CLINICAL CASE REVIEW

SAVI® Brachytherapy with TRIUMPH-T 2-day treatment regimen

Cathryn Yashar, MD
Chief of Gynecologic and Breast Radiation Services,
Radiation Oncology Professor of Radiation Medicine and
Applied Sciences

Patient: 62-year-old woman, healthy

Diagnosis: 1.8cm right breast Invasive Ductal Carcinoma

Rx: Lumpectomy and sentinel node biopsy, followed by TRIUMPH-T radiation regimen of 3 fractions over 2 days at 750cGy

Patient History

62-year-old otherwise healthy woman was noted to have an abnormal screening mammogram, confirmed by a diagnostic mammogram, ultrasound and MRI to have a 1.8cm right breast spiculated suspicious mass without suspicious adenopathy. Biopsy demonstrated a grade 1 invasive ductal carcinoma.

Lumpectomy:

She underwent a right breast lumpectomy and sentinel node biopsy with final pathology demonstrating a 1.7cm grade 1 ER+(>95%)/PR+(>90%)/HER2neu negative invasive ductal carcinoma without LVI, with associated grade 1-2 DCIS. One sentinel lymph node was negative for metastatic disease and staging was pT1cN0(sn) M0. Margins were widely clear for invasive cancer and DCIS.

Dosimetric Quality Parameters

Structure	Id	Value
PTVeval	V90	V90.00: 39.01 cm^3 (98.80% of volume)
PTVeval	V95	V95.00: 38.23 cm^3 (96.83% of volume)
PTVeval	V100	V100.00: 36.88 cm^3 (93.40% of volume)
PTVeval	V150	V150.00: 19.22 cm^3 (48.69% of volume)
PTVeval	V200	V200.00: 10.81 cm^3 (27.38% of volume)
PTVeval	D90	D90.00: 772.60 cGy (103.53% of dose)
PTVeval	D95	D95.00: 731.45 cGy (97.53% of dose)

Figure 1

Determining Dosimetry ("Planning Radiation Treatment"):

After an oncotype determined that she did not need chemotherapy, the patient sought an opinion from radiation oncology about her options. On exam there was a healing surgical incision on her right lateral breast without palpable abnormalities or suspicious skin changes. Ultrasound showed a symmetric, single cavity. Options including whole breast radiation therapy versus accelerated partial breast irradiation—including the TRIUMPH-T trial—were discussed, reviewing data, guidelines and side effects. Patient elected to undergo placement of a single-entry device with hopes to have dosimetry to allow the TRIUMPH-T regimen. After informed consent the area was prepped for a sterile procedure. The skin and cavity were numbed with 1% lidocaine, a 1cm incision was made and the cavity was easily entered with a hemostat. An appropriately sized SAVI 6-1 catheter was placed and expanded without complication. A planning computed tomography was performed, demonstrating good placement, and 750 cGy to the PTV for 3 fractions was prescribed. Dosimetric analysis demonstrated a V90 of 98.8%, C95 of 96.8% V150 of 19.2 cc and V200 of 10.8 cc. Skin dose maximum was <100% of the prescription dose.

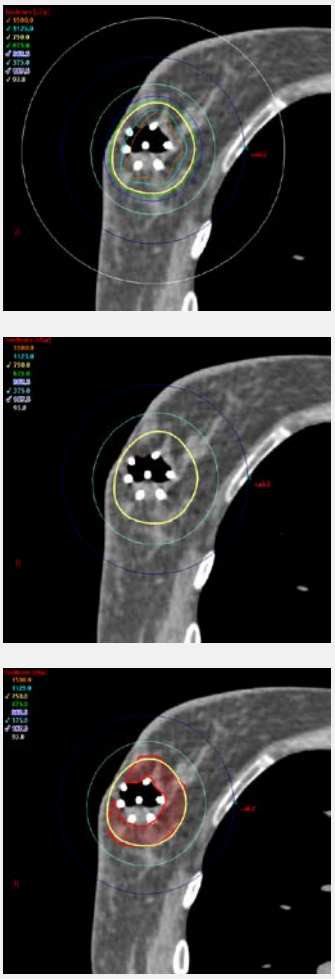

Figure 2. Fractions of 750cGy were administered 3x over 2 days

Radiation Delivery:

The initial dose was delivered after plan was accepted. The area was dressed and she went home stable and with no complaints. She returned the following day for two additional fractions, 6 hours apart. After the final delivery the device was collapsed and removed without complications. Steri-strips were used to close the incision, a 2X2 was applied and covered with tegaderm (to be removed after 24 hours). Patient was discharged in stable condition.

Conclusion:

Patient returned at 1 month and was seen every 6 months until the last follow-up at 18 months. She had no complications and at last exam there were no telangiectasias or hyperpigmentation, fibrosis, scarring or palpable seroma.

ciannamedical.com/savi
merit.com

406024001_001 ID 052419