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◆ **MY EXPERIENCE WITH BRACHYTHERAPY** ◆

By
Joe Rosenberg

INTRODUCTION

I was diagnosed with prostate cancer in February 2009. I am not a veteran, but a retired military friend who chose brachytherapy for his primary treatment told me that WRAMC Us TOO welcomed anyone diagnosed with prostate cancer. So in that sense, you might say I was “drafted” into the Us TOO community! By way of a brief background, I turned 60 years old in October, 2009, and I am semi-retired, self-employed part time, but busy more with volunteer work.

My regular physician had been tracking my PSA annually. When it rose from 2.2 to 2.5 between summer 2007 and summer 2008, he had me tested again six months later. By January 2009 my PSA was 4.2, so a biopsy was in order. The results showed that I had very early-stage cancer, with one positive core out of 12 and my Gleason score was 6 (3+3).

SELECTING TREATMENT

In considering my treatment options, I read four books on the subject in preparation for seeing my urologist. In my post-biopsy appointment in March, my urologist said that if I were ten years older, “watchful waiting” might be a reasonable option. However, one of the complicating factors in my diagnosis was the fact that I had been on testosterone replacement therapy (TRT) for about six years, which was effective in maintaining my libido. Realizing that I couldn’t continue with TRT if I had untreated cancer, I soon stopped, even though I hadn’t yet selected a primary therapy for dealing with the prostate cancer. In the next few weeks, I consulted an urologist who specialized in the Da Vinci method of radical prostatectomy, as well as a radiation oncologist who performed brachytherapy (implantation of radioactive seeds in the prostate, sometimes referred to as “internal” beam radiation to distinguish it from the more well-known external beam method). I also self-tested for urinary retention using the “International Prostate Symptom Score (IPSS),” which helps to determine whether one is a candidate for brachytherapy. I scored a 14, which is “borderline,” and since urinary retention can be a problem for people undergoing this form of treatment, it became one of many factors to consider. **(Continued on page 5)**

◆ **INSIDE THIS ISSUE** ◆

First Person Account Page 1
Prostate-Specific Issues Page 3

Dr. Myron Murdock Page 7
Counselors Listing. Page 15

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◆ FROM THE EDITOR'S DESK ◆

We have concluded our recent appeal to the readership for financial support after our customary support from the pharmaceutical industry declined during 2009. We received a generous response from 197 donors, approximately 11% of our readership. The individual gifts ranged from \$5.00 to \$200.00, totaling \$10,936. The average gift was \$55.00. We are very grateful. We sent an acknowledgment to each donor. If you did not receive it, please contact me as shown at the left.

Philip Brach, PhD, PE, recently succumbed to prostate cancer. Phil was a stalwart member of the WRAMC Us TOO for many years, serving on our board of directors and as treasurer. He also contributed to the newsletter by relating his own experiences with prostate cancer in several first-person accounts. It was typical of Phil that he was a frequent volunteer in clinical trials even when he would likely not benefit from their outcomes. He simply felt an obligation to participate because "it might help some other guy." That was the kind of man he was!

◆ NOVEMBER SPEAKER'S REMARKS ◆

Our November program featured Dr. Myron I. Murdock, Medical Director for Vibrance Associates, whose topic was "Prostate Cancer, Male Sexual Health, and Incontinence." A summary of Dr. Murdock's presentation begins on page 7.

◆ MEETING SCHEDULE FOR FEBRUARY 3, 2010 ◆

There are exciting new developments in vaccine therapy to fight prostate cancer. A major announcement is coming soon! You can get in on the ground floor by joining us at 7:00 pm, Wednesday, February 3, 2010, at Joel Auditorium. James L. Gully, MD, Ph.D., F.A.C.S., presents "Immunotherapy for Prostate Cancer: Training Your Immune System to Fight Cancer," a discussion of recent ground-breaking clinical trials that show improved survival for patients receiving vaccines. He also discusses how these promising vaccines can be combined with other standard therapies. Family members and friends are always welcome.

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Robotic Versus Open Prostatectomy. In 2003, minimally invasive radical prostatectomies, which include robotic surgeries, made up fewer than 10 percent of prostate removal surgeries. By 2006-7, they constituted 43 percent of procedures. A recent study raises questions about claims of superiority of minimally invasive laparoscopic and robotic-assisted surgeries, which have led to a surge in their popularity. Hu, et al., Brigham and Women's Hospital in Boston, opine that people intuitively think that a minimally invasive approach has fewer complications, even in the absence of data. This is particularly true of well-educated men with higher incomes who are more likely to embrace this approach, often due to aggressive marketing by hospitals with a robotic capability, suggesting that the technology has been oversold.

The study assessed the outcomes of 1,938 men who had minimally invasive prostate surgery from 2003 to 2007 and 6,899 men who had open surgery. The men in the study were 65 or older. The men who underwent minimally invasive surgery, with or without robotic assistance, had shorter hospital stays, fewer blood transfusions, fewer respiratory complications and other surgical complications. However, they had double the rate of genital and urinary-tract complications immediately after surgery, and were more likely to have incontinence and erectile dysfunction 18 months later. There was little difference between the two groups in the need for additional cancer treatment.

