

Brie Oestreich, certified nuclear medicine technician, assists Shannon Walker into the PET scanner.



C. R. Kim, MD, stands by the linear accelerator used for IMRT treatment. Dr. Kim is the medical director for radiation oncology at St. John Medical Center.

New technologies double-team disease

Lower Columbia Pathologists (LCP) has brought Southwest Washington its first permanent disease-hunting PET (positron emission tomography.) LCP's PET scanner was installed in January, relieving patients of the burden of traveling to Portland for this procedure.

PET reveals hidden information

Although there are several imaging processes that allow doctors to peer into a patient's body, including x-rays, MRI, and CT scans, none offer the advantages of PET.

After the patient is injected with a radioactive dose of glucose, doctors use the PET scanner to watch how

the body metabolizes the glucose. Cancer cells are usually more metabolically active than normal cells, forming hot spots the physician is able to view on the functional images produced by the PET scanner.

PET scans are considered the gold standard for evaluating the viability of heart tissue to help determine if a patient is a candidate for bypass surgery or transplant. PET can also be used to show biological changes attributable to Alzheimer's disease.

LCP's nuclear medicine specialist, Hasan Osman, MD, says PET is not intended to replace CT or MRI. Instead, the technologies are complementary, and when used together can create the clearest possible picture of what is happening inside the patient's body.

Robert Sandstrom, MD, president of LCP, says PET is a growing field in nuclear medicine, and LCP will continue to stay abreast of the evolving technology.

IMRT gives precise treatment

Oncologists at St. John are excited about PET and another new technology that is helping in diagnosis and treatment of disease.

Intensity modulated radiation therapy, or IMRT, gives physicians the ability to deliver precise doses of high radiation while minimizing damaging side effects.

Older radiation technology uses a large radiation beam through the body, which strikes both healthy and diseased tissues.

But with IMRT, the radiation is effectively broken up into thousands of tiny, pencil-thin radiation beams. With millimeter accuracy, the beams enter the body from multiple angles and intersect on the cancer. The process delivers a high dose of radiation to the tumor and a lower dose to the surrounding healthy tissues.

IMRT's radiation beam is so versatile that it can be reshaped during treatments, maximizing oncologists' ability to hit cancerous targets. The system also allows doctors to see tumors in three dimensions, a great help in planning the counterattack against cancer.

Another benefit of IMRT's precision is the opportunity it creates to offer safer treatment for tumors located very close to delicate organs such as the eye, spinal cord, and rectum.

PET and IMRT are two technologies showing great promise as a one-two punch in the battle against disease.

Lower Columbia Regional Cancer Center

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