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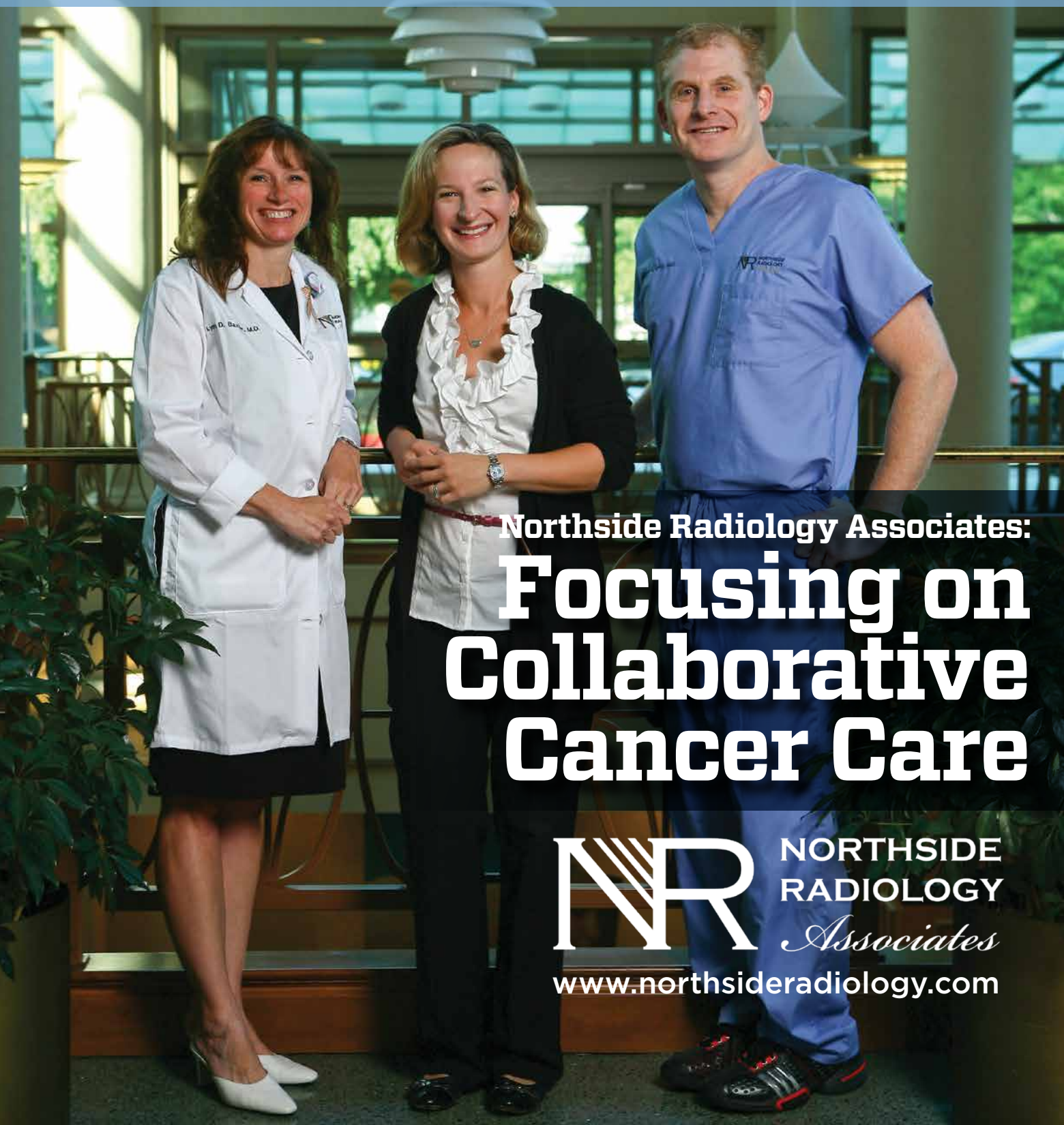

Northside Radiology Associates:

