

» CYBERKNIFE

It sounds like a weapon in a science-fiction movie. Instead, the CyberKnife is a weapon in the war against brain and spine cancers. And Saint Peter's recently became affiliated with John D. Lipani, M.D., Ph.D., one of a select few neurosurgeons in the world to have received extensive training in CyberKnife radiosurgery under Stanford University School of Medicine neurosurgery professor John R. Adler, M.D., CyberKnife's inventor.

Dr. Lipani joins an already select group of CyberKnife-trained physicians who work at Saint Peter's, including Arno Fried, M.D., chief of adult and pediatric neurosurgery.

Dr. Lipani, founding director of Princeton Neurological Surgery P.C. and the Brain and Spine Radiosurgery Institute, explains that CyberKnife radiosurgery has changed the way doctors manage brain and spine tumors. "Traditional open brain and spine surgery can be quite traumatic for the patient and often requires a pro-

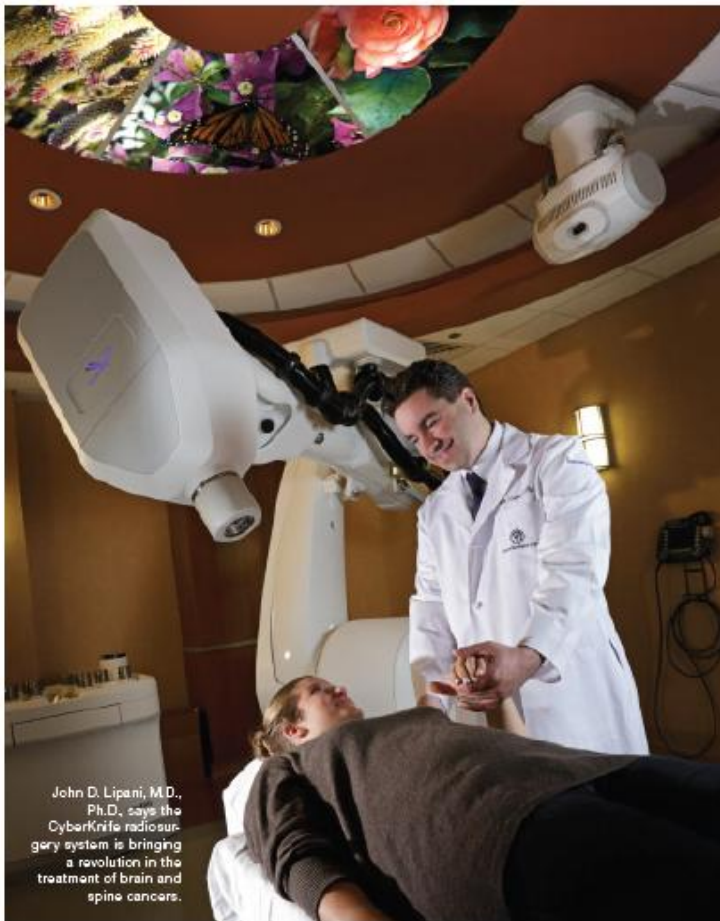
longed recovery period," he says. "This new knifeless technology allows patients to get better faster."

The CyberKnife delivers about 100 beams of relatively low-level radiation from all different angles, computed to converge right at the tumor site. The rays pass through healthy tissue without damage and then combine to reach cancer-killing levels of radiation. "Each beam is innocuous on its own, but together they are very potent," says the doctor. The technology allows surgeons to destroy deep-seated tumors without creating a destructive pathway through precious neural tissue, as is often the case with traditional open brain and spine surgery.

A distinct advantage of CyberKnife is that, while other radiosurgical devices require a rigid head frame fixed to the skull for targeting purposes, its advanced imaging system is able to precisely locate the tumor without a head frame. In addition, a process called hypofractionation can be used in which smaller amounts of radiation are delivered over two to five days to further protect critically important neural tissue from radiation damage. Frameless technology also greatly improves patient comfort and allows for easy outpatient treatments—some patients have their radiation delivered on their lunch hour and then head back to work.

Dr. Lipani currently uses the CyberKnife to destroy tumors in critical locations of the brain and spine, but he says the beauty of the machine is that it can be used anywhere in the body. And now, after about a dozen years of clinical research, "its effectiveness cannot be denied," he says, "and this technology will undoubtedly continue to become increasingly more common."

For now, it's enough to know that brain and spine cancers are up against this formidable foe. "I have a 99 percent success rate for treating brain and spine cancers while preserving cognitive ability, mental function and spinal stability with this tool," Dr. Lipani says. "We are revolutionizing the way we manage cancer in the brain and spine." —DAVID LEVINE



John D. Lipani, M.D., Ph.D., says the CyberKnife radiosurgery system is bringing a revolution in the treatment of brain and spine cancers.

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