

Rethinking Alternative Options for Skin Cancer Management

Having options for patients who might not qualify for surgery—or who may not want surgery—assures the ability to individualize care.



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The advent of Mohs surgery has significantly changed the treatment paradigm for skin cancer. However, a surgical approach is not always desirable, and other options may present fewer side effects or unwanted consequences. As well, many patients simply do not want to undergo a surgical correction for a problem that may not be life threatening.

In select cases, radiation therapy offers a viable alternate option to surgery. Although this option has historically been considered a less desirable treatment approach, advances in radiation platforms should cause us to rethink that dogma. In particular, superficial radiation (SRT) with the Sensus SRT-100 offers an excellent alternative to surgery, as it delivers highly specific therapy with little risk to adjacent non-target tissue in a short treatment session (usually five to 15 minutes) without anesthesia, and there is no associated downtime or need to restrict lifestyle activities (see Sidebar: A Different Radiation Modality).

A VIABLE ALTERNATIVE TO SURGERY

The epidemiology of skin cancer suggests that in the near future, more patients are going to require treatment, but not all of them will be eligible for or want to undergo surgery. Approximately 3,500,000 Americans are diagnosed with non-melanoma skin cancer each year, and more than 50 percent of these patients are over 60 years old. These are patients who may be using chronic blood thinner medications, have diabetes with poor healing, or other health concerns that would make surgery risky. At the same time, many patients with nonmelanoma skin cancer simply do not want to incur downtime because they lead extremely active lives. SRT is an ideal choice for these patients as they can return to activities immediately after the treatment.

After practicing dermatology and performing Mohs surgery for 21 years, I have found that lower extremity tumors and scalp tumors are especially difficult to reconstruct surgically. In the past, these situations resulted in higher risk of infection and need for wound care. Elderly patients with tumors in these locations who are highly active are less than ideal candidates for a surgical approach, in which case SRT seems a better option.

Safety concerns are only one of many factors that affect the decision of which treatment plan to pursue. Indeed, the category of patients who desire a nonsurgical approach is expanding. One aspect that may direct the treatment decision is the location of the lesion. For tumors located in delicate skin zones—such as on the face and ears or hair-bearing areas—Mohs surgery is a very good option. For other locations, such as the trunk and extremities, excision is a reasonable choice. These are by no means absolutes, but even so, that leaves a lot of potential skin zones where the best option is a matter of balancing an effective treatment strategy from an efficacy standpoint against patient choice, safety concerns, potential for favorable cosmesis, and the consequences for interrupting life activities due to the selected treatment.

PATIENT SELECTION

The potential to minimally impact quality of life is a nice feature of SRT, but it would be almost meaningless if the modality offered a less effective treatment. In fact, cure rates in published studies with SRT are around 95 percent to 98 percent, which compare very favorably with Mohs (about 98 percent to 99 percent) and excision procedures (about 92 percent). In my practice, I have been offering SRT for about 2.5 years, and my patients are very happy with the outcomes; several patients have expressed that they wish to have all of their tumors treated with SRT, regardless of the tumor location.

One of the aspects that patients find especially compelling about SRT is the minimal associated downtime. Some recipients of SRT experience mild erythema at the treatment site,

similar to a sunburn reaction; skin at the treatment site may peel. However, in the vast majority of cases, there is no downtime, and patients return to all of their daily activities without restrictions.

There are important factors associated with SRT to be aware of. In particular, multiple treatments are required, and so patients will have to make several trips to the clinic. However, on average, a Mohs procedure can take up to eight hours in some cases to complete, while the SRT protocol, even when delivered in multiple 10-minute sessions, takes much less total time. Patients are more or less in and out in a very quick timeframe for an individual SRT session before they are off to continue their daily activities. The disruption to normal life activities is pretty favorable for SRT versus a surgical approach.