Focusing on Collaborative Cancer Care

NORTHSIDE RADIOLOGY *Associates*

www.northsideradiology.com

Northside Radiology Associates: *Focusing* on *Collaborative Cancer Care*

SINCE 2010, NORTHSIDE HOSPITAL HAS BEEN A MEMBER OF THE NATIONAL CANCER INSTITUTE (NCI) COMMUNITY CANCER CENTERS PROGRAM, IN WHICH 21 SELECT FACILITIES IN 16 STATES COLLABORATE WITH ONE ANOTHER, NATIONAL CANCER ORGANIZATIONS AND THE RESEARCH COMMUNITY TO ENHANCE PATIENT CARE AND PROMOTE BEST PRACTICES FOR CANCER TREATMENTS. NORTHSIDE RADIOLOGY ASSOCIATES CONTRIBUTES ITS STAFF OF 40 HIGHLY SKILLED RADIOLOGISTS TO THE NORTHSIDE HOSPITAL SYSTEM, SUPPORTING THE NCI PROGRAM AND PROVIDING A WIDE RANGE OF DIAGNOSTIC AND INTERVENTIONAL PROCEDURES.

ACCORDING TO CAROLYN WEAVER, M.D., Clinical Director of Radiology at Northside Hospital Atlanta, patients typically come under the care of Northside Radiology Associates in one of two ways. New patients may enter the system for a screening study, such as a mammogram or chest computed tomography (CT) scan, or they may seek help for a particular symptom, such as chest pain, headache or cough.

Northside Radiology Associates is structured to encourage collaboration, and the level of expertise possessed by its physicians facilitates this engagement. Many times, according to Dr. Weaver, Northside Radiology Associates' physicians conduct a one-on-one consultation with the appropriate specialist when there are suspicious findings on a diagnostic image.

Raising the Standard for Breast Cancer Detection

At the forefront of cancer detection, Northside Radiology Associates has access to the most state-of-the-art technologies and treatments. Lynn D. Baxter, M.D., Director of Breast Imaging at Northside Radiology Associates, points out that a fundamental issue with typical mammographic imaging is that it presents a 3-D structure in a 2-D image. The X-ray beam in a mammography scan goes through the entire breast in a straight line, resulting in a composite image of all layers of the breast represented on top of one another. This can hamper accurate diagnosis, says Dr. Baxter, because overlapping tissue can falsely appear to be a mass. These false positives lead to recalls and more tests, which can be a tremendous stress for patients, wasting time and exposing them to more radiation. Overlapping or dense tissue can also obstruct the view of small cancerous growths, preventing detection during the early stages, when the cancer is most treatable.

To decrease callbacks and increase the detection of small growths, Northside Radiology Associates uses 3-D breast tomosynthesis. In the same amount of time taken to perform a typical 2-D mammography scan — and, in fact, with 2-D mammographic imaging captured in the same scan — 3-D tomosynthesis equipment moves in an arc, taking multiple-angle pictures that are sent to a computer. There, the images are reconstructed as a series of 1mm slices, which, Dr. Baxter says, enables physicians to see each part of the breast without any overlap. For patients, there is no noticeable difference between the procedures used for 3-D tomosynthesis and typical mammography. Exam time and compression of the breast are similar for both procedures.

A Complementary Diagnostic Tool

The United States Food and Drug Administration has approved the use of 3-D tomosynthesis only in conjunction with traditional mammography, Dr. Baxter notes, as, even with all of the improvements, traditional mammography is still better than its newer counterpart at detecting small calcifications. Three-dimensional tomosynthesis is, however, more effective in finding masses and areas of distorted tissue, Dr. Baxter says.

For the most part, 3-D tomosynthesis is most useful as a component of yearly screenings, Dr. Baxter says. Additionally, 3-D breast tomosynthesis can help specialists better distinguish asymmetrical breast tissue.

Multidisciplinary Treatment Plans

If a patient's initial workup reveals a malignancy, the formal staging process begins. CTs of the head, chest, abdomen and pelvis may be conducted, as may positron emission tomography (PET) scans. Then, the patient's treatment plan is determined by a multidisciplinary team of specialists dedicated to a specific area of the body. Typically, says Dr. Weaver, these teams are specialized by organ system or malignancy.