Some observers who specialize in robot-assisted procedures noted the study was unable to distinguish between those using modern robot technologies and older minimally invasive techniques. Some experts said the outcomes of experienced surgeons were better than those reported in the study. Others claimed no special advantages for the robotic prostatectomy; instead, they were content to cite evidence that the robotic technique is comparable to the open prostatectomy in terms of continence, potency and tumor control. Another commentator noted that it's not

the tools the doctor uses, but the experience and skill of the surgeon. (Source: The New York Times, October 13, 2009)

Prostate Biopsy Caution. Schwartz and Skinner, Wake Forest University School of Medicine and University of Wisconsin-Madison respectively, have discovered that some elevated prostate-specific antigen (PSA) levels in men may be caused by a hormone normally occurring in the body, and are not necessarily a predictor of the need for a prostate biopsy. Elevated levels of PSA have traditionally been seen as a potential sign of prostate cancer, leading to the widespread use of PSA testing. However, the researchers found that parathyroid hormone, a substance the body produces to regulate calcium in the blood, can elevate prostate-specific antigen (PSA) levels in healthy men who do not have prostate cancer. These "non-cancer" elevations in PSA could cause men to be biopsied unnecessarily, perhaps leading to unnecessary treatment.

The researchers analyzed data from 1,273 men who did not report any current infection or inflammation of the prostate gland, prostate biopsy in the past month, or history of prostate cancer at the time of the survey. After adjusting for age, race and obesity, the researchers found that the higher the level of parathyroid hormone in the blood, the higher the PSA level. In men whose parathyroid level was at the high end of normal, the PSA level was increased by 43 percent – putting many in the range for a urologist to recommend a biopsy. The research is the first to suggest that parathyroid hormone promotes prostate cell growth in men without prostate cancer.

The finding is especially significant for black men. About 20 percent of black men have elevated parathyroid hormone levels, compared with about 10 percent of white men – which means blacks have a greater chance of being recommended for biopsy and perhaps over-treatment.

The study was funded by grants from the National Institutes of Health and the American Cancer Society. (Source: *Wake Forest University School of Medicine*, November 6, 2009)

The “Learning Curve.” Previous research has indicated that a surgeon’s volume of radical prostatectomies is associated with improved patient outcomes and fewer complications. Patients treated by experienced surgeons had a 40 per cent lower risk of cancer recurrence than those treated by inexperienced surgeons. Vickers, et al., Sloan-Kettering Cancer Center, New York, had previously shown that a surgeon needs to perform an average of 250 RPs to provide the best chance of cure. In this study, the researchers undertook to determine how long it would take a typical surgeon to reach that number of procedures. They found that the majority of surgeons treating prostate cancer will not reach that number of procedures in their entire professional careers.

A high-volume surgeon is defined as one who performs 50 RPs or more annually. Only 2 per cent of surgeons nationally meet this standard. Also nationally, only about one in five prostate cancer patients are treated by high-volume surgeons. The study considered RPs performed by open surgery, and laparoscopic and robotic procedures. The “take home” message is that most surgeons have very little experience in dealing with prostate cancer. Patients are likely to have a better chance of cure with fewer complications if they are treated at a specialist cancer center by a surgeon who focuses on treating prostate cancer. (Source: www.PhysOrg.com via the Us TOO “Hot Sheet,” January 2010)

Coffee Consumption. OK, so you’ve tried green tea, soy milk, and pomegranate juice, but what about coffee? A recent study evaluated the effects of coffee consumption on the risk of prostate cancer using the Health Professionals’ Follow-up Study. Information about coffee consumption was collected from nearly 50,000 men every four years between 1986 and 2006. During that time, almost 5,000 of the men were diagnosed with prostate cancer. Overall, there was a weak association between coffee con-

sumption and the risk of prostate cancer. But when it came to advanced disease, the researchers found that men with advanced disease who drank the most coffee were 59 per cent less likely than non-drinkers to develop lethal or advanced prostate cancer. Caffeinated and decaffeinated coffee had the same effect.

Confirming research is required, but in the meantime, coffee certainly tastes better than the pomegranate juice! (Source: [Cancer Consultants.com](http://CancerConsultants.com), December 30, 2009)

PSA Value at 2 Years Post-Treatment Helps Predict Long-Term Survival After Radiation Therapy. In the past, patients with a relapsing cancer after receiving radiation were not identified until several years after treatment and at that point when it might be too late to effectively salvage the recurrence. Researchers at Memorial Sloan-Kettering Cancer Center, New York, sought to determine the significance of a patient’s reaching a certain PSA level at a specific point in time after external beam radiation therapy (EBRT). They found that patients with a PSA value of less than or equal to 1.5 at two years had a 2.4 percent incidence of distant metastases at five years after treatment and a 7.9 percent incidence at 10 years after treatment. Patients with a PSA value higher than 1.5 experienced a significantly higher rate of metastases at five and 10 years after treatment (10 percent and 17.5 percent, respectively). PSA levels in a prostate cancer patient are monitored after a patient’s treatments, and after a successful course of EBRT, the levels should decline gradually over the following 18 to 24 months. A continued rise in PSA can indicate relapsing disease. Earlier detection of recurrence should help reduce the mortality associated with the cancer. (Source: ScienceDaily.com, December 2, 2009)

Cooling Hot Flashes. Androgen suppression is considered the gold standard treatment for advanced prostate cancer, but about 80 percent of patients undergoing the treatment experience hot flashes. A number of hormonal and non-hormonal drugs are used to treat the hot flashes, but no direct compari-

sons of the drugs had been made in clinical trials.

