

What to know about Strut Adjusted Volume Implant for breast cancer

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One evening before bedtime, Elaine Cook noticed one of her breasts had leaked brownish fluid on her pajama top.

Diagnosis later revealed she had breast cancer, fortunately just short of Stage 1. Cook's subsequent story affirms how treatment for cases such as hers has changed as technology has rapidly evolved.

Just a couple of decades ago, she might have lost her breast to mastectomy and had to undergo many exhausting rounds of radiation for several weeks.

Instead, the Cocoa resident sailed through radiation in a "business" week, thanks to SAVI (Strut Adjusted Volume Implant), an advanced form of radiation therapy that can be completed in as little as two to five days.

SAVI, a form of Accelerated Partial Breast Irradiation (APBI) known as breast brachytherapy, delivers radiation from inside the breast with pinpoint accuracy directed only to where it is truly needed, thus sparing healthy tissue.

At the other end, standard whole breast radiation, as the name says, includes the entire breast.

SAVI is intended for cancers found at the earliest — and most treatable — stages.

"Why radiate the entire breast for a cancer that was only 5 mm?" said Dr. Emran Imami of TEPAS Breast Center in Melbourne.

At TEPAS, Imami outfitted Cook with SAVI, which consists of a bundle of catheters inserted into the lumpectomy cavity through a small incision in the breast.

"Targeting the area most likely to have recurrence post-surgery is the goal," Imami said.

"Eighty-five percent of cancers that reoccur are at the lumpectomy site, and that's what SAVI targets."

Cook was also given the option of traditional radiation, but she thought SAVI was a no-brainer.

"I didn't want to be tied down for several weeks," she said. "With SAVI, I was done in five days and before the weekend."

The insertion procedure, performed



Strut Adjusted Volume Implant, an advanced form of radiation therapy, delivers radiation from inside the breast with pinpoint accuracy directed only to where it is needed, thus sparing healthy tissue. FSTOP123/GETTY IMAGES

outpatient and in-office, took about 20 minutes. Patients receive a local anesthetic before the physician makes a half-inch puncture on the breast to install the SAVI catheter. The catheter bundle is inserted in a closed position then expanded to perfectly fit the shape of the cavity, regardless of tumor size, shape and location. The ends of the catheter remain outside the breast for delivery or radiation during treatment.

"There was pretty much zero pain after," said Cook. "I think maybe I took one Tylenol."

Her complete course of radiation took less than a week and did not sap any significant amount of energy from her.

"I felt a little tired, but that was it," the Cocoa resident said.

Based on CT scan images the radia-

tion oncologist creates a custom treatment plan that delivers radiation to needed areas, while protecting the skin, chest wall, heart and lungs.

Treatment is delivered twice a day for two to five days in sessions that last 10 minutes. The ends of the catheters are connected to the HDR afterloader, a computerized device that painlessly delivers a wire with a tiny radioactive seed into each catheter. Seeds are completely removed after each treatment and no radiation remains in the patient's body between treatments.

Immediately following completion of the last radiation session, SAVI comes out in a five-minute procedure that is painless and leaves minimal visible scarring.

"That was it," Cook said. "About the only thing I didn't like was that I had to

sleep on my back and wear a bra to bed. Other than that, it was fine."

Side effects are little to none, with fatigue and minor pain at the catheter site the primary problems. Most insurance covers the procedure.

"Unlike whole breast radiation, SAVI patients have minimal skin changes or nearby scarring," Imami said.

The discomfort of wearing a bra to bed for a few days was just a nuisance when Cook compared it with whole breast radiation.

"It left me to get on with my life," she said. "I would recommend it for anyone who qualifies."

While SAVI offers definite advantages, not all patients meet the specific criteria for SAVI radiation.

"The patients must be an early-stage breast cancer, Stage 9, 1 or 2a, be 45 years or older and with none of the axillary lymph nodes affected," Imami explained.

Even with this patient selection criteria, SAVI can benefit a significant number of breast cancer patients, since sixty-six percent of the total number of invasive or ductal carcinoma in situ (DCIS) cases combined are diagnosed at an early stage, according to figures from the American Cancer Society and a very small number of women diagnosed with breast cancer are younger than 45.

The American Cancer Society estimates that breast cancer, behind skin cancer the second most common form of the disease in women, affects one in eight women, with more than 350,000 new cases of invasive and ductal carcinoma in situ — a condition that affects the cells of the breast's milk ducts — diagnosed every year.

The numbers are frightening, but treatment of the disease has come a long way.

"The real message is breast cancer treatment is becoming increasingly minimalistic from both a surgery and a radiation standpoint, with fewer side effects and without compromising positive outcomes," Imami said.

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