

First patient treated with novel proton therapy system

January 27 2014, by Jim Goodwin

(Medical Xpress)—A 33-year-old man from Leasburg, Mo., was the first patient to receive a revolutionary form of highly accurate radiation treatment from the world's first proton system of its kind. The treatment was administered last month at Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine in St. Louis.

Steven Osborne has a rare type of cancer called chondrosarcoma at the base of his skull. He will undergo a 30- to 45-minute session each weekday for seven weeks as the first patient of the S. Lee Kling Proton Therapy Center at Washington University Medical Center.

The S. Lee Kling Proton Therapy Center provides [proton therapy](#) to adult patients of Siteman Cancer Center and pediatric patients of St. Louis Children's Hospital. Patients eligible for the therapy have cancer near vital organs such as the spine, brain, heart and eyes.

"Proton therapy is unique because it allows for very precise adjustments to the radiation beam, so we can precisely target tumors," said Jeffrey Bradley, MD, director of the Proton Therapy Center. "It helps to minimize damage to surrounding tissue and is especially useful when treating growing children."

For example, treatment of a brain tumor such as Osborne's with proton therapy may be less likely to result in blindness or other complications, said Bradley, who also is the S. Lee Kling Professor of Radiation Oncology at Washington University.

A superconducting synchrocyclotron proton accelerator is a key component of the new proton therapy system. The relatively small size of the device allows it to fit in a single room that isn't much larger than a traditional radiation therapy room. The cost of this single-vault proton therapy system was about \$20 million. That represents a fraction of the investment needed for traditional proton therapy systems, which typically are housed in football field-sized buildings and cost in excess of \$150 million.

"Our team of Washington University radiation oncologists and physicists has been instrumental in developing treatment planning and quality-assurance processes for this technology," Bradley said. "We're now focused on using it to provide the best possible care for our patients."

The S. Lee Kling Proton Therapy Center plans to treat 20 to 25 patients a day. Treatment typically will require daily 30-minute sessions for two months. The center will serve the Midwest. The next closest location offering proton therapy is 225 miles away.

"The Siteman Cancer Center is pleased to be able to provide this new type of proton therapy," said Timothy Eberlein, MD, Siteman's director, chair of the university's Department of Surgery, and the Bixby and Spencer T. and Ann W. Olin Distinguished Professor. "As partners in the development of this technology, we are translating cutting-edge science into better treatment options for our patients."

The Proton Therapy Center was named after S. Lee Kling, a visionary St. Louisan who had to travel to the East Coast to receive proton therapy for an eye tumor. Kling, the former chairman of The Foundation for Barnes-Jewish Hospital's board of directors, believed the therapy should be more accessible and available to patients in the area. His efforts helped raise \$2.3 million through a foundation event to fund research and the construction of a proton therapy facility.

Provided by Washington University School of Medicine in St. Louis

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