A new study included 311 prostate cancer patients in France undergoing androgen suppression therapy. To treat their hot flashes, they received either the non-hormonal drug venlafaxine (102 men), or one of two hormonal drugs -- cyproterone acetate (101 men) or medroxyprogesterone acetate (108 men). The patients were assessed at weeks four, eight and 12 and asked to complete a questionnaire about the frequency and severity of their hot flashes for the week before each assessment.

The researchers found that all three drugs reduced the occurrence of hot flashes, but the hormonal drugs cyproterone acetate and medroxyprogesterone acetate were much more effective at reducing them over all time periods. They concluded that medroxyprogesterone should be the standard treatment because cyproterone is already a recognized

treatment in prostate cancer, and its use could interfere with hormone therapy. (Source: Health Day News, December 6, 2009)

The WRAMC Prostate Cancer Support Group's newsletter is posted on the web site of WRAMC's Center for Prostate Disease Research. You can access the current issue and back issues by going to www.cpdr.org/patient/ustoo/newletter.html.

(BRACHYTHERAPY – CONTINUED FROM PAGE 1)

After much consideration and discussion with prostate cancer patients who selected different treatments, I decided to go with brachytherapy. My main reason was that it appeared likely that the side effects would be the fewest, based on discussion with my urologist and, anecdotally, in speaking with those treated with the other options.

There is some debate on whether what I heard about side effects was valid. The urologic surgeon who employs the Da Vinci method was emphatic that the extent of side effects depended more on the surgeon's skill than on which treatment method is chosen. Several of the statistics that I found show that brachytherapy and external beam radiation have similar side effects, e.g., impotence increasing over time; however, this is complicated by the fact that brachytherapy often is combined with external beam treatment, and so many of the statistics on side effects were not resulting solely from the brachytherapy.

AFTERMATH

In any event, my brachytherapy procedure was performed on May 19, 2009. That first day I felt fine, other than urination felt like "peeing razor blades" as I had been warned by the friend who had the procedure. I was told that this was due to irritation caused by the catheter. Starting the second day and increasing over time, I felt a burning sensation upon urination, sometimes quite painful, but mostly a dull throbbing pain. The need for frequent urination was an annoyance, making me leery of social and professional activities because taking a bathroom visit might be awkward. Interestingly, I was able to go through airport security without challenge after one week even though I had been alerted about setting off alarms.

Eight days after surgery, the urologist tested me via ultrasound to make sure that my bladder was sufficiently emptying. It measured

about 65 cc; I was told that one should be concerned only if it was over 100 cc, but I should expect mine to be higher due to the impact of radiation. The radiation oncologist had me tested after one month to make sure there were no "cold spots" in my prostate that hadn't gotten enough radiation. Everything checked out fine. The radioactive seeds were palladium 103, which have a half life of 17 days. Therefore, after 102 days, only about 3% of the palladium would still be irradiating me. Although the immediate side effects don't fade as quickly as the radiation ebbs, I was told that I should feel more normal after about three to four months.

Over the first month, I continued to have considerable pain urinating. My frequency varied but I had to go usually every hour or so. I often felt extreme urgency whenever I stood up (feeling the effects of gravity). I found urinating early in the morning was most difficult when my bladder and I were both still groggy. Often I got up every hour or so, urinated a little, went back to sleep, and repeated, typically from 3 or 4 am until 8 or 9 am (after going to sleep about midnight or 1 am). After 6 weeks, I saw my urologist again for a checkup and had ultrasound to test urinary retention. It measured about 98 cc, but I was told not to worry unless it got worse.

Over the second month, my urinary symptoms hadn't changed much. If anything, the pain and urgency were greater, while the frequency was about the same. Often I would stand there and just a trickle would flow out. I was very glad that I doubled my Flomax dosage just before surgery. **Over the third month**, the pain upon urination has lessened somewhat. I was able to go two + hours without urinating much of the time except right after meals. A sudden urgency, especially within an hour or so after meals, remained a problem. **Over the fourth month**, the pain lessened considerably, as both the oncologist and urologist had predicted. I still have an urgency issue, especially when I stand up after prolonged sitting, but the frequency is returning to pre-treatment state. **At the beginning of the fifth month**, I reduced my Flomax dosage to 20 mg from 40 mg.

NOW WHAT?

On November 11, 2009, I got my first post-treatment PSA score, which was 1.3. I was told that this is in the expected range six months after treatment. I'm among the 80% of patients that experience an initial decline, whereas 20% show some PSA "bounce," a temporary rise that is not unusual. I will have my PSA checked again in six months. It is expected to continue to decline gradually over time. I will have it checked every six months until five years have passed, and then have it checked annually.

A SPECIAL CONSIDERATION

One big issue for me is when I might be able to return to testosterone replacement therapy (TRT) that I discontinued prior to treatment. Although testosterone has long been contraindicated for prostate cancer patients, in recent years this conventional wisdom has been questioned. Discussions with my endocrinologist and urologist offer some optimism that I may eventually resume TRT as long as my PSA continues to decline as expected. Readers interested in this topic might wish to read a recently published paper that analyzes this linkage. The paper is entitled: "**Testosterone and Prostate Cancer: Revisiting Old Paradigms.**" The paper concluded that despite "...a paucity of long-term data, the available literature strongly suggests that TT [testosterone therapy] neither increases the risk of PCa [prostate cancer] diagnosis in normal men nor causes cancer recurrence in men who were successfully treated for PCa. Large prospective studies addressing the long-term effect of TT are needed to either refute or corroborate these hypotheses."

