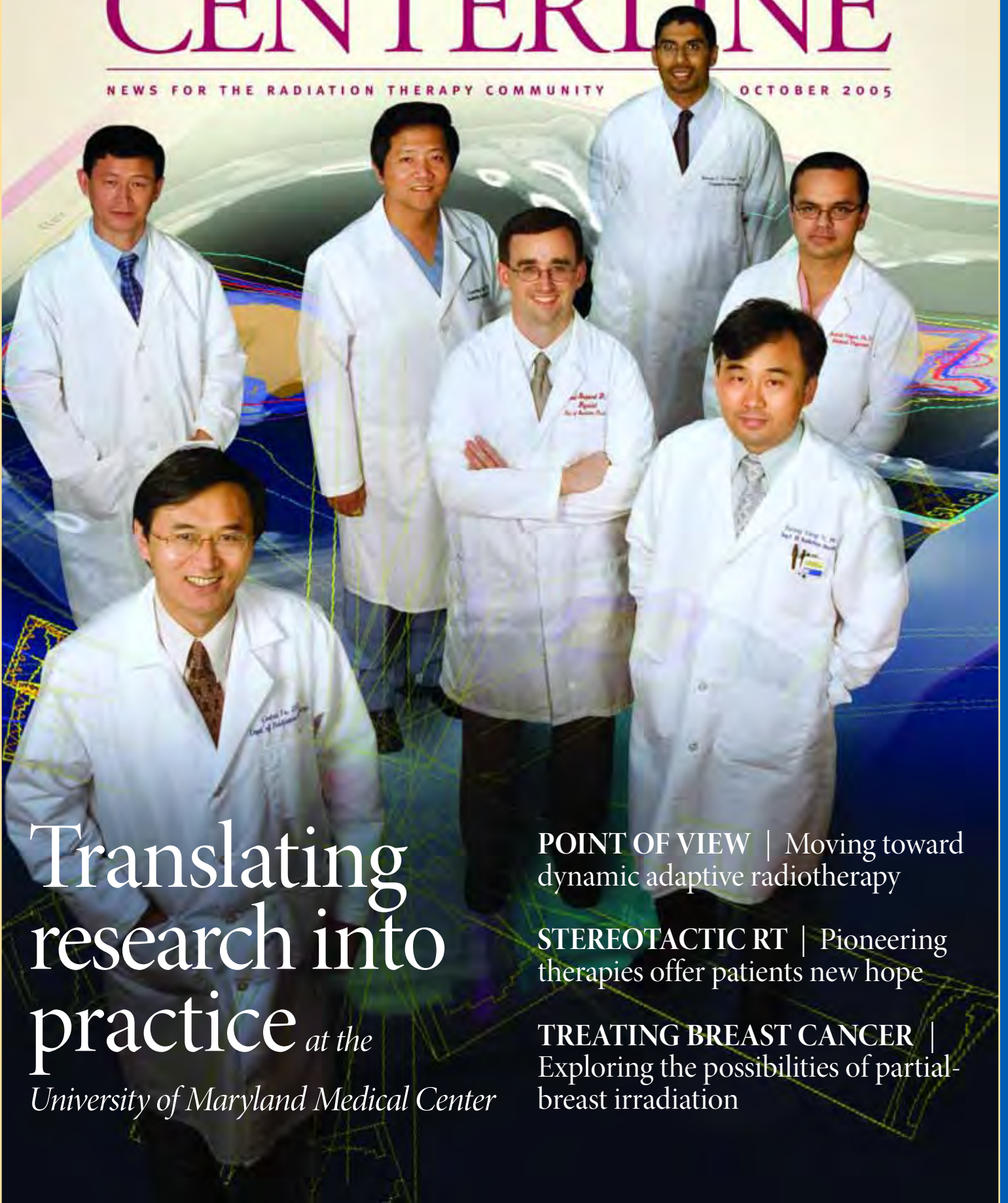


Varian Medical Systems

CENTERLINE

NEWS FOR THE RADIATION THERAPY COMMUNITY

OCTOBER 2005



Translating
research into
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POINT OF VIEW | Moving toward
dynamic adaptive radiotherapy

STEREOTACTIC RT | Pioneering
therapies offer patients new hope

TREATING BREAST CANCER |
Exploring the possibilities of partial-
breast irradiation

Clinics worldwide adopt On-Board Imager device for IGRT



In August of this year, Varian Medical Systems announced that the company is experiencing robust demand for its image-guided radiation therapy (IGRT) products. By August, Varian had installed or commenced installation of more than 100 On-Board Imager™ devices for IGRT.

On-Board Imager devices have been or are currently being installed at leading cancer centers in Venezuela, Australia, New Zealand, Taiwan, and Japan. The devices can be ordered with new linear accelerators, such as Varian's Clinac® iX or Trilogy™ machines, or they can be added to many existing accelerators.

The On-Board Imager device makes it possible for clinicians to image and treat patients on a single machine. Mounted on the linac, the On-Board Imager produces high-resolution images of the tumor and tracks changes in tumor shape, size, or position due to shrinkage or shifting over a multiweek course of treatment, and due to respiration.

Emory University uses novel approach to target moving tumors

In Atlanta, Georgia, Emory University School of Medicine's Department of Radiation Oncology became one of the first cancer treatment centers in the world to use the On-Board Imager

device to treat a case of gall bladder cancer. Emory's approach was designed to compensate for tumor motion due to the patient's normal breathing during treatment.

Prior to treatment, a gastrointestinal surgical oncologist implanted radiopaque clips into the tumor bed. Clinicians then used 4D CT scanning to reveal how the patient's anatomy moved over time while he breathed. "We were able to see the point in the patient's breathing cycle where the tumor was furthest away from the small intestine," says Jerome Landry, MD, professor of radiation oncology at Emory. "We then planned to deliver the treatments only at that point in the respiratory cycle."

The Emory team positioned the patient for daily treatment using the On-Board Imager in conjunction with the RPM™ respiratory gating system. "This was the first time we'd integrated respiratory gating with on-board imaging," explains chief medical physicist Timothy Fox, PhD, who assisted Landry with the treatment. "We used the gating system to make the tumor 'stand still' for us. We used the On-Board Imager to get a look at the implanted clips and move the patient into the proper position for treatment."

Community Care Physicians deliver ultraprecise IGRT

Clinicians at Community Care Physicians (CCP) of Latham, New York, have been using Varian's On-Board Imager device since April 2005 to offer IGRT treatment for prostate and other forms of cancer. In the first month and a half, they treated nearly 40 patients using the new technology and found that the system was efficient enough for treating about 30 patients per day.

CCP therapists need about 15 minutes to generate two orthogonal images and deliver a seven-field IMRT plan. That includes setting up the patient, imaging, image matching, and delivering the treatment. "The speed is partly due to the total integration of Varian's IGRT system," says Arun Puranik, MD, director of CCP's IGRT department. "Everything is seamless now, between the Eclipse™ treatment planning and the VARIiS® Vision information system, so data transfer is immediate. The treatment proceeds automatically from one gantry angle to the next."

IGRT images for a patient with recurrence following prostatectomy. Surgical clips in the prostatic bed were contoured during the planning process and identified prior to every treatment. These clips would not be identifiable using either megavoltage or ultrasound imaging.



Image courtesy of Community Care Physicians.