MSL
Influence. Impact.

DOTmed HealthCareBusiness news

Efficiency in the brachytherapy unit leads to patient satisfaction


BodyTom Elite CT scanner

September 15, 2017

By: Dr. Lane R. Rosen

From the September 2017 issue of DOTmed HealthCare Business News magazine

In radiation oncology, trends are moving toward treatment approaches that lead to better cures with lower toxicity, and will be significantly impacted by overall patient satisfaction and therapy outcomes.

With a growing number of treatment options, efficiency can be a challenge in a large and busy radiation oncology department, especially when using more advanced technologies and electronic medical records.

As director of a tertiary care radiation oncology department at the Willis-Knighton Cancer Center, a large component of our practice involves brachytherapy.

Brachytherapy has often been called the ultimate of conformal therapy. When compared with other forms of radiotherapy, brachytherapy will always provide better tumor coverage with less exposure to surrounding tissue because it involves placing a radioactive source directly into, or adjacent to, a tumor. Over the last 15 years, brachytherapy has become increasingly dependent on the use of pretreatment imaging with CT scans, MRIs or ultrasounds because of the importance of precise placement.

In our busy department, we have taken a number of actions to ensure careful, precise and efficient brachytherapy options for our patients.

Dedicated brachytherapy team

At Willis-Knighton, we have a dedicated brachytherapy team consisting of a physician, a brachytherapy nurse, a dosimetrist and a physicist. The team is limited to the staff with the most experience in the planning and delivery of brachytherapy. The group has been involved in teaching outside physicians and

staff, and has learned a number of techniques over the past 15 years that make the brachytherapy process both more efficient and more comfortable for the patient. As part of the process of delivering brachytherapy, the team is constantly looking at opportunities to improve patient outcomes and satisfaction.

Templates and a process map

A core component of our brachytherapy program is having dedicated site-specific templates that assist the dosimetrist and physician in quality assurance. These templates help us ensure that our workflow is standardized and that we include all the critical elements of high-quality patient care. Multiple brachytherapy plans are often obtained on the same patient to determine how to achieve the best outcome as well as to assure that our dosimetry and physics team gain knowledge and are therefore able to move through the process in an effective manner. Each member of the team has a specific responsibility in preparing the patient, the afterloader device and operation of the treatment planning software.

The role of the CT scan in image-guided brachytherapy is vital. Our dedicated CT simulator has daily full schedules and limited flexibility. Traditionally, patients in our department would require movement from a procedural suite to a CT simulator suite in order to obtain images for treatment planning. This required the transfer of a patient from an operating table to a stretcher and then to the CT scan table. Frequent delays were noted due to waiting times for the CT simulator as a result. As a team, we noted that the movement from our brachytherapy suite to the CT scanner was delaying completion of the procedure and was an inefficient component of our process. It likewise resulted in patient discomfort and often had to be repeated if the afterloader devices required adjustment.

Utilizing advanced technologies to improve efficiency

Our department opted to integrate a compact self-shielded mobile CT scan to our brachytherapy suite in an attempt to increase efficiency as well as patient comfort and safety. We placed a BodyTom Elite CT scanner at the head of our operating table within the brachytherapy suite. This process allows the position of an afterloading device to be verified all in one room while the patient remains either in the treatment position or on the operating table, which is also mobile. By removing the need to transfer the patient to another diagnostic CT scan suite, we have diminished the possibility of afterloader malposition and patient motion, all while improving comfort. After the BodyTom Elite CT images are obtained and the position of the devices approved, the images are transferred directly into our treatment planning software where our dosimetrists and physicists complete the planning process.

By integrating this new technology into our brachytherapy unit, we have seen both tangible and intangible benefits. Patients spend less time on stretchers waiting for a CT suite and experience less discomfort because they're not being transferred from stretcher to stretcher. An added benefit is that our diagnostic CT scan may now be utilized exclusively for its more traditional external beam

radiotherapy CT simulation needs.

By combining advanced technology such as the BodyTom with a carefully mapped treatment process, our brachytherapy program has become much more efficient, improving the overall patient satisfaction experience at Willis-Knighton.

About the author: Lane R. Rosen, M.D., is the FACRO director, radiation oncology department, at the Willis-Knighton Cancer Center in Shreveport, La.

Dr. Lane R. Rosen