(You can read the study on line at this web site:<http://www.europeanurology.com/>. Search for Volume 56, Issue 1 (July 2009). If you would prefer, you may contact me directly and I will email the article to you. Also, if you are newly diagnosed and contemplating your treatment choices or have any questions about any issues raised in my discussion here, feel free to contact me directly at jrosenberg@comcast.net.) (END)

◆ PROSTATE CANCER, MALE SEXUAL HEALTH, AND INCONTINENCE ◆

By
Myron I. Murdock, MD

(A summary of a presentation to the WRAMC Prostate Cancer Support Group on November 4, 2009)

INTRODUCTION

It is a pleasure being here again. It's been five years since I last spoke at Walter Reed. I enjoyed my service in the Army Medical Corps between 1969 and 1972 and I always find it enjoyable to return to military institutions and be in a military setting.

Tonight we are going to talk about certain problems associated with the treatment of prostate cancer. Of course, the two major problems affecting patients who have been treated for prostate cancer are urinary incontinence and sexual dysfunction. The question is how can we prevent these problems, and if they occur, what can we do to help? There have been many new developments in the treatment of prostate cancer since my presentation here five years ago. Now there is much more we can do for men affected by side effects, and tonight I want to discuss them with you.

URINARY INCONTINENCE

What is urinary incontinence? Well, if you have it, you know what it is! It is the involuntary loss of urine, usually due to some dysfunction of the bladder or the associated sphincters. When they don't function properly, or the coordination between them is lacking, then you lose control of your urine and you wet yourself. It's that simple. It is almost as if the plumbing washers are not working properly and it is drip, drip, drip, drip! It can be very uncomfortable and unpleasant.

There are several kinds of incontinence. Stress incontinence occurs when you cough, sneeze, laugh, jump or run. Any time you increase the abdominal pressure, you affect your ability to control your urine. This is usually

due to some abnormality of the sphincter mechanism. Injury to the sphincter mechanism is common after prostate surgery or radiation therapy, and both the internal sphincter and the external sphincter are vulnerable. With at least one sphincter, you will have some urinary control, but if both of them are injured, you won't have any control at all. Injury to the sphincter(s) is the kind of situation that leads to stress incontinence. Those of you that have it know that when you cough, sneeze, stand up, run, jump, lift weights or perform similar physical activity, you leak and you have to wear a pad to absorb the moisture. That is what we refer to as stress incontinence.

But often stress incontinence is not pure stress incontinence. It is a mixed incontinence that has an urgency component to it. When you leak urine, it causes a reflex and the bladder spontaneously contracts, creating that urge to go. So in many cases the post-therapy incontinence is a combination of stress and urge incontinence. Nowadays we have a whole range of drugs that were not available when I spoke here last. We can help the urge aspect with bladder relaxants like Detrol, Vesicare, Enablex, and Sanctura. These drugs all work differently. Some work on the motor aspect of the bladder, others work on the sensory aspect. In some cases, relieving the urge aspect provides some control for the stress aspect, making it more tolerable. Similarly, controlling the stress aspect can improve the urge aspect. Patients who have incontinence must be fully evaluated, usually by urodynamic techniques and cystoscopy. If patients achieve improvement with medication, this non-invasive method is the way to go. But if a tolerable state is not achieved and multiple pad-use-per-day persists, then a surgical procedure may be required. Again, we have options that were not available five years ago.

(Dr. Murdock then displayed and discussed slides depicting the anatomy of the urinary process.) Here is a diagram showing that the prostate was originally around the neck of the bladder. The proximal part, the area closest to the bladder, is where the internal sphincter is located, and the part furthest away from the bladder is where the external sphincter is located. The internal sphincter is an involuntary muscle. The external sphincter is a voluntary muscle. It is really a very complex mechanism. It is hard to explain why some patients become incontinent and others do not, even when they were operated on by the same surgeon on the same day.

EFFECTS OF PROSTATE CANCER THERAPIES

So why am I incontinent you may ask? Well, surgery and radiation therapy for prostate cancer cause trauma to the areas being treated. The traumatic effect of surgery on the urinary mechanism is immediate, while the effect of radiation is gradual over time. The more permanent urinary incontinence cases are among patients who had a radical prostatectomy, but that is not as bad as it sounds. Perhaps only five percent of them have significant urinary incontinence to the point where after a year, the "bother factor" is very significant. But if you are among them, you want it treated. It is embarrassing, it is uncomfortable, and it can cause psychological problems, anger, and depression. The good news is that most of these men can be helped and their quality of life improved.

Does one have to live with incontinence? No. Can one live a life that is dry? The answer, of course, is yes. You should be able to be made dry. The challenge is to find a physician who has an interest in this condition. Just because somebody is called an urologist doesn't mean that he is interested in dealing in incontinence. You have to find an urologist who has an interest in urinary incontinence and erectile dysfunction and who has experience with prosthetic devices. A complete work-up is required to identify the likely cause. The simple solution should be tried first. I had a patient who had been incontinent for two years after a radical

prostatectomy. A urinalysis revealed he had a severe urinary infection. Antibiotics cleared up the infection and ended his incontinence.