These considerations highlight the importance of patient selection for SRT versus Mohs or other surgical procedures. Previous radiation exposure at the lesion site is a contraindication, and because radiation exposure may cause permanent hair loss, hair-bearing areas are a relative contraindication. On the other hand, SRT may be a less invasive option for large-sized lesions, especially those on the lower extremities with high potential for rupture of the incision site, on the soles of the feet, or in the pit of the elbow or knee.

CONCLUSION

Superficial radiation therapy with the SRT-100 is a viable option for tumor control, tissue preservation, and excellent cosmesis in select patients. SRT is an excellent non-surgical option for patients who are not medically fit for surgery, have contraindications for reconstructive surgery, or are receiving anticoagulants. Specific situations in which SRT offers advantages include those in which surgery may cause nerve damage or functional impairment. Contraindications to SRT are tumors in hair bearing locations and previous radiation treatment to the area, although these are relative in light of the fact that some patients may consider the option to avoid surgery as more important.

There may be other benefits to utilizing SRT versus Mohs or other surgeries. Insurance coverage for Mohs surgeries vary by state, and at least four states will not cover procedures on the head and neck. Even if an insurance carrier will cover Mohs, it is an expensive procedure, whereas costs associated with SRT are considerably lower. As we look to a future of potentially increased regulations on the healthcare field, including mandates to help control healthcare spending, SRT may start to become a more attractive option in some payer's vantage point. That it is also preferred by many patients may be a tipping point to bring radiation therapy back in to favor in regular dermatologic practice. ■

A Different Radiation Modality

By Kristine Romine, MD

The idea of using radiation in clinical practice unfortunately has some negative connotations. For some, the idea of radiation conjures up images of Chernobyl or Fukushima, while others may immediately think of brachytherapy. However, while brachytherapy energy delivery is much like lighting a match—a quick burst of energy with high potential to induce burning—SRT is more like a hot poker that slowly warms the tissue and causes destruction of tumor cells. In short, the SRT-100 offers a different treatment option compared to other radiation modalities because its mechanism of energy delivery is highly specific.

Generally speaking, superficial radiation is an ionization process in which short wavelength and high frequency X-rays are used to target dividing cells in the skin; because cancer cells are much less able to repair themselves than normal cells, they are easily destroyed and replaced by viable healthy cells. SRT is differentiated from electron beam therapy that requires use of higher doses, thereby resulting in more latent reactions, such as skin atrophy, telangiectasia, and hypo- or hyperpigmentation of skin. Because of the concentrated energy inherent to the short wavelength/high frequency beam in SRT, radiation delivery is optimized to damage cancer cells while minimizing the effects to normal cells.

The SRT-100 is specifically engineered to deliver 100 percent of

the energy at the skin surface, with energy selection based upon the deepest portion of the lesion using one of three therapeutic energies that cover all depths of lesions that a dermatologist would want to treat. The platform delivers a precise and calibrated dose of radiation that penetrates only 5mm below the skin surface, making it one of the safest and most effective alternative skin cancer treatments available. Unlike more powerful radiation devices, SRT-100 carefully destroys malignant skin cancer cells while preserving healthy tissue by uniformly delivering radiation across the applicator port. There is no little to no effect on adjacent tissues if lead shielding is used properly.

In my experience, skin flash is a virtually nonexistent concern due to the use of lead shielding. The level of energy delivery is similar to that used to receive a dental X-ray, with actual treatment time often less than 30 seconds. The applicator sits directly on the skin, and if curvy areas are treated, plates and additional shielding can be used to help protect the adjacent tissue areas.

From a healthcare provider perspective, there is minimal risk of radiation exposure to the operator. In our clinic, my staff and I wear monitors to detect radiation doses. In the 2.5 years we have been using the SRT-100, the device has never triggered a response. In fact, the only time a member of our team has ever registered a response on the monitor is if he or she steps outside and is exposed to ultraviolet rays from the sun. That seems to suggest that our environment gives us more radiation exposure than the room we use to administer SRT.