

Summer 2013

VUA Newsletter

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Greetings and New Developments at VUA

Welcome back to the next VUA newsletter! We are pleased to help you catch up with many exciting developments in the field of urology.

Looming over all of us is the 2014 implementation of the Affordable Health Care Act which will open up the health care system to a novel 30 million patients. VUA has been preparing by improving our IT infrastructure to help patients connect to us electronically, utilizing EMR technology such as the patient portal. If you have not obtained your patient ID and PIN, please do not hesitate to contact us. We have also perfunctorily started to engage social media. Find us on Facebook and if you do not mind, give us a "Like" while your there, and follow all the news in the practice of adult and pediatric urology.

There are many new developments on the treatment of prostate cancer despite the USPSTF recommendations to

not get a screening PSA. They expect urologists to be oblivious while 30,000 men die each year in the US from prostate cancer. There was NOT one urologist on that panel making those recommendations.

Treating prostate cancer when it becomes metastatic becomes very costly. However, there are many agents that have been shown to prolong the median survival after men develop the Castrate-Resistant form. One of these novel agents is a radioactive particle that preferentially goes to the skeleton killing those cancer cells in the bones. This improves survival and blunts the bone pain from bone metastases.

However, nothing is as painful as treating kidney stones that have passed into the ureter. These decisions for treatment are made mostly with patient participation and a thorough informed consent process. Urinary stones have become

ubiquitous in the heat of Arizona.

Dr. Blick has brought to us a hot and dissertation-like review on the management of erectile dysfunction. He continues to pioneer the latest advances in erectile restoration using the latest techniques and technology. He is a nationally recognized, high-volume penile implant surgeon. Dr. Donovan offers tips for those families who elect not to have their child circumcised. The American Academy of Pediatrics has deemed circumcision health benefits outweigh the risks, yet Medicaid does not cover the procedure.

Given all the legal malpractice advertisements on synthetic mesh slings, they continue to be very useful in resolving stress incontinence. Dr. McCauley shines a light on the other causes of incontinence that can be treated in contrast to pelvic sling surgery.



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What is the Best Treatment for Ureteral Stones



Dr. Torre Rhoades, M.D.
Fellowship-Trained in Urologic
Oncology

In the Summer months in Arizona, there are many patients who develop kidney stones

In the year 2000, one thousand one hundred and sixteen people were affected by kidney stones per one hundred thousand people. The most common type of kidney stone is calcium oxalate and the most common cause of kidney stones is dehydration. There are numerous ways to treat kidney and or ureteral stones however this depends on the size and location of the stone.

The most common forms of treatment for ureteral stones are medical expulsion therapy, extracorporeal shock wave lithotripsy (ESWL), and ureteroscopy with laser lithotripsy. All forms of treatment have their pros and cons. The American Urologic Association formed a panel of experts to evaluate all of the current literature that exists to determine the best treatment option. Of all the articles they reviewed, they found two hundred and twenty four articles that had clinical relevance and scientific

data that would support their recommendations.

The location of the stone and size of the stone have the greatest impact on whether a treatment option is going to be successful. Studies that were reviewed evaluated stones in the proximal ureter, mid ureter, and the distal ureter. Stone size was based on greater than ten millimeters or less than ten millimeters. Success for distal stones treated by ESWL ranged from 74% to 86% in comparison to ureteroscopy showed 93%-97% success rate. When stones were found higher in the ureter the success rates became closer in the mid ureter with both treatment options. When stones were in the proximal ureter the success rate was 68-90% with ESWL compared to 79-80% success with ureteroscopy.

Both ureteroscopy and ESWL are both valid treatment options for ureteral stones. Most people that undergo treatment

for ureteral stones prefer to undergo ESWL as this is a less invasive treatment that has very good cure rates. When this is unsuccessful then it is reasonable to attempt a repeat ESWL or undergo ureteroscopy with stone extraction. People that elect to undergo ureteroscopy with stone extraction are typically happy with the end result however tend to have more discomfort when a stent is place post operatively on a temporary basis. The end decision is ultimately the patient's. The most important aspect when making a treatment decision is that the patient is well informed and that they understand the risks versus the benefits in the treatment decision of their choice.