MANAGING INCONTINENCE

The management options are straightforward. You can simply collect the urine in **pads and diapers**, and live with that. Some men can do it, especially when the incontinence is mild. There are primitive prosthetic devices like the **Cunningham clamp** which compresses the penis to close the urethra. It is easy to use, non-surgical, and effective to a point; however, it is bulky and cumbersome. Many men rely on it for social situations where temporary, but absolute control is necessary. **External collection devices** also have advantages and disadvantages. Some men can live with them, but most find the condom-like attachment device problematic. Other external collection devices rely on a catheter. This probably is the least desirable method because of the danger of bacterial infection and the need for periodic replacement of the catheter.

Behavioral modification is commonsensical. I am talking about things like decreasing your fluid intake, or readjusting your fluid intake for different situations in your life, and attempting to void frequently. Some of you no doubt know every bathroom between here and your home, I am sure! You stay away from diuretic agents, foods and chemicals that can irritate your bladder such as caffeine and alcohol; and you tend to avoid activities that can increase your abdominal pressure causing you to leak. **Bio-feedback** techniques involve instrumentation that allows you to identify the appropriate muscles that you are attempting to train such as when you do some form of Kegel exercise. Many men who try Kegel exercises actually do them incorrectly making things worse. Bio-feedback equipment permits you to visualize the effect of the exercises. Then there is an **injectible agent** such as collagen that bulks up the urethra and adds more resistance. It is said that about 17 percent of patients after radical prostatectomy are successful with this procedure. The problem is that it is temporary, lasting about 6 to 12 months, requiring repeated injections. I would only recommend it

to “fine tune” patients who have other procedures and still have a little leakage.

WHAT REALLY WORKS?

Now I want to turn to the surgical options for male incontinence. There are three: The InVance and the AdVance male slings and the artificial urinary sphincter. How do we decide what is appropriate for a particular patient? We undertake a detailed evaluation that I will not discuss here. Instead, let’s use a “rule of thumb” approach based on how many pads-per-day the patient is using. One to three pads a day is considered mild incontinence; three to five pads per day is moderate incontinence; more than five per day is severe incontinence. For mild incontinence we would consider using one of the male sling procedures; for moderate incontinence, a single cuff artificial urinary sphincter device is appropriate; for severe incontinence we would consider a double cuff artificial sphincter device. As an aside, we recently had a patient who was a 10 pads-a-day man who was also impotent after radical prostatectomy. We simultaneously emplaced an artificial urinary sphincter and an inflatable penile prosthesis to address both problems.

MALE SLING PROCEDURE

Let’s talk now about the male sling procedure for men with incontinence associated with radical prostatectomy. There are basically two kinds of sling procedures for male urinary incontinence. The InVance is for mild to moderate incontinence. It is minimally invasive, and it takes less than 45 minutes to emplace on an outpatient basis. It is usually effective for between 70 to 90 percent of the patients, and their incontinence is immediately restored after the operation. An incision is made in the perineum allowing the placement of a “sling” made of synthetic mesh which exerts pressure on the urethra. The device is completely hidden; there is nothing mechanical about it; it is a very simple device that will last for a long time. It is very effective from “moment one.” In many cases a catheter is not required and the patient can simply walk out and be dry.

The AdVance is a newer type of sling that is

based on a modification of the sling procedure used to treat female incontinence. Like the InVance, it can be done under spinal or general anesthesia; the procedure is minimally invasive; there is minimal dissection; and the sling works passively. The idea is to free the prosthetic urethra in order to place the sling around it, raising it into the abdominal cavity, thereby increasing pressure when you cough, sneeze, laugh, jump, run, etc.

ARTIFICIAL URINARY SPHINCTER (AUS)

Despite the virtues of the sling procedures, the gold standard for treating incontinence is still the artificial urinary sphincter (AUS) which has been around since 1972. More than 100,000 of these devices have been implanted since then. It is especially effective for men with moderate to severe incontinence, and for men who have failed to benefit from a sling procedure. If you queried the patients who subsequently encountered problems with their AUS, most of them would opt to replace it, and have it done ASAP! And most of them would recommend it to friends.

The AUS is a hydraulic system with three components, a urethral cuff, a pump, and a reservoir implanted entirely within the body. The surgeon makes an incision near the scrotum, performs dissection of the urethra, and places the cuff around it, creating an artificial valve, so to speak. The pump is placed in the scrotum and the reservoir is placed near the bladder. The components are connected by tubing to effect the transfer of a sterile fluid such as saline solution. Depending on the patient’s level of incontinence, the surgeon may decide to employ two cuffs to achieve a better result. The fluid within the cuff causes occlusion of the urethra and provides urinary continence. The act of pumping empties the cuff and allows the patient to void. After about three minutes, the fluid from the reservoir flows back to the cuff, stopping urine flow. It really works!

Some men are apprehensive about AUS failure, infection, and urethral erosion. Of course, there is risk; it’s a mechanical device, after all. A key to success is an experienced surgeon

who performs the procedure frequently. Furthermore, the coating of the components with an antibiotic compound reduces risk of infection and erosion. If problems occur, they are usually easily solved, and replacement, if necessary, is not difficult. When an AUS fails, I can tell you from considerable experience that the patient wants it replaced quickly.

