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Is Available in Greenville



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By Ann Tyndall, Ph.D.

According to the American Cancer Society, prostate cancer continues to be the most common form of cancer found in men in the United States. In fact, prostate cancer alone accounts for one-third of all cancers diagnosed in men, with nearly 235,000 new cases each year. The second leading cause of cancer death after lung cancer, one in six men in the U.S. will be diagnosed with this disease during their lifetime. More than 27,000 will die from this disease this year.

The good news is that over the past 10 years patients are clearly being diagnosed earlier. Because of this, most men with newly diagnosed prostate cancer are candidates for treatment that can cure their disease. Over the past 10 years, there has been a striking decline in the death rate from prostate cancer in this country. New treatment options provide promise for patients facing this disease in terms of positive outcomes and improved quality of life.

“It has been extremely gratifying for me to observe over the past 30-plus years the tremendous strides made in the surgical treatment of prostate cancer. In the past, a prostate cancer patient routinely required several units of blood transfusions and over a week in the hospital. Now it’s almost an outpatient procedure,” said Dr. Richard Gavigan, urologist with Eastern Urological Associates.



PHOTO BY BOB TYNDALL

MOST ADVANCED TREATMENT FOR PROSTATE CANCER IN NORTH CAROLINA

The department of radiation oncology at East Carolina University has joined forces with Eastern Urological Associates to develop the most advanced program for prostate cancer treatment available anywhere in North Carolina.

Prostate cancer has multiple treatment options. Some involve surgery, others radiation and even a combination of procedures is sometimes necessary. Perhaps the best way for a patient to achieve optimal therapy is through a multidisciplinary discussion of an individual's case by urologic surgeons and radiation oncologists who have the expertise in this disease. This is the foundation of the approach taken by Eastern Urological Associates and East Carolina University Radiation Oncology. In conjunction with the patients' wishes, a multidisciplinary team will evaluate the patient to assess which procedures may offer the best chance of cure with the least chance of side

effects. A strong component to this approach is having the facilities and equipment available to offer state-of-the-art therapy for whatever a particular patient requires. Fortunately, through significant efforts and investment, these advanced tools are available locally in Greenville. Treatment options that currently are the standard curative interventions for prostate cancer are prostate seed brachytherapy, surgical resection or external beam radiation therapy. Because of the program development between these practices, the most advanced tools for each approach are available for patients.

PROSTATE SURGERY

Prostate surgery has been a mainstay of treatment for prostate cancer since the early 1900s. Dr. Young at Johns Hopkins performed the first prostatectomy with intent for cancer cure and the procedure has continued to be refined ever since. At the present time radical prostatectomy, so termed because it removes the entire prostate and seminal vesicles which can be involved with the cancer, can be performed in several different ways. All of the different approaches to surgical removal of the prostate (retro pubic, perineal and even the newer laparoscopic/robotic procedures) aim to cure the disease and spare the normal tissue around the prostate. The anatomic approach to removal of the prostate, regardless of which approach is used, has led to a marked decrease in surgical morbidity, while assuring a high rate of cure of this potentially lethal disease.

At Eastern Urological Associates, two board-certified surgeons assist each other in performing the procedure. Generally, a small incision is made in the lower abdomen or in the perineum. Depending upon the patient's PSA and Gleason score, oftentimes a lymph node sampling of the areas that drain the prostate occurs concurrently. The entire surgical procedure usually lasts approximately one hour and the patient is usually able to be discharged from the hospital in 36–48 hours post procedure.

A pathologist then examines the prostate and checks the margin



Dr. Gregory Murphy and Dr. Edward Janosko review X-rays as they discuss a treatment plan for prostate cancer.

PHOTO BY BOB TYNDALL

status of the cancer. The seminal vesicles and the lymph nodes are also reviewed to see if there has been any microscopic spread. This scrutiny gives a better understanding of that particular patient's cancer. Then, depending upon the pathological extent of the cancer, a future course of therapy, usually just following the patient with serial PSAs, is initiated. If a patient has a particularly aggressive form of the cancer, further treatment with external beam radiation as well as possibly hormonal therapy may be recommended. The overall goal of treatment is curative with as little morbidity as possible.

"Every patient with prostate cancer must be treated individually," explained Dr. Greg Murphy, urologist with Eastern Urological Associates. "Their total PSA, Gleason score and core biopsy status must be examined.

"Then one must step back and evaluate each person with this diagnosis in regards to their overall health, life expectancy and expectations of treatment. Only then can one embark on a course of therapy that is correct for that individual," he concluded.