What's that Smell? Bladder Cancer?



Dr. Vi Hna, M.D.



Dating back to antiquity, the practice of looking at urinae to diagnose a patient with an ailment was done by the so called "uroscopy wheel." The patient was asked to urinate into a flask or "matula" and the urine

was illuminated by light. The color of the urine would signify that the patient had a certain ailment.

Come to the present, with the advent of real time DNA PCR, we still have not had a test to accurately diagnose bladder cancer without confirming it with cystoscopy, placing a camera into the bladder. This procedure causes discomfort, and risks post procedure UTIs, but is inherently necessary as the recurrence rates of bladder cancer are very high. There have been several tests that is available now such as urine

cytology, genetic markers, that can detect the presence of bladder tumors, but either have high false negative rates (cytology), or false positive rates (DNA markers). British researchers have recently developed an odor reader that evaluates gas emitted by urine that signify the presence of cancer. The preliminary accuracy is high, but now is undergoing further research and qualification to be credited as a useful test in bladder cancer.

Pediatric Corner, To Circ or Not To Circ—What a Parent Needs to Know



The practice of circumcision has been and continues to be a cultural ritual for many ethnic groups in the World.

The health benefits of circumcision include easier hygiene, decreased risk of urinary tract infections, decreased risk in development of penile cancer as an adult, and more recent studies show decreased risks in STD transmission.

At one time, the majority of males in the United States had been circumcised. However, it has been decreasing over time. Today it is near 50% and in the Southwest it is even less common. A Major factor in this has been that Medicaid does not cover newborn circumcisions. This discrepancy exists, despite a study from John Hopkins University showing an extra \$2 billion dollars of added healthcare cost over a lifetime due to the non-circumcised population.

As a result, the non-circumcised patient has become much more common in our community. It is important to review some of the basic information on the care and management of the uncircumcised penis.

- Proper care of the uncircumcised penis is essential to avoid problems
- At birth, the prepuce (foreskin) is only retractable in 4% of boys.
- In almost 50% of newborn males, the skin

cannot be retracted enough to even visualize the external meatus.

- By 6 months of age, the prepuce can be retracted in only 20% of boys.
- By 3 years of age, 10% of boys still have unretractable foreskin.
- Foreskin is completely retractable in almost all boys 17 years of age.
- Forcible retraction of prepuce: This maneuver usually results in pain and bleeding and occasionally in paraphimosis.

- Chronic inflammation of the foreskin may result in a secondary phimosis caused by scarring

Care of the penis

- It is easy. Start early and teach child and other family members what is required for consistent and routine care.
- Simple, daily genital hygiene is a MUST.
- Gently, NOT forcefully, “exercise” the prepuce daily with bathing and diaper changes. This helps slowly loosen the skin.
- Apply antibiotic ointment (Bacitracin, Neosporin) 2-3 times daily to the prepucial skin when irritated.
- When potty trained, teach child to gently retract prepuce to pee. This prevents “pooling” of irritating urine under the prepuce.



*Dr. Ben O. Donovan, MD
Fellowship-trained Pediatric
Urologist*

Medicaid does not cover newborn circumcisions

Novel Alpharadin in the Treatment of Prostate Cancer



Dr. Vi Hua, M.D.

Xofigo® (Alpharadin) is an alpha emitting Radium-223 isotope that is absorbed into bone. It then kills tumor cells safely prolonging overall survival and decreasing risk of skeletal events.

Despite the recommendations from the USPSTF regarding PSA screening, about 30,000 men die of prostate cancer every year. In the years leading to death, many of these men become symptomatic with bone metastases, when the cancer spreads to the axial skeleton causing pain, or worse-paralysis from spinal cord compression.

Initially, urologists have used castration, or hormone therapy in reducing the testosterone levels. The cancer then becomes resistant and grows despite a low testosterone environment. In my last article, these cancers can be controlled further by the use of medications like Zytiga and Xtandi which reduces adrenal androgens (testosterone derivative) as well as testosterone production inside the cancer cells (the autocrine effect). These new agents are now prolonging lives and are given orally.