In summary, if you are not dry, you should be seeking an urologist who is experienced in dealing with incontinence, and who can offer solutions across the spectrum of therapy, from the non-invasive to the surgical. Let's face it, nobody is going to die from wet pants, but it certainly may affect your quality of life, and if it does, you should be getting help.

ERECTILE DYSFUNCTION

At the outset, let me mention a relatively new concept for penile rehabilitation. It recognizes that it is more important to preserve penile health at the time of your primary therapy than it is to treat it afterwards. Penile function is essentially blood flow and the drugs now available to us basically increase blood flow. So you should be thinking about a penile rehabilitation program even before you have your definitive procedure for prostate cancer. The basic idea is to increase the blood flow to the penis as much as possible. Most of you know that men experience several nocturnal erections regularly in the course of sleeping, even after primary therapy. This normal process serves to revitalize the penis. We know that the primary therapies for prostate cancer are going to inflict some damage to the penis. The more oxygen provided to the penis, the less fibrosis and scarring will occur. So you must do everything possible to get maximal blood flow to the penis to rehabilitate it. The concept of "use it or lose it" is a truism.

Here is an example of a penile rehabilitation plan for a man about to have a primary therapy. Cialis is a relatively long-acting PD5 inhibitor. A standard 20 mg dose of Cialis is taken twice a week until a week or two before surgery and then immediately after surgery to maximize blood flow to the penis, particularly at night when you go into REM sleep. Then as

you regain urinary control over the next six to eight weeks, we would try to get you to have a real erection. A way to do this is to add one of the shorter-acting PD5 drugs like Levitra or Viagra which reach maximum serum concentration within an hour. It serves as a booster, so to speak, to cause an erection. If after a couple of months without obtaining an erection, we may resort to Muse, an intraurethral pellet of prostaglandin E1 that is inserted into the urethra. About 50% of the patients who use it can get a reasonably good erection. Alternatively, you can inject prostaglandin E1 directly into the penis using Caverject or Edex as the delivery device. Over 90 percent of men will achieve an erection in that manner.

In short, I encourage those of you who have had or are about to have surgery or radiation therapy to seriously consider a regular rehabilitative program. Men who are unable to achieve erections are at risk for penile fibrosis, loss of elasticity, and even shrinkage after radical prostatectomy. A regimen should include a long-duration PD5 supplemented by a shorter-duration PD5, and as required, prostaglandin via Muse or self-injection. Incidentally, I want to mention that the PD5 drugs are very safe. I have participated in clinical trials for all three and I can tell you that the drugs are unbelievably safe. They are probably one of the safest clusters of drugs available. They can be used in combination without concern.

NOTHING'S WORKING, NOW WHAT?

Obviously, we want to rely on the least invasive treatment to combat ED. But the truth is that many men will not respond to penile rehabilitation techniques and the associated PD5 drugs. Intracavernosal injection therapy (e.g., Caverject or Edex) is a second alternative. About three percent of all men who use prostaglandin E1 will have significant pain in using it, often causing them to stop using it.

If the non-invasive methods don't work or are painful, then men who wish to continue their sexual function need to consider the penile prosthesis. About 49,000 prosthetic devices are implanted annually in the United States, a very small number considering the number of

men being diagnosed with prostate cancer. This may be due to the fact that there is much misinformation about prosthetic devices.

For the surgeons who do prosthetic surgery on a regular basis, the devices are easily implanted and work very well with few complications. Furthermore, over the years there have been many redesigns in the devices that have reduced the complications. For instance, the use of antibiotic coating has dramatically decreased the infection rate to probably less than one percent of the patients. Over time there have been regular major mechanical improvements.

The procedure takes about an hour in the hands of an experienced surgeon. It is usually done through a small incision at the base of the penis and scrotum and through that incision the spongy rods of the penis are opened; a "tunnel" is made in them without injuring the tissue. The penis is measured and an appropriate-size inflatable cylinder is placed into each of these spongy rods, and then attached to a pump mechanism that is placed in the scrotum. Next, the reservoir that holds saline is implanted next to the bladder through that same incision which is probably 2 ½ to 3 inches at most in length. Then the device is connected.

I think it is fair to say that overall the patient can reasonably expect a 10-12-year, malfunction-free performance. Mechanical failure under 12 years is probably in the realm of 6 percent, and in the hands of an experienced surgeon it is probably lower. It is a matter of going through a one-hour operation, about five to 12 days of local discomfort, some swelling and a little black and blue effect. But by four weeks most patients are comfortable and able to function sexually. If your ED hasn't responded to the available drugs, singly or in combination, or intracavernosal self-injection, you should seriously think about a penile prosthesis.

There are semi-rigid malleable devices which basically are like internal struts. I don't do those kinds of devices because I find the inflatable device to be superior. There also are self-contained devices in which the reservoir and pump mechanism are combined. The

surgical technique is similar to that of the three-piece inflatable device, but I don't think that the cosmetic and functional results are as good. My opinion is that the three-piece device is better. There are several different varieties and there are technical reasons why we would use one variety over the other. But in general, the best result from a functional point of view is with the three piece penile prosthesis. A separate reservoir, a separate pump and separate cylinders will give you a good device which will last for a significant period of time.

QUESTIONS AND ANSWERS

Question: I completed 45 days of radiation two months ago without experiencing incontinence. What can I expect in the future?

