

Dermatology Times Dermatology Cutaneous oncology

SRT: Technology offers positive benefits and strong cure rates

April 01, 2017

By Bob Kronemyer

Although superficial radiation therapy for the treatment of nonmelanoma skin cancer is not new, an increasing number of dermatologists have recently reclaimed the technology.

“When I was a dermatology resident at New York University over 30 years ago, superficial radiation therapy (SRT) was a significant treatment modality that we used all the time,” says David Goldberg, M.D., J.D., director of Skin Laser & Surgery Specialists of New York and New Jersey. “The problem 30 years ago was not that the therapy was ineffective, but that the machines were very unstable and often broke down; plus, there were ongoing concerns about leaks of radiation.”

Those challenges, coupled with the rising popularity of Mohs micrographic surgery, resulted in SRT, “as we know of it, disappearing,” Dr. Goldberg tells *Dermatology Times*, in an interview following his presentation at the 2017 South Beach Symposium in Miami Beach, Fla. (February).

Over the past three decades, radiation therapy has entered the domain of radiation oncology rather than dermatology. More recently, however, SRT technology has reemerged, “with very small machines, extremely stable, and very easy to install in an outpatient environment,” Dr. Goldberg says. “Now, all of a sudden, this technique has become highly popular again.”

Cure rates for nonmelanoma skin cancer when using SRT are roughly 97%, which is slightly lower than the nearly 100% success for Mohs.

The SRT-100 System (Sensus) is the only FDA-approved SRT device for total body treatment of nonmelanoma skin cancer.

“This equipment uses low-energy photon X-rays,” says Dr. Goldberg, who has been using the system for 3 years now. “We are not trying to penetrate bone or internal organs.”

The approved system delivers gentle, indirect radiation, along with three variable peak voltages: 50, 70 and 100 kVp, he explains.

“These voltages allow you to attain the depth necessary to effectively treat nonmelanoma skin cancer, without destroying any underlying healthy tissue,” Dr. Goldberg observes. “That is why the technology is so incredibly safe.”

The SRT-100 System is also extremely accurate because of internal technology which not only makes it easy to administer, “but automatically stops when the cumulative amount of radiation has been delivered,” Dr. Goldberg explains.

Radiation leakage is no longer a barrier either, because “the machine is so well calibrated to effectively target and treat the desired spot.”

The device is small enough to fit in a regular exam room with other equipment.

“When the machine is turned off, there is no leakage at all,” Dr. Goldberg says. “You cannot even measure any detectable radiation in the badges that I and the staff wear.”

Dr. Goldberg also notes that his SRT system has never malfunctioned.

Patients treated medically with the device tend to be slightly older. They might also have leg swelling on the site of the skin cancer, thus making them poor candidates for surgery. Older men with very large skin cancers on their scalp are also candidates for SRT.

The two popular body sites for treatment are lower legs and scalp associated with basal cell and squamous cell carcinomas. But Dr. Goldberg usually reserves Mohs for those patients with recurrent cancer or who have skin cancers on the central face.

The common treatment protocol for SRT is 14 sessions over the course of seven weeks (twice weekly), with each session lasting only one minute.

“For the patient, it is like going to the dentist, with draping a lead apron,” Dr. Goldberg says. “There is absolutely no patient discomfort. There is no numbing medicine and no wound. The radiation simply slowly shrinks the tumor. There is also no recovery time.”

As for the mechanism of action, “any kind of cancer has rapid turnover of cells,” Dr. Goldberg says. “Radiation therapy inhibits that turnover to kill the tumor.”

Keloid tx success

Besides treating nonmelanoma skin cancer, Dr. Goldberg has had success treating keloids with SRT, which he says is the only effective treatment when immediately preceded by excision.

“In one study from Florida, which has yet to be published, and in other studies, the success rate is between 90% and 100%,” he reports.

The treatment protocol for keloids is one to three sessions, spaced two to seven days apart.

Aesthetic indications

Two cosmetic indications for SRT are the eyelid and the ear.

“The cosmetic outcomes are terrific,” Dr. Goldberg says. “We have used this technique on some younger people, with their understanding that there is a slightly higher recurrence rate than with Mohs. If the skin cancer returns, they will require Mohs, which is more difficult to perform to an area of radiation therapy.”

The SRT treatment protocol for cosmetic indications is the same as for medical indications.

Overall, the SRT-100 System “serves a very important medical role in the treatment of nonmelanoma skin cancer and a very important cosmetic role in the treatment of keloids,” Dr. Goldberg says.

Disclosure: Dr. Goldberg is a Consultant to Sensus Health Care and oversees an ACGME fellowship in Micrographic Surgery and Cutaneous Oncology.