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WASHINGTON, Mo. – Anyone that can destroy cancerous tumors with precisely directed beams of radiation might be difficult to impress. Still, Dr. Robert Frazier, radiation oncologist, is truly excited by the capabilities of the new linear accelerator that's been installed in the Mercy Cancer Center in Washington.

"It's an unbelievable machine, one of the most advanced in the world," Dr. Frazier said. "We hope to get one like it in St. Louis when it's time for an upgrade."

The new Elekta Versa HD is the first of its kind in Missouri and one of less than 20 in the United States, said Joe Pecoraro, executive director of radiation oncology for Mercy. It has been installed and was put into service this week when Mercy's cancer services were consolidated into one location with Mercy Medical Building South.

"The machine we now have in Washington is like the latest model of a new car. It has all the newest safety equipment available and the best possible imaging," Dr. Frazier said. "It has more complicated parts, but because it is more integrated, it is actually easier for technologists to use."

The new linear accelerator is the latest evolution in the treatment of cancer using radiation therapy. An integrated CT scanner allows the physician to precisely direct the treatment to tumors guided by three-dimensional images.

"When radiation treatment first started, we took an x-ray of the part of the body, and the physician would draw on the x-ray with a marker to indicate how lead blocks should be made to target the tumor and protect normal tissue," Dr. Frazier said. "As CT scans came on board, we could actually create three-dimensional structures. Computers allowed us to identify our targets better and keep radiation away from normal structures."

The lead blocks have been replaced with internal, overlapping leaves that function like a shutter on a camera directing the radiation in any possible shape. Because the doses of radiation can be delivered so precisely, they can also be delivered with increased intensity.

"The biggest benefit is a quicker treatment time," Dr. Frazier said. "The new machine generates the radiation much faster and the sophisticated shutter system guides the radiation better."

In addition to the time saved with each treatment, another important benefit for the patient provided by the precise nature of the new equipment is a reduction in side effects.

"The very fine adjustments allowed by the shutter mean more control of the radiation dose and minimization of the radiation scatter to other tissue," Dr. Frazier said. "We are also getting new treatment planning software to make the radiation plans for each individual patient. We will be able to create better plans and further reduce damage to normal tissue."

Patients will experience improved treatment times, fewer side effects, and the recovery time from those side effects will be reduced.

Dr. Frazier said that eventually the new linear accelerator will allow additional therapy options including stereotactic radiation, which uses ultra precision, high-dose radiation with very few treatments.

"The therapy could mean patients who are now being treated for six weeks, might be able to complete treatments in two or three weeks," Frazier said.

The consolidation of services into one building extends the list of benefits for patients. By bringing radiation oncology, chemotherapy and the physician offices into one cancer center, patients have reduced travel times and the convenience of coordinated scheduling.

"The biggest benefit is the one-stop location for those on dual modality," said clinic manager Kim Davis. "It's quite frequent that patients require both radiation and chemotherapy. We're able to perform all of their lab work, and we will have access to each other's schedules to coordinate patient care."

The cancer center has designated parking spaces for patients near the building. The newer facility has many aesthetic updates and a large, comfortable waiting area, Davis said.

"Our infusion center is beautiful," she said. "We just added our relaxation garden outside of our infusion room. We call it the healing garden."

Dr. Frazier said about 40 to 50 percent of cancer patients receive chemotherapy and radiation at the same time. Not having to travel to two different locations will make a big difference, especially for those who may be weakened by their treatments.

"It also means you don't have to go to St. Louis to get the most advanced treatment in the world. It's right here in Washington," Frazier said.

Patients can schedule all their appointments and get information by calling 636-390-1600 for all services at the cancer center.