Answer: Radiation therapy poses ongoing, long-term trauma to both the prostate and the urethra, as well as to the bladder and the rectum. Fortunately, most men selecting radiation therapy don't have significant problems; they have transient problems. For example, about 70 percent of the patients who had radiation have little or no side effects immediately after therapy. But within two to five years, they may have urinary control problems. The same is true for erectile dysfunction. These effects are usually minor and correctable with medication. On rare occasions these side effects are very significant. This is a major consideration because radiation makes it more difficult to treat with a sling device or artificial sphincter. The risk of infection and erosion is much higher in patients who have had radiation therapy. But in general, you can feel reasonably confident that you are probably not going to have significant problems.

Question: Does using the cyberknife technology minimize the incontinence problem?

Answer: That is a good question. Nobody really knows. Cyberknife is basically radiation therapy. It was originally developed for treating brain tumors and has been modified for treating prostate cancer and other diseases. There are no reliable statistics on cyberknife because it is considered to be an experimental

procedure for prostate cancer. It will likely take ten years before cyberknife can be reliably compared in effectiveness with other kinds of radiation therapy. Cyberknife uses a very narrow beam of high-intensity radiation to irradiate the prostate so there is very little scatter. This should result in very little involvement of the rectum and the bladder. But the jury is still out, and likely will be for some time.

Question: An acquaintance mentioned the use of laser therapy for prostate cancer. What can you tell me about laser therapy?

Answer: Laser therapy of the prostate is really not used for treating prostate cancer, per se. Laser therapy is used for benign prostatic hyperplasia (BPH), the benign enlargement of the prostate. If the prostate enlarges to the extent that it impinges on the urethra, then urine flow is obstructed. The classic symptoms of BPH are hesitancy of urination, weak stream, difficulty in urination, straining to void, frequency, urgency, and waking at night to urinate. Laser therapy employs a laser wand to direct high intensity light waves to paint the surface of the prostate, vaporizing the tissue like taking a hot knife to butter. This relieves the pressure on the urethra to restore normal flow.

If a man with prostate cancer also has an enlarged prostate obstructing urine flow, a radical prostatectomy to treat the disease also eliminates the obstruction by removing the prostate. In the case of radiation therapy or cryoblation of the prostate, the prostate remains intact and the enlarged prostate continues to impede urine flow. Then laser therapy to remove the obstruction may be appropriate. American Medical Systems has an effective product that employs laser ablation procedures. But the short answer is laser therapy is not used for curing prostate cancer.

Question: Is there a limit to the time at which the body will stop healing itself after radical prostatectomy? I ask that because I had a radical prostatectomy in May. Immediately afterwards I had to wear a diaper at night and used several pads per day. After six months I am dry at night and use a pad and a half dur-

ing per day. What further improvement may I reasonably expect?

Answer: In general, the rule of thumb is one year to fully overcome incontinence. It sounds like you are doing well. Some men are dry from day one, but most men are not; there will be some degree of incontinence. You seem to be going in the right direction and there is a good chance within a year or less you will be significantly, if not totally dry. But after a year or so, you may conclude that this is as good as it is going to get, but you may not be satisfied with it. Consult your urologist to rule out infection and bladder problems, and then ask him what alternatives are available to cope with the problem. If pad usage is one to three pads per day, then you may consider a sling procedure; if leakage is more severe, then the artificial sphincter may be appropriate.

Question: I have two questions about the artificial sphincter. I have read that reducing pad usage to one or two a day was considered "success," and that much depends on the skill of the surgeon performing the implant. Is that still the case? The second question is related to its long term use and the potential atrophy of the tissue underneath the cuff. What is the prognosis for the long term use of the device?

Answer: Regarding "success," it will vary from individual to individual; regarding long-term usage, you can expect ten to twelve years of reliable performance from the artificial sphincter. A definition of "success" largely depends on just how incontinent you were before getting the artificial sphincter. Obviously, if you require seven or eight pads a day and your usage is reduced to a pad-per-day and only during daytime, then that is a "success" in my judgment. In addition, the implant can be "fine-tuned." For example, I have replaced the artificial sphincter in several men. They still had mild stress incontinence and I did an AdVance Sling procedure on them that has made the difference between one pad to no pad. Remember, the goal is total continence, and it is achievable in many cases.

As far as the wear and tear, remember that the artificial sphincter is a mechanical device sub-

ject to wear and tear; it can malfunction over time. Nevertheless, the large majority of men are satisfied and can reasonably expect it to perform for ten plus years without problem. And yes, there can be change in the tissue that is being compressed by the cuff, and there are probably some changes in the pressure exerted by the reservoir over time that can make a difference. If problems do occur, it may be necessary to modify the sphincter; put in another cuff or a double cuff; change the entire device; or consider the AdVance Sling to supplement the artificial sphincter.

Each case is different; each patient is different. Patients' expectations change with time. When you are younger, you tend to be more of a perfectionist and expect more. As you age you realize that things are not going to be perfect, they will just be good, maybe better, but not the best. I realized that when I reached 66 years of age!

Question: What is the role of antidepressants in affecting incontinence?

Answer: There are certain antidepressant drugs that have an effect on incontinence by tightening the bladder neck and relaxing the bladder. We are using these drugs much less now due to their potential for cardiac toxicity and the concern that some were being converted to illegal drugs. The commonly prescribed antidepressants such as Zoloft and Prozac are still occasionally used for incontinence, but they are really not that effective.