At Northside Hospital, representatives from radiology, pathology, oncology, surgery and radiation oncology, joined by support personnel such as patient navigators, genetic counselors and clinical research coordinators, gather

THE EXPERTS AT NORTHSIDE RADIOLOGY ASSOCIATES

+ Absar Ahmed, M.D.
+ James R. Amerson Jr., M.D.
+ Richard E. Barlow, M.D.
+ Lynn D. Baxter, M.D.
+ Meredith W. Bell, M.D.
+ Lisa E. Bennett, M.D.
+ Patrick D. Datoc, M.D.
+ Jose E. de Lima Jr., M.D.
+ Leeanna Dick, M.D.
+ Clifford M. Feiner, M.D.
+ Tanya M. Fields, M.D.
+ Amy J. Figueroa, M.D.
+ Kim M. Gray, M.D.
+ Soheil L. Hanna, M.D.
+ George Kallianos, M.D.
+ Douglas A. Kallman, M.D.
+ Eugene E. Lee, M.D.
+ Jason R. Levy, M.D.
+ Thomas Edward McIntosh, M.D.
+ Richard Meli, M.D.
+ Steven G. Moss, M.D.
+ Mark D. Nicol, M.D.
+ Kathleen Nixon, M.D.
+ Shannon Norris, M.D.
+ Todd Ostrow, M.D.
+ Serge Ouanounou, M.D.
+ Jin Park, M.D.
+ Heather W. Pearlman, M.D.
+ Praveen C. Reddy, M.D.
+ Sharon K. Rim, M.D.
+ Brian D. Sydow, M.D.
+ Russell B. Tippins, M.D.
+ Andy Tyber, M.D.
+ Robert T. Tyrrel, M.D.
+ Venetia G. Vassiliades, M.D.
+ Sreekanth Vemuri, M.D.
+ Carolyn J. Weaver, M.D.
+ James B. Weinstein, M.D.
+ Heather Whitney, M.D.
+ James F. Zakem, M.D.
+ Debbie Evans, PA-C
+ Casey Grimsley, R.N.
+ Mackenzie King, R.N.
+ Jackie Knight, NP-C
+ Angela Lewis, R.N.
+ Kacey Phillips, R.N.

at case conferences to see patient presentations and collaboratively devise treatment plans.

"These case conferences play an integral role in the collaborative approach to oncology care and treatment," says Dianne Keen, Director of Business Development at Northside Radiology Associates. "We've recently been involved in the formation of a new case conference at Northside Hospital dedicated to abdominal and liver tumors. As treatments for liver cancer, in particular, continue to evolve and advance, we felt very strongly about the need to dedicate our time and energy to making this happen. This collaborative approach to oncology patient care allows all treatment options to be explored and discussed in a multidisciplinary setting."

A Team Approach to Cutting-Edge Therapy

Jason Levy, M.D., Director of Interventional Radiology at Northside Hospital Atlanta, Forsyth and Cherokee, says synchronous oncology treatments offered by Northside Radiology Associates require a collaborative approach. For instance, Dr. Levy says his diagnostic radiology colleagues' experience and expertise with PET scans, magnetic resonance imaging (MRI) and computed tomography (CT) help the team diagnose tumors and develop plans of attack for treatment for the interventional radiologist and oncologist.

Exemplifying Northside Radiology Associates' team approach involving its diagnostic radiologists, interventional radiologists and oncologists is the implementation of Yttrium-90 (Y-90) therapy.

"This [Yttrium-90 therapy] is not a stand-alone approach. This is a liver treatment for a systemic disease. It is best administered in combination with chemotherapy and in conjunction with oncologists."

— Jason R. Levy, M.D., Director of Interventional Radiology at Northside Hospital Atlanta, Forsyth and Cherokee

Y-90 therapy involves an embolization procedure that utilizes resin particles to introduce pinpointed, high-level radiation doses, via the radioactive element Y-90, directly to tumors that originate and remain in the liver or metastasize to the liver.

Because normal hepatic tissue does not tolerate high doses of external radiation, physicians utilize the hepatic artery to deliver radiation directly to tumors in the liver using catheter-based arteriograms, Dr. Levy says. Approaching this way leaves the majority of the liver unaffected because the portal vein, which supplies blood to most of the liver, is avoided. Working from the inside out allows physicians to deliver higher dosages of radiation than if it were delivered via external beams.