Prostatectomy is the surgical approach to eliminate prostate cancer confined to the gland. Unlike many of the urology services at cancer centers and medical schools in which surgery is done by resident trainees, the actual prostatectomy done in Greenville is performed by the board-certified attending physicians at Eastern Urological Associates. With literally thousands of cases under their belts, the chance for a successful outcome with low morbidity is better than what is routinely published in the medical literature. Because of this surgical expertise, recovery time is short.

CRYOTHERAPY FOR PROSTATE CANCER SALVAGE

Cryotherapy of the prostate is a treatment for localized recurrent prostate cancer after radiation therapy. Salvage cryotherapy of the prostate can result in undetectable serum PSA levels with low morbidity. Cryotherapy is a viable option in the treatment of patients who have biopsy-proven local failure after radiation therapy for prostate cancer, Dr. Ed Janosko,



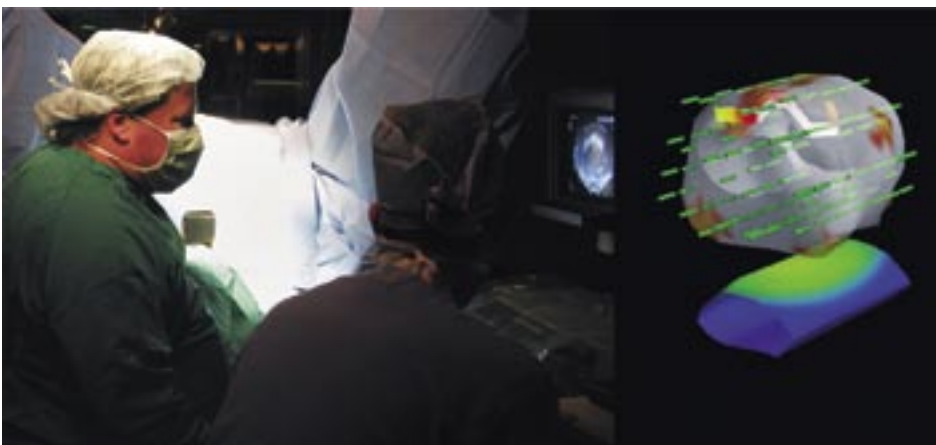
Dr. Dieter Bruno with an illustration of the robotic wrist used in robotic surgery. Traditional laparoscopic instruments are straight and do not bend. EndoWrist instruments move like a human wrist, allowing increased dexterity, maneuverability and precision.

surgeon at Eastern Urological Associates, P.A., explained. This procedure is available for select patients at Eastern Urological Associates.

ROBOTIC PROSTATE SURGERY

Robotic prostate surgery is a minimally invasive technique to remove the prostate gland. It is available in only a few centers across the nation.

Brachytherapy procedure performed by Dr. Benjamin Hines and Dr. Ron Allison with physics support by Rajen Patel from ECU Department of Radiation Oncology. Right image shows the post-procedure reconstruction showing excellent coverage of the prostate gland with sparing of critical structures.



The robotic approach is performed through several (usually five) “ports” created in the lower abdomen. These ports are between 5 and 10 mm in diameter, and allow the placement of a camera and laparoscopic instruments to carry out the surgery. No incision is made. The magnified view helps the surgeon avoid damaging the delicate structures and nerves surrounding the prostate. This nerve-sparing surgery increases the chances of the patient regaining erectile function and continence after surgery.

The actual procedure with the robotic approach is very similar to that done in a standard open fashion. The prostate, seminal vesicles and surrounding lymph nodes are removed and sent to pathology post-surgery to determine if the cancer has spread beyond the prostate gland. The potential complications of prostatectomy can include permanent impotence and/or urinary incontinence. Because of advances in surgical techniques, these consequences are not as common as they used to be. However, all men who have had their prostate removed will not produce semen and thus, will have dry orgasms.

PHOTOS BY BOB TYNDALL

While the actual procedure takes a bit longer than open surgical prostatectomy, recovery times are shorter and the hospital stay is shorter. The ideal candidate for robotic surgery has a small, early stage tumor. For the appropriate individual, robotic prostatectomy may be a highly successful and minimally morbid option with rapid recovery.

“This technology affords the patient the opportunity to have a traditional radical prostatectomy in a minimally invasive fashion,” said Dr. Dieter Bruno, surgeon at Eastern Urological Associates, P.A. “Open surgery requires a larger incision with increased blood loss. Robotic surgery allows for better visibility of surrounding structures and gives greater maneuverability with smaller incisions,” he explained.