For patients in pain, we have been able to use Image Guided Radiosurgery with great success in reducing the bulk of the bone metastases and relieving the pain. Radiosurgery can also aid in preventing pathological fractures, when the tumor causes weakening of the bone resulting in painful fractures. These can be debilitating as the healing process is further impaired by the tumor.

We also have had in our armamentarium Xgeva®, which is a monthly injection to stop the tumor from inducing the cells that break down the bone (osteoclasts).

There is now a new agent that had been in fast-track development in treating bone metastases. This medication is the first alpha-particle agent approved by the FDA and marketed by



Bayer as Xofigo® (alpharadin or Radium-223).

Radioactive particles that decay give off three types of radiation- alpha, beta and gamma. Gamma rays, or popular as X-rays, can penetrate deeply but is not as strong as alpha particles (protons). These are very heavy ions that cause significant cell damage and are easily shielded as they cannot penetrate very far (<100 micrometers). Radium is absorbed by bone cells taking it next to the tumor. The half-life is about 11.4 days, and the drug dissipates most of its radiation effect in about 44-55 days, and thus becomes inert. The medication is given as an injectible on a monthly basis. Side effects include nausea, vomiting, diarrhea, and swelling of the lower extremities.

In a randomized, double-blind, placebo-controlled study published just recently in the New England Journal of Medicine (<http://www.nejm.org/doi/full/10.1056/NEJMoa1213755>), Alpharadin improved median overall survival from 11.3 months to 14.9 months. It reduced the risk of death by 30%. As a secondary

endpoint, it also prolonged the time to the first skeletal event (defined as bone pain needing radiosurgery, fractures, spinal cord compression, etc) from 9.8 months to 15.6 months. It was also safe, causing grade 3 neutropenia or bone marrow suppression resulting in fever in <1%. In a quality of life survey, it improved patients quality of life (QOL) on an accredited survey.

The disadvantage is going to be the medication cost, and contributes to the average of about \$40,000 PER year in treating a prostate cancer patient with metastatic disease. In comparison, it costs about \$20,000 to \$40,000 upfront in treating a patient with localized prostate cancer that is found early enough before metastasis. Despite the USPSTF recommendations, the American Urological Association recommends PSA level for screening men age 55-70 years old.

As such, VUA continues to expand our armamentarium in a team with our medical and radiation oncologists at Arizona Center for Cancer Care, offering the cutting edge therapies to our patients.

2014 Affordable Health Care Act (Obamacare)—Will There Be A Shortage Of Urologists In The Future?



Dr. Lynn W. Blunt, M.D.

The Affordable Health Care Act (Obamacare) will add 30 million new patients to the health care system in 2014

Most of us take for granted the ability to make an appointment to see a surgical subspecialist in a timely fashion. Due to various issues this may not be the case in the coming years. The most obvious factors will be the growing population of people 65 and older in The United States. Older patients statistically require as much as three fold the rate of surgical services when compared to younger age groups. In addition, with The Affordable Health Care Act starting in 2014, 30 million new patients will enter the health care system.

Within the specialty of Urology there will be a significant short fall of the 16,000 urologists that are projected to be needed by 2020 according to The Department of Health and Human Services. Currently there are approximately 9,500 practicing urologists in the U.S.

Without significant changes this number is estimated to be only 7,500 by 2020. This decrease in the number of urologists is in part due to the average age of urologist's currently at 52.5 years old with 44% over the age of 55. In 2009 there was 3.18 urologists per 100,000 population in the United States, this represents a 30 year low. Besides an aging workforce, the specialty has been affected by cuts in funding for graduate medical education to train additional urologists. Currently there are only 170 funded urology training positions in the country and 278 total urology training positions. This leaves 108 positions unfunded and the addition of more training positions economically very difficult.

Addressing this predicted shortfall of urologist will likely require multiple strategies. The use of physician extenders,

such as Physician Assistants and Nurse Practitioners, has already become very important in the field of urology. Utilizing these resources will be even more commonplace in the future and any patient expectations of always seeing the physician will likely need to change. In addition, there will likely be more pressure on Primary Care providers to practice more urology-related care prior to referral to a specialist. Finally, We will clearly need to train more urologists in The United States. This will require additional government funding for training positions. The length and type of training may also have to be possibly modified and shortened within the specialty of Urology. Hopefully the Federal Government and the leaders of the specialty of Urology will be pro-active in addressing these predicted issues.

