

A NEW HORIZON: TREATING METASTATIC AND RECURRENT DISEASE

Metastatic lesions that spread beyond the original tumor site have often proved fatal. Now, state-of-the-art imaging and motion-management systems are changing that picture.

Lillian Reidell is in her seventies, and she's fighting cancer for the second time. Michael Greenberg, MD, radiation oncologist at the Dale and Frances Hughes Cancer Center in East Stroudsburg, Pennsylvania, is helping her win the fight.

A retired nursing home aide, Reidell was originally treated with chemotherapy and radiation for lung cancer. She had been disease-free for a year and a half, until she recently developed a metastatic tumor on her adrenal gland. Despite the devastating news, Reidell was sure of one thing. She did not want to suffer through another course of chemotherapy. Plus, she told Dr. Greenberg, "I don't want to lose my hair again." Dr. Greenberg explained that hair loss is a side effect of chemotherapy, and offered Reidell a new kind of radiation treatment. "We will focus on your tumor and keep away from everything else," he promised.

Metastatic lesions, or cancer that has spread beyond the original tumor site to other organs, have been notoriously hard to treat. But recent advances in image-guided radiation therapy (IGRT) are making it possible to treat many forms of metastatic disease and enabling cancer patients to survive longer.

For example, the adrenal glands, which sit on top of the kidneys, move when a person breathes and also shift around during the

course of therapy in relation to other organs. Dr. Greenberg used a set of new image-guidance devices—acquired just two months earlier—to keep the treatment beam focused on Reidell's moving tumor. Varian's On-Board Imager™ device was used to position Reidell accurately for treatment each day, while Varian's Real-Time Position Management (RPM™) respiratory gating technology coordinated beam delivery with her breathing cycle.

IMPROVING CHANCES FOR LONG-TERM SURVIVAL

IGRT technology is enabling Dr. Greenberg and other clinicians to treat many different types of metastatic and recurrent cancers. In fact, the ability to treat recurrences in the head, neck, and prostate, along with metastatic lesions in the brain, liver, lungs, and spine, is a major advantage for cancer centers that can offer patients the accuracy and precision of image-guided radiotherapy treatments.

"In many cases, people receiving treatment at centers that do not have the latest IGRT technology are told that they can't receive any more radiation," Dr. Greenberg says. "IGRT makes it possible for us to treat patients successfully a second and even a third time with radiation."

Clinicians at prominent research centers are studying the potential of image-guided radiotherapy in the treatment of a wide range of metastases. For example, researchers at Memorial Sloan-Kettering Cancer Center in New York have published several papers about their experience using image-guided intensity-modulated radiation therapy (IG-IMRT) to treat metastatic lesions of the spine, while researchers at the University of Chicago are investigating the feasibility of treating oligometastases, or cases where multiple metastases occur in a number of sites throughout the body.

By the end of her most recent series of treatments, Lillian Reidell was happy to report that all is well. "I'm okay. I don't have any pain or anything. I have a great family and I have good friends," she says. "You leave it in the hands of God and the technicians. That's all you can do. You have faith in the technology, and you see what happens." **V**

Minimizing Side Effects. Anxious to avoid another struggle with the sickening side effects of chemotherapy, metastatic cancer patient Lillian Reidell discusses a new treatment option with Dr. Michael Greenberg—image-guided radiation therapy.