PROSTATE BRACHYTHERAPY

Prostate seed brachytherapy is an established treatment option for cancer. “For patients who are candidates for implantation, the entire procedure, when done by Eastern Urological Associates and East Carolina University Radiation Oncology, takes about one hour from start to finish,” explained Dr. Benjamin Hines. “Under anesthesia, radioactive seeds, the size of rice, are placed directly into the prostate gland. Depending on the size of the prostate and activity of the individual seed, between 40–100 of these seeds are permanently placed. After recovery from anesthesia, the patient is generally discharged to go home on the same day. Usually within 48 hours patients can go back to their daily routine without activity or work restrictions,” he explained.

In selecting the most advanced equipment available, the physicians at Eastern Urological Associates and East Carolina University Radiation Oncology examined all the currently available prostate brachytherapy equipment. Based on extensive clinical research, a real-time ultrasound-guided system was chosen. This Bard brachytherapy system ensures that the actual prostate as seen during the actual implant procedure is optimally implanted. This is the most technically sophisticated form of brachytherapy and offers the greatest chance of a successful procedure. Unlike most other brachytherapy procedures, the Bard ProSeed technique is based on the prostate shape during the implantation. Should the implantation change the prostate’s shape, as is often the case during any type of brachytherapy procedure, this Bard ProSeed technique accounts for this change, in real time. Thus, unlike other types of prostate brachytherapy, a patient always has the highest chance to have a technically successful implantation. This particular type of technique, which requires special training for the urologist, radiation oncologist and medical physicist, is not widely available but due to its enhanced flexibility was specifically chosen. In certain select cases, prostate brachytherapy is used in conjunction with external beam treatment to hopefully improve outcomes. Many patients do not, however, routinely need this combined modality approach. This combined treatment does not always improve outcomes but rather might increase morbidity. The experts at Eastern Urological Associates and ECU Radiation Oncology can assist in this important decision.

EXTERNAL BEAM RADIATION

External beam radiation for prostate cancer has changed dramatically over the last several years. The department of radiation oncology at East Carolina University has brought online the most advanced external beam treatment device available to patients in Eastern North Carolina. Only seven of the machines are currently available in North America. The Siemens Primaton combines an ultra-precise linear accelerator (Linac)

for therapy with a spiral CT scanner in the same treatment room (CT-on-rails). This allows for state-of-the-art intensity modulated radiation treatment and image-guided radiation treatment. Intensity modulated radiation treatment is a technique that increases radiation dose distribution to tumor beds and restricts dose to normal tissues. The results should be better cancer control with fewer side effects. Image-guided radiation treatment allows for precise localization of the tumor bed and normal tissue. Thus image-guided radiation treatment ensures that the tumor is being treated and normal tissue avoided. Unlike other forms of image-guided radiation treatment, such as that based on sonograms,

Radiation Oncology Team at ECU

Ron Allison, M.D.: As professor and chair of radiation oncology, Dr. Allison has introduced state-of-the-art therapy for cancer patients of Eastern North Carolina. This included the introduction of image-guided radiation therapy and intensity modulated radiation therapy. He has been invited to lecture nationally and internationally on this subject. Further, Dr. Allison and Dr. Dieter Bruno of Eastern Urological Associates developed and implemented the prostate seed brachytherapy program at PCMH.

Marcus Randall, M.D.: Dr. Randall is the cancer center director at Leo Jenkins and is professor of radiation oncology. Dr. Randall initiated the prostate brachytherapy program at Indiana University Medical Center while he was chairman of the radiation oncology department. During that time he also oversaw the development of advanced prostate cancer treatment with radiation therapy. He brings this expertise to the patients at ECU.

Hyder Arastu, M.D.: Dr. Arastu has over 20 years’ experience in treating prostate cancer and participated in many national trials establishing the state-of-the-art care for these patients. He is certified in ProSeed brachytherapy.

Hiram Gay, M.D.: Dr. Gay has participated in prostate cancer treatment and brachytherapy at the State University of New York.

Gloria Frelix, M.D.: Dr. Frelix has treated numerous gentlemen with prostate cancer through her 20 years of clinical practice, which has included national clinical trials.

Claudio Sibata, Ph.D.: Dr. Sibata is vice chair and professor of physics at ECU Radiation Oncology. Dr. Sibata has extensive experience in the physics of prostate brachytherapy. He developed the prostate brachytherapy program at National Cancer Institute Hospitals including the Cleveland Clinic, Case Western Reserve and Roswell Park Cancer Institute. His renowned expertise has allowed for the brachytherapy program at PCMH to be highly successful. In addition Dr. Sibata is recognized as an authority on the physics of intensity modulated radiation treatment and image-guided radiation treatment.

