

Transcript Details

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Delivering Targeted Radiotherapy for Breast Cancer

Dr. Birnholz:

You're listening to a special focus on breast cancer from Advances in Women's Health, sponsored by Lilly.

I'm Dr. Matt Birnholz. On this episode, recorded live at the Lynn Sage Breast Cancer Symposium in Chicago, we'll hear from Dr. Jonathan Strauss, Associate Professor of Radiation Oncology at the Feinberg School of Medicine of Northwestern University.

Dr. Strauss discusses the mechanics of improving localized radiotherapy for patients with breast cancer. Let's catch up with him now.

Dr. Strauss:

When we're treating the breast, we really want to treat the breast, and we really want to avoid radiation to the nearby normal structures like the heart and lung that don't appreciate radiation. And we have some very good ways to do this so that nowadays we're awfully good at treating our target and at minimizing or eliminating dose to those other structures. Some of these ways are simple, at least simple in theory, although to execute them really accurately takes a fair amount of expertise. One of these ways is simply the prone position. Gravity pulls the breast away from the chest wall, allowing us to treat the breast without touching the underlying structures. Another way to do it is simply to move the heart away from the breast.

When a woman takes a big, deep breath in her chest, what we call deep inspiration breath-hold, she increases her intrathoracic pressure, increases the size of her lung, pulls down the diaphragm, pushes the heart down and away from the breast and really moves it far away from the radiation field. Now we have to have fancier techniques, and we use an optical mapping system to make sure that the chest wall is in the right position in space and the woman is taking in exactly the right size breath. But when we do this, it's remarkable how much heart dose can be eliminated just by a deep breath that repositions the heart within the thoracic cavity. In other circumstances in cancer, including in breast cancer, we want to treat a single spot somewhere else in the body, we want to give that spot a really good dose, which should totally eliminate it while sparing the normal tissue around it, and we call this SABR or SBRT, stereotactic ablative radiotherapy is what it's usually called now.

And you're right to say it takes making sure the patient is really immobilized in a very reproducible position. Sometimes if the tumor is in or near the lung, it means trying to reduce respiratory motion, perhaps with abdominal compression so that the tumor remains very still during treatment. It means that imaging really carefully with a mini CT scan while the patient is on the treatment table so that we can line up exactly right, and then quickly delivering this treatment from many, many angles that all converge on the tumor, treating a very small volume to a really good dose, carefully avoiding normal structures, and completely ablating the tumor. And these new technologies have totally changed the ballgame in how well we're able to eliminate tumors in other parts of the body. And there are now emerging data on circumstances where that may be very valuable to patients.

Dr. Birnholz:

That was Dr. Jonathan Strauss discussing innovative techniques to improve localized radiotherapy for patients with breast cancer. To revisit any part of this discussion and to access other episodes in this series, visit ReachMD.com/Advances-in-Women's-Health. I'm Dr. Matt Birnholz, and thank you for listening to ReachMD. Be Part of the Knowledge.