosthesis, prior to closure.

Fig.6: Post-operative Day 1 with "Tegaderm Bra" and underlying Mupirocin Ointment. Note the clinically well vascularized nipple areola complex.

Fig7: Long-term post-operative result.



The sentinel node tested negative and the patient did not require adjuvant chemo-therapy or radiation therapy. Her tumor was hormone receptor positive (ER+ve/PR+ve) and she was placed on hormone therapy.

By virtue of the ability to assess tissue oxygenation intraoperatively in real time, with a sizer in place identical to the planned desired permanent implant, a decision was made to proceed with a pre-pectoral DTI reconstruction.