

Developing the best in Brachytherapy

When the OSF HealthCare Cancer Institute in Peoria, Illinois was being developed, plans included an enhanced brachytherapy suite. Since welcoming its first patients in early 2024, the OSF Cancer Institute has provided nearly 100 fractions (treatments) to 29 patients and continues to look for ways to bring the best treatment options to patients.

"Brachytherapy is a radiation treatment that we can use to get radiation right up into a tumor without having to go through a lot of extra normal tissues," explains Mackenzie McGee, MD, radiation oncologist with OSF HealthCare. "(With) external radiation we're going to radiate somebody from the outside in so we're going through a lot of different normal tissues. The advantage of brachytherapy is we can get an applicator right up into the tumor to deliver radiation right where it needs to be and help really spare a lot of the normal surrounding tissues."

Currently, prostate and gynecologic cancers, such as endometrial and cervical cancer, are what are primarily treated with brachytherapy.

"For patients with cervical cancer, brachytherapy is the gold standard. It does have superior control and survival rates as compared to other techniques that have been tried. When you look at good brachytherapy - so that's image guided brachytherapy, exactly what we're doing here - the control rates of the cervix are extremely high, well over 90% in most cases," says Dr. McGee.

"The brachytherapy device - the bravos - has a single Iridium 192 source and what we can do is program the source to come out through cables that we attach to our applicator so it's all a closed system to the patient and we will tell it where to go and where to stop at different points along the applicator. What we can do then is it delivers almost like a little cloud of radiation just around the area and the dose getting further out from that source is really very low."

Before treatment can begin, patients requiring advanced brachytherapy, such as cervix and prostate cancer patients, are taken to the brachytherapy suite in the OSF Cancer Institute to put the applicator in place while they are under mild anesthesia, which helps ease getting it in place and on target correctly. Because of the new set-up, the time between putting the applicator in place and treatment has been reduced by hours and the overall span of the two-dose treatment shortened to less than 24 hours in many cases. Since patients have to stay in the hospital with limited mobility while the applicator is in place, the goal is to continue to work to shorten that time.

The OSF Cancer Institute is in an elite group of the top brachytherapy treatment centers in the United States, and the only one in central Illinois to offer complex brachytherapy treatments. It is the first-ever cancer treatment center to offer GE's CT Scan technology on tracks, which increases the precision of the treatment.

"This CT is really unique because it can actually come in and move over the patient while they're still under anesthesia and we can see if our applicator is in the exact right position. If we need to adjust that applicator or the needles, we can do that while the patient is still under sedation and very comfortable," Dr. McGee explains.

"The CT on rails is really a huge win because... what it'll let us do down the road is actually introduce more applications for brachytherapy. There are studies out there about...being able to give a single dose of brachytherapy to a lung tumor to obliterate it. You can do that potentially with sarcomas as well so there's going to be other tumor types that we right now aren't able to offer but with the CT on rails we can work with our interventional radiology colleagues to help bring novel treatments to our patients that really aren't available widely across the country. This is a really unique opportunity for us to expand the brachytherapy that we offer."

In addition to the state-of-the-art technology, the OSF Cancer Institute offers a multidisciplinary approach to care which includes nurse navigators to guide patients through their treatments, supportive services like a dietitian and a financial navigator, and even a pelvic floor therapist who can help with any needs patients have down the road.

For Dr. McGee, it's all about doing what's best for her patients.

"Having the opportunity to think through what my patients go through when they're having these brachytherapy techniques. It's a scary time, there's a lot of unknowns, there is sometimes some discomfort with it. Being able to really push our team to offer the best possible patient experience that also offers them the same opportunity for cure and reduced toxicities is really exciting. I always want my patients to feel that we are doing everything we can to help them feel loved and cared for and one way we can do that is really respecting how much time they have to have some discomfort and so every opportunity we can take to improve that, I think this really allows us to do that."

Learn more about all of the treatments and services offered at the [OSF HealthCare Cancer Institute](#).