Appropriate patients for Y-90 therapy, according to Dr. Levy, are those with stable liver function and whose tumors are primarily or completely contained in the liver. CT scans and liver function tests show whether the liver will tolerate the treatment. On the other hand, patients with prior biliary-enteric anastomoses

"We provide high-quality care to patients from the minute they arrive for their screening mammogram, through any additional testing or therapy they need, all the way through survivorship. Within our practice as radiologists, we are all subspecialized, so we can bring that to patient care and be aware of the latest technology, techniques and procedures. We work with patients at each stage of their diagnosis and treatment to provide them with our expertise."

— Lynn D. Baxter, M.D., Director of Breast Imaging at Northside Radiology Associates

or sphincterotomies are considered high-risk. Dr. Levy notes, however, that some of these patients may still be candidates for this therapy but would require more in-depth collaboration and consultation with the referring physician.

Dr. Levy says that, while Y-90 therapy is most commonly used for metastatic colon cancer in the liver or for primary hepatocellular cancer, it has also been utilized for off-label treatments of neuroendocrine tumors that have metastasized to the liver, pancreatic metastases, cholangiocarcinoma, and other gastrointestinal malignancies and breast cancer metastases. Regardless of the primary malignancy, the therapy's benefits include extended life expectancies, improved quality of life and the ability to tolerate other therapies.

"One of the advantages of radioembolization is that patient tolerability is great," Dr. Levy says. "We do chemoembolization, too, which is a similar procedure using chemotherapy drugs. But we've seen that patients tend to have fewer side effects when radioembolization is used, resulting in better quality of life. We're really going for two things — increased survivability and improved quality of life."

Y-90 Therapy: The Patient's Process

After a patient goes through the staging process, he or she is sent to Dr. Levy by the referring oncologist, radiation oncologist or surgeon. At the initial consultation, Dr. Levy introduces his team, reviews the imaging and carefully chooses the most appropriate form of therapy. Tests are performed at this initial meeting to measure liver function and determine whether the patient can tolerate Y-90 therapy. A triple-phase, contrast-enhanced CT may also be done if there has not been one performed in the recent past.

The planning procedure follows on a different day. This consists of tests to measure blood flow to the tumor. Dr. Levy and his team determine the best route for the therapy administration procedure and formulate a plan to divert blood flow from the liver to other organs, such as the bowel or gallbladder, that do not need radiation. Dosing estimates are also calculated at this time.

One week later, the patient returns to the interventional radiology suite for the actual procedure. Threading a catheter into the femoral artery via a 2mm incision in the groin, Dr. Levy follows the planned path into the hepatic artery, proceeding through its branches to get as close to the tumor as possible.

After Effects

According to Dr. Levy, patients typically experience fatigue for about a week and are then able to resume normal activities. Three weeks following the procedure, the patient goes in for a follow-up visit, during which liver function is again tested. Four to eight weeks after the procedure, PET or CT scans of the liver are done to reassess the tumor burden. If the patient expresses tumor markers, these are checked at the same time. Some patients with colon cancer undergo monthly or bimonthly blood tests to track the tumor's progression. According to Dr. Levy, the therapy begins working immediately, and results can be seen within two weeks and often continue to improve their appearance on PET/CT over the next few months. After imaging assessments, the results of Y-90 therapy can be seen in the tumor markers.

"We're starting to see early evidence of survival benefit," says Dr. Levy. "It's tolerated very well, and we are now beginning to see this modality used earlier in the disease process for patients.

"This is not a stand-alone approach. This is a liver treatment for a systemic disease," Dr. Levy adds. "It is best administered in combination with chemotherapy and in conjunction with oncologists."

Distinctive Care

Aside from progressive treatment capabilities and novel screening innovations, the physicians and their processes distinguish Northside Radiology Associates.

"Our two big things are our multidisciplinary approach and the fact that we place cancer care into a smaller number of highly trained and subspecialized hands," says Dr. Weaver. "We also, by virtue of the size of our group, have people who have trained at a number of high-level institutions, so we take a very collegial approach to the cases. We regularly consult with each other, using each other's expertise in the care of these patients."

For more information about Northside Radiology Associates, visit www.northsideradiology.com or contact Dianne Keen, Director of Business Development, at (678) 553-7787 or dkeen@northsideradiology.com.

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