Question: I understand that men who select surgery should expect to wait up to a year for any surgery-related incontinence to improve. What should men who selected radiation expect?

Answer: With surgery, some degree of incontinence is immediate, but it improves over time. With radiation therapy, the incontinence as well as ED develops over time. It may take two to five years before they develop. Fortunately, most men eventually do very well. If you consider men who selected surgery, most will regain continence and be able to function sexually. Unfortunately, there is no 100% guarantee, so one must weigh being cured

from the disease versus the potential, significant side effects associated with the selected therapy. It is hard to explain why some men experience greater side effects than others. The surgeon could operate on two patients on the same day in the same manner and one emerges incontinent and the other is continent. Much of it is attributable to the patient's pre-therapy condition.

Question: What is the effect of incontinence on intercourse?

Answer: Sexual performance and incontinence are independent issues. So, in that sense there should be no effect on intercourse. On the other hand, men with incontinence may experience increased leakage during sexual activity. As you can understand, the unaesthetic effect could discourage sexual activity.

Question: I had brachytherapy six months ago. Prior to that I had been on testosterone replacement therapy (TRT) because my testosterone level was low. Since my brachytherapy I have been unable to achieve an erection. I have tried Viagra and Cialis without success. My doctor said not to worry, that a year or so after brachytherapy potency should return, especially when I resume TRT. Is this consistent with your understanding of my situation, given what you said about "use it or lose it?"

Answer: First of all the question arises, should you even be taking TRT? This is an important question. As you know, prostate cancer is stimulated by testosterone and the current standard of care would say you should not have TRT because your prostate is still intact and the brachytherapy treatment doesn't guarantee that every single cancerous cell has been irradiated. By taking TRT, you may stimulate any residual prostate cancer. If you had had a radical prostatectomy and the disease was confined to the prostatic capsule, then after at least ten years without recurrence, TRT might be suitable for men who are hypogonadal.

In short, you are running a major risk of stimulating the cancer by resuming TRT after radiation therapy, and I would not recommend it. Remember, the first objective of prostate can-

cer therapy is to cure cancer; the secondary objective is to deal with any side effects that may occur. Having said that, testosterone deficiency affects more than ED; for example, body fat distribution, muscle mass, fatigue, bone density, and even some cognitive functions. Your doctor should be watching you for these potential problem areas.

Question: (Follow-up question) My endocrinologist and urologist are in agreement, depending on how my PSA responded to brachytherapy, that they would be willing for me to go on a moderate level of androgen about a year or year-and-a-half after my treatment. I gather you would disagree with that.

Answer: This subject arises often at professional andrology conferences. I don't know an urologist who would agree to that. You may wish to contact a Dr. A. Morgantaler at the Dana Farber Clinic in Boston who is an authority on this subject.

Question: I had radiation therapy and even though I don't have ED, intercourse is not what it used to be. In fact, it is even uncomfortable in some respects.

Answer: The main job of the prostate is to produce the secretions that make up more than ninety-five percent of the ejaculate. If that tissue is injured during therapy, then you may experience some pain during intercourse when the pelvic floor contracts, causing some discomfort. Not everybody who chose radiation therapy has discomfort, and not everybody who had radiation therapy has ED. It varies from patient to patient. All the primary procedures to cure prostate cancer are destructive to the extent that they may cause significant side effects. It is a matter of balancing the procedure and the potential cure against subsequent quality of life. In your case, intercourse after therapy is going to be different. It may be good, but it will be different.

Question: What percentage of men will have that kind of problem, i.e., excessive scar tissue and ejaculatory pain?

Answer: It's not huge, especially after radical prostatectomy compared to radiation. We are talking about a small percentage of patients. Even radiation, whose destructive effect increases over time, doesn't cause very serious problems for most patients. On the other hand, after radiation therapy, what you can do for them is much more limited than after surgery. For example, if you had surgery and you have 10-pad-per-day incontinence a year later, you can always opt for an artificial sphincter. Placing an artificial sphincter in someone who was irradiated involves more risk. The procedure has to be done differently in order to avoid the radiated field. It is simply much harder to deal with failed therapy post-radiation. As few instances as there may be, when there is recurrence after radiation, it is more difficult to deal with.

Question: I have been told that orgasm essentially takes place in the mind, rather than elsewhere. What can you suggest to help restore both the quality and duration of orgasm to what they were preoperatively?

Answer: Well, I can't. Yes, orgasm is largely between the ears rather than between the legs. Post-operative sex simply is going to be different. Patients who have penile prostheses will tell you that sex is different, even though it may be very good. There are certain advantages to having a penile prosthesis. You can keep your erection for as long as you want. You don't have to worry about premature ejaculation; you can have repeated orgasms; and maintain an erection to suit your partner. Yet patients report that it is different, however fulfilling, and there is no ejaculate.

Remember, surgery and radiations are in a real sense destructive processes. You are left with some significant negatives that you just have to live with and try to maximize the situation as best you can.

Thank you for your interest and the many questions. It was a pleasure to be with you again this evening.

(THESE PERSONS ARE WILLING TO SHARE THEIR EXPERIENCES WITH YOU. FEEL FREE TO CALL THEM.)

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JAMES L. GULLEY, MD, Ph.D.

Director, Clinical Trials Group
National Cancer Institute

◆ TOPIC ◆

**“Immunotherapy for Prostate Cancer:
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