Less Toxicity. More Patients. Now *That's* SAVI.

SAVI® CLINICAL CASE REVIEW

Patient: 70-year-old female

Diagnosis: Invasive Ductal Carcinoma, T1, N0, Stage 1

Rx: 34Gy B.I.D. x 5 days delivered via single-entry, multi-catheter applicator

Challenge: Minimal Skin and Chest Wall Spacing

The patient is a 70 year old female who noted a right breast mass on self exam. Ultrasound confirmed a mass and an excision biopsy demonstrated a 7 mm invasive ductal carcinoma of the right breast, ER strongly positive, PR weakly positive, and Her-2/Neu negative. There was no noted lymphovascular invasion but margins were close at <1 mm. She sought a second opinion from a surgeon at University of California, San Diego and after additional imaging was taken back to the operating room for a re-excision and sentinel lymph node biopsy. On re-excision there was no residual invasive disease. Sentinel lymph node biopsy demonstrated no metastatic disease the patient was diagnosed a pT1bN0M0 invasive ductal carcinoma. Patient had expressed desire for partial breast radiotherapy and at the time of re-excision a Cavity Evaluation Device (CED) (Cytyc, Inc.) was placed ***(Figure 1).*** She was referred to Radiation Oncology for evaluation. The CT scan demonstrated the cavity to skin spacing of 4.5 mm, which contraindicates the use of a balloon catheter, as well as close proximity to rib cage and lung. A 6-1 SAVI applicator (Cianna Medical, Inc.) was selected.

A 1 cm incision was made near the lumpectomy incision. Through this incision and under ultrasound guidance, a trocar was used to create a pathway to the lumpectomy cavity. The trocar was removed and seroma was drained from the cavity. The applicator was then inserted into the lumpectomy cavity via the same pathway.

Using the expansion tool, the applicator was deployed, allowing the surrounding tissue to conform to individual catheters. A CT scan was performed that verified the applicator was properly placed ***(Figure 2).*** The CT images were exported to the HDR treatment planning computer. The expansion tool was then removed and the patient's incision site was dressed with sterile bandages.

Following NSABP B-39 dosimetry criteria guidelines, the treatment plan yielded the following data:

PTV	90%	V100	V150	V200	Max Skin Dose	Pectoralis	Rib	Lung
29.1cc	94.5%	25.0cc	11.6cc	5.2cc	290 cGy	425 cGy	375 cGy	255 cGy

34 Gy was delivered B.I.D. for 5 days. Dressings were changed at each fraction. Patient was seen at four weeks, post-radiation therapy, with excellent cosmetic results ***(Figure 3).***

Conclusion: The multiple, peripheral source lumens of the SAVI applicator allowed for simultaneous, significant dose modulation at the skin and chest wall, while maintaining excellent target volume coverage. Sculpting of the 3-D dose delivered is easily accomplished with the SAVI device.

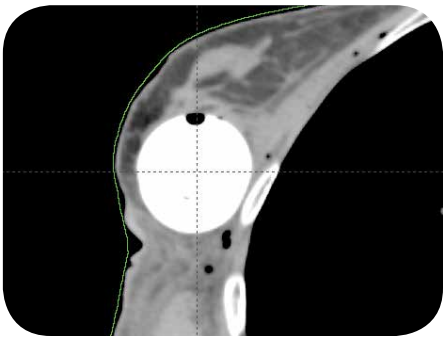

Figure 1 *CT image of Cavity Evaluation Device (Hologic, Inc.) confirms insufficient cavity to skin spacing*

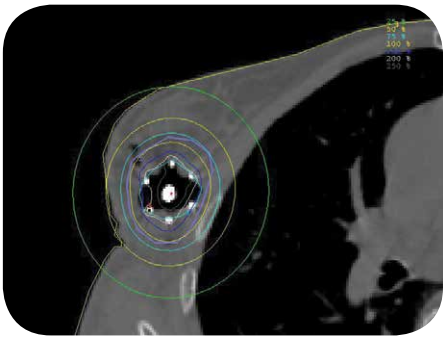

Figure 2 *CT image of 6-1 SAVI applicator implanted into lumpectomy cavity*

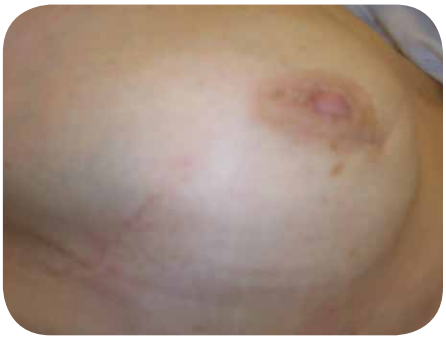

Figure 3 *Incision at four weeks post treatment*

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Case and photos provided by Catheryn Yashar, MD. UCSD Moores Cancer Center, San Diego, CA.

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