Melodee Wolfe, M.S.: As chief clinical physicist, Ms. Wolfe is responsible to ensure the highest quality therapy for patients undergoing intensity modulated radiation treatment /image-guided radiation treatment and prostate brachytherapy. She helps direct the nine in-house physicists and dosimetrists at ECU Radiation Oncology to provide radiation therapy that is delivered optimally.

Rajen Patel, M.S.: Rajen Patel is a full-time clinical physicist at ECU Radiation Oncology in charge of ProSeed brachytherapy. He received his degree in medical physics from ECU. Mr. Patel’s major responsibility is to ensure the very best prostate brachytherapy possible. He has undergone extensive additional training in Bard ProSeed brachytherapy to make this state-of-the-art therapy available to the patients who require it. His expertise and dedication allows this procedure to be accomplished in less than one hour while still maintaining outstanding quality.

Todd Jenkins, M.S.: As a clinical physicist, Mr. Jenkins’ major responsibility is to bring optimal image-guided radiation treatment to prostate cancer patients. Mr. Jenkins, working with the physicians at ECU, has developed and devised a number of innovative techniques to enhance the success of image-guided radiation treatment. This has led to numerous lectures and presentations at major medical meetings throughout the world.



Eastern Urological Associates has been ranked among the top 50 urology practices in the country by U.S. News and World Report. Doctors comprising the practice are, from left, Dr. Gregory Murphy, Dr. Benjamin Hines, Dr. Dieter Bruno, Dr. J. Richard Gavigan and Dr. Edward Janosko.

diagnostic quality CT-based image guided radiation treatment gives the physician and therapist the most detailed picture possible of where the prostate tumor bed is. This diagnostic quality image is the key to the most accurate and reproducible localization and far exceeds all other types of image guided radiation treatment. This is particularly important in prostate cancer therapy as the prostate and prostate bed can move dramatically within the pelvis due mainly to motion from the nearby bladder and rectum. This motion is enough to cause the radiation beam to miss the prostate and also overdose normal tissue. With daily diagnostic quality CT scan-based image-guided radiation treatment, treatment fields are extremely accurate. In prostate cancer therapy this cannot be emphasized enough. This CT-based image-guided radiation treatment system has also diminished side effects by minimizing radiation dose to the sensitive bladder and rectum. East Carolina University Radiation Oncology is recognized nationally and internationally for its work in image-guided radiation treatment.

DIET AND PROSTATE CANCER

In a study of over 40,000 health professionals, Harvard investigators found that men who ate more than 10 servings of tomato-based foods weekly were 45 percent less likely to develop prostate cancer. Those who ate four to seven servings of tomato foods were 20 percent less likely to develop the disease. These findings are consistent with other studies that show low incidence of prostate cancer in Italy and Greece where tomato consumption is high.

Lycopene, a powerful antioxidant that is abundant in tomatoes and tomato products, may be the active ingredient that offers protection from prostate cancer. The benefits of consuming lycopene were even more pronounced with advanced stages of prostate cancer.

Forty-six vegetables and fruits were analyzed in men's diets and four foods were associated with a low risk of developing prostate cancer. They were tomato sauce (on spaghetti), pizza with tomato sauce, tomatoes and strawberries. Cooked tomatoes have a more protective effect than raw

tomatoes because cooking releases the lycopene from the cell walls and makes it more available. Combining the tomatoes with olive oil, as in Mediterranean dishes and salads, enhances absorption of the protective antioxidants. Eating real foods is more protective than taking lycopene supplements because it may be a combination of antioxidants in food that have the protective effect.

Several studies have shown soy foods to be beneficial in treating prostate cancer and slowing its progression. One study showed that men who drank soymilk at least once a day had a 70 percent less chance of developing prostate cancer than those who never drank soymilk at all. Prostate cancer incidence and mortality rates in Asian countries are much lower than in the United States and this may be due to the high soy content in the Asian diet.

Eating fried foods and a meat-centered diet are risk factors in developing prostate cancer. Low-fat foods and a more vegetarian diet give better results. These dietary changes will also

help decrease the risk of heart disease and stroke, a major killer of men.

PROSTATE CANCER TREATMENT AT ITS BEST

"Our team of urologists and radiation oncologists have done extensive research to find the best treatment equipment available anywhere and we can now offer that to patients in Eastern North Carolina," explained Dr. Ron Allison, M.D., professor and chairman of radiation oncology at the Brody School of Medicine at East Carolina University. "Our team has had extensive training and experience in the latest treatments and technologies to provide patients with options that may improve cancer control and reduce side effects. Our goal is to work together to provide the best treatment for each individual patient that offers the best possible outcome." ■

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