Optimizing Postoperative Sexual Function After Radical Prostatectomy



Despite the limitations of PSA and the emergence of Active Surveillance for low grade prostate cancer, Radical Prostatectomy (RP), in any form, is the most frequently performed procedure for patients with localized prostate cancer and a life expectancy of greater than 10 years. Data show that erectile function recovery after RP is the principal determinant of postoperative quality of life, and its impact is often underestimated. ED depends on several preoperative, intraoperative, and postoperative factors that have to be considered adequately in each case for consequent risk stratification and counseling. Although robotic surgery has decreased postoperative hospital stay and has shown comparable oncological outcomes compared with open surgery (for experienced surgeons), the risk of incontinence and erectile dysfunction (ED) has not been definitively proven to improve when compared with open surgery. Research studies

have shown that about 25-90% of men undergoing RP experience postoperative ED. Furthermore, it is well known that ED can occur after RP even when maximal nerve sparing techniques have been performed. **As a result, the aim of this article is to give you a picture of recent knowledge, novel techniques and therapeutic approaches in order to reach the best combination of treatments to reduce the rate of ED after RP.**

In the past, ED after a nerve sparing radical prostatectomy (NSRP) was thought to be due to a reversible injury of the cavernous nerves (which are attached to the prostate on both sides, and they need to be released in order to be preserved). This reversible injury is known as neuroapraxia, and it can last as long as several years. However, recent research has shown the classification system for the etiology of post-RP ED to be more complex. Today, we recognize 3

main factors contributing to post-RP ED:

Venogenic ED: This refers to venous leakage during an erection. The lack of erections leads to a lack of oxygen in the penis that causes fibrosis (scarring) within the penis that decreases the compressive forces on the small veins in the penis that must collapse in order to maintain an erection. It appears that the prognosis for the return of functional erections is the worst when venous leakage is present.

Arteriogenic ED: This refers to the injury of arteries that are responsible for erectile function. More specifically, this is due to the excision of accessory (extra) and aberrant (irregular) pudendal arteries that may originate from the external iliac, internal iliac, or obturator arteries. These vessels are not always present; however, their preservation has been shown to favorably influence the recovery of sexual function and the interval to recovery after RP.

Neural ED: This is due to a cavernous nerve traction (pulling or tension on the nerve), dissection (the actual surgical release of the nerve from the prostate), and transection (cutting or injuring the nerve). Neurapraxia (as mentioned above) can occur from even minor neural trauma. Importantly, Neural ED can only recover if at least one of the cavernosal nerves is spared.

In order to reduce the rate of ED after RP, Briganti and Montorsi introduced the con-

cept of penile rehabilitation (PR) or the use of any drug or device at or after RP to maximize erectile function recovery. The concept of PR is based on the research findings that the loss of daily and nocturnal erections after RP causes poor oxygen levels within the penis, leading to veno-occlusive dysfunction (the inability of the veins to hold blood in the penis during an erection) and the death of the smooth muscle lining the spaces in the penis that fill with blood during an erection. The theory is simple: in order to break the vicious cycle above, early interventions to promote blood flow and erections are recommended.

Once the diagnosis of ED post RP is reached by patient history, the use of sexual function questionnaires such as the IIEF, and/or more elaborate testing such as penile Doppler Ultrasonography, several treat-



Dr. Blick is a Nationally Recognized ED Specialist who specializes in prosthetic urology, performing @40-50 implants per year.

ment options are available to patients. They range from medical (Oral pills--Viagra Levitra Cialis), to more invasive self administered therapies (Injections, Intraurethral Suppositories and Vacuum Erection Devices), to minimally invasive surgical therapy (Penile Implants).

Phosphodiesterase Type 5 Inhibitors (PDE5-I).

They refer to the popular drugs, Viagra, Levitra, and Cialis. This is a class of drugs that act principally on an enzyme called PDE-5, which is present within the smooth muscle that lines the spongy tissue within the shaft of the penis. Because these drugs potentiate the release nitric oxide (which creates smooth muscle relaxation which is necessary for an erection) in the smooth muscle cells above (which requires nerve stimulation), PDE5-I's can only work in patients that have received a nerve sparing RP (NSRP) Viagra is the drug that has been studied most extensively in post-NSRP patients since its introduction in 1998. Response rates to Viagra after NSRP range from 10% to 76%; the rates after non-nerve sparing RP vary from 0% to 15%.

In a randomized, double blind, placebo controlled, fixed dose study of 76 men who underwent NSRP, Padma-Nathan and colleagues (2008) gave placebo, 50mg or 100mg of Viagra nightly. They reported that 27% of the men on Viagra regained potency compared with only 4% on placebo Their results also showed that an earlier intervention enhanced the recovery of erec-

tions. There was no difference in the rates of potency recovery between the 2 doses of Viagra. According to Meuleman and Mulders, the efficacy of Viagra increased with time and the best results were obtained 12-24 months after surgery. Montorsi et al. (2008) conducted a double blind, placebo controlled study in order to assess the efficacy of on-demand versus nightly doses of Levitra on 628 men who underwent bilateral NSRP with normal preoperative erectile function. Erectile function and sexual intercourse completion rates improved significantly in both treatment arms compared with placebo. These data showed that the use of on-demand Levitra is of greater benefit than nightly treatment in patients following NSRP. In general, their results support the on-demand use of PDE5-I's following NSRP over a daily dosing regimen. Importantly, Lee and colleagues followed 77 patients who underwent NSRP (robotics) who received either Viagra or Cialis 3 time per week. They found that 72% of the men had discontinued the PDE5-I's by 6 months due to elevated costs. This is clearly a limitation for patient success with oral PDE5-I's.

Intracorporeal Injection Therapy.

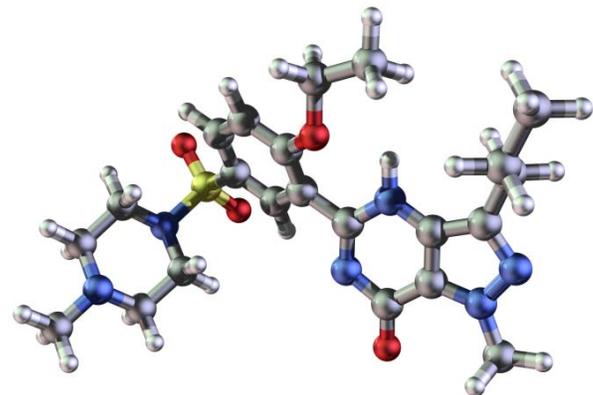
Intracorporeal injections (ICIs) with alprostadil, a synthetic prostaglandin E1 derivative, either alone, or in combination with papaverine or phentolamine (bimix and trimix, respectively) are effective treatments for ED. According to Claro and colleagues, it was shown that patients who failed oral or intraurethral treatments had

good results with ICIs. Success, defined by the ability to engage in sexual intercourse with a hard erection, was achieved in 94.6% of the patients. With respect to the role of ICI's for penile rehabilitation, a study by Nandipati assessed the effectiveness of an early combination of ICI alprostadil (PGE-1) or Trimix with Viagra started at the time of hospital discharge following RP. Viagra was taken daily, and the ICIs were given 2-3x per week until natural erections occurred. The study demonstrated an earlier return to sexual intercourse and spontaneous erections with improved patient satisfaction. The combination of the ICIs with Viagra also allowed for a lower dose of the ICI, which minimized patient discomfort. ICIs appear to be effective for men who have tried oral agents without success. They also appear to be especially effective in men for whom cavernosal nerve sparing could not be achieved. Despite the evidence for ICIs in the rehabilitative setting, the studies were small and uncontrolled, preventing any definitive conclusions.

Intraurethral Alprostadil

Suppositories.

Intraurethral alprostadil suppositories (IUAs) have been shown to be safe and tolerable after RP, and it appears to shorten the recovery time to regain erectile function. According to Raina et al. (2007), at the end of 6 months, 74% of men using 250ug of IUA 3x weekly reported successful intercourse compared to 37% on a once daily treatment. In another study by McCullough et al (2010), Viagra was compared to IUA after bilateral NSRP. The IUA appeared to provide improved erectile function, as did Viagra; however, IUA did not require an intact nerve supply. However, neither IUA nor Viagra offered a total solution to the successful penile rehabilitation after RP. It is still unclear whether there is a benefit to the administration of IUAs in a penile rehabilitation program. The success in a salvage context for ED therapy when patients fail oral therapy is suggested, but not proven. The studies for IUIs have been limited by their small size as well as the fact that there is not one rehab regimen that has been proven to be superior.



Optimizing Erectile Function (Continued)



Further studies will be needed to clarify their role for rehab therapy.

Vacuum Erection Devices.

Vacuum therapy utilizes negative pressure to distend the corporal sinusoids and to increase the blood flow to the penis. Although it is commonly used with a constriction ring, it may be used without it for the purposes of penile rehab. The first reports by Hall (1995) and Zippe (2001) indicated the feasibility of its use in a distinct patient cohort, and the early incorporation of VED into the concept of penile rehab was encouraged. Since then, only a few studies have examined the use of VEDs in treating men after RP. The studies seem to conclude that the daily use of a VED (early after RP) facilitates sexual intercourse, spousal satisfaction, and the earlier return of natural erections after RP. It has also been shown to prevent postoperative penile shortening. Furthermore, the addition of Viagra to the use of VED led to a significant improvement in erectile function

in 77% of patients. As compared to PDE-5Is, it is interesting to note that the drop out rate was not significant (18% at 3 months into the treatment).

Surgical Intervention.

If a patient fails to respond to penile rehabilitation for one year after the RP, the rate of recovery to normal and spontaneous erectile function is very low. At that point, I recommend a penile implant as the single best treatment modality for the patient. A penile implant usually consists of 3 components: 2 cylinders that run in the shaft of the penis, a pump in the scrotum, and a reservoir (in a space next to the bladder and behind the pubic bone) When a patient squeezes the pump, saline (salt water) moves from the reservoir and into the cylinders, creating a natural-looking erection. The erection lasts as long as the patient wants, and it can be released by simply pressing a button on the pump. The penile sensation and the ability to ejaculate remains the same for the patient. The procedure is minimally invasive and can be done in 30-45 minutes via a 3 cm opening in the suprapubic region (where the pubic hair is located above the penis). Patients can go home the same day after the procedure with a manageable recovery, allowing them to use the implant in 6 weeks. After 3-6 months, the implant becomes a natural part of your body in similar fashion to a hip or knee replacement. The literature reports 92-98% patient and couple satisfaction rates (respectively), and the

implant has a 90% success at 10 years (good durability). The reason for such high success is related to its reliability, spontaneity, and low side effect profile. Furthermore, most insurance companies pay for the procedure. Interestingly, only 5% of all urologists perform penile implants regularly; as a result, the penile implant is largely under-represented. The average patient usually sees 3-4 urologists and waits between 5 and 10 years before finding a prosthetic urologist that specializes in penile implants. As a result, if penile rehab is unsuccessful after one year, I recommend that patients find a prosthetic urologist who will properly evaluate and educate the patient for a penile implant.

Summary

In summary, at present, PDE-5I, ICI, and IUI do not offer a total solution to successful penile rehabilitation after RP. New trials are needed to help us understand their best clinical uses and which patients will benefit the most from them. Despite the uncertainty, I currently recommend all patients undergoing RP follow a post-operative rehabilitation program. The research, although limited by size and study design, does consistently support it. I recommend starting a daily PDE5-I (Cialis 5mg is my drug of choice) and initiating VED therapy as early as the patient feels comfortable (usually at 4-6 wks). I recommend using the VED to create an erection without a constriction ring 2x daily for 10 minutes per session. If a patient is

unable to use the VED, I will offer the patient the option of ICI as an alternative therapy. Certainly, if a patient does not appreciate any improvement in spontaneous erectile function by one year after the RP, I strongly recommend a penile implant by a prosthetic urologist (someone who performs at least 10 per year or more).

Patients should get to know the causes of ED and the many types of treatments that are offered.

Q&A Session: Urinary Incontinence

What is urinary incontinence? Urinary incontinence is the accidental loss of urine. More than 15 million American men and women suffer from urinary incontinence. Any leakage of urine is considered abnormal and because of the leakage, many people limit their activities that they would normally enjoy.

What are the causes of incontinence? Urinary incontinence is not a disease, but rather a symptom that can be caused by many other disease processes. These medical conditions include but not limited to diabetes, stroke, Parkinson's disease, prior surgery, childbirth or menopause. Many medications can also cause urinary incontinence including diuretics, sedatives and narcotics. Certain types of foods and drinks are also considered bladder irritants and can also worsen incontinence. A simple, uncomplicated urinary tract infection is also a known cause for incontinence.

What are the different types of incontinence?

Stress incontinence: this is most common type of urinary incontinence. This type of incontinence occurs only with activity such as walking, exercise or even sneezing and coughing. When the pelvic floor muscles become weak or damaged and cannot support the urethra and bladder appropriately, the body cannot hold the urine during increased activity.

Urge incontinence: this type of incontinence is often referred

to as overactive bladder. This type of incontinence occurs when there is a strong urge to urinate but a bathroom cannot be reached in time and the urine leaks out. This type of leakage can occur even without any warning and is considered unaware incontinence.

Overflow incontinence: this type of incontinence occurs when the bladder is full and cannot empty and symptoms include frequent small urinations or even constant dribbling. This is most common in men secondary to prostate problems or prostate surgery.

How is urinary incontinence treated? Some causes of incontinence are temporary and reversible. These include urinary tract infection, vaginal irritation, medications or even constipation. Listed are many ways to start taking control of the bladder.

Fluid management: there may be a need to decrease fluid intake, and even change the types of fluid ingested such as caffeine, colas and juices which can all be bladder irritants. Increasing water intake can also help reduce bladder irritation.

Bladder training: a bladder diary recorded by the patient will first indicate how often a person voids, how many accidents and total fluid intake. From this diary, patients can start making behavioral changes such as "timed voiding", so the bladder learns to empty regularly which will ultimately decrease incontinence episodes.

Pelvic floor exercises: Kegel exercises can help strengthen the external sphincter muscle and the muscles of the pelvic floor. This will help limit stress incontinence but has also been shown to decrease urge incontinence. Often a specific pelvic floor physical therapist can help guide patients and teach them how to perform Kegel exercises correctly. Like any other physical therapy or exercise program, Kegel exercises need to be performed regularly.

Bladder medications: anticholinergic medications are the mainstay of medical treatment and were designed to relax the bladder muscle and decrease urge incontinence. These medications can have many side effects such as dry mouth, constipation and blurry vision. Post-menopausal women can benefit from the treatment of atrophic vaginitis with hormone replacement or estrogen external creams. Men with prostate problems benefit from medications that target an enlarged prostate.

Neuromodulation therapy: if lifestyle changes and/or medications don't help, this advanced therapy can be of significant benefit. This type of therapy is based on delivering harmless electrical impulses to the nerves that control the bladder to aid in decreasing overactivity and ultimately increase continence. This therapy is offered in two different ways.

Sacral neuromodulation: this works by an implanted wire and battery operated device

that delivers electrical impulses specifically to the sacral nerve that is connected to the bladder and helps reduce bladder overactivity and the resulting incontinence.

Percutaneous tibial nerve stimulation: is a non-surgical way to stimulate the nerves that control the bladder by sending electrical impulses to the tibial nerve near the ankle. These impulses will ultimately run along the tibial nerve to the sacral nerve and help control the bladder. This is a weekly office treatment and usually requires at least 12 treatments.

Bladder injections: the use of botulinum toxin or also known as Botox, became an FDA approved procedure for overactive bladder in mid 2012. Small doses of Botox injected into the bladder muscle temporarily paralyze the bladder muscle, therefore decreasing overactivity and incontinence. The treatment can often wear off and requires repeat injections every 6 to 9 months.



Dr. Lipika R. McCauley M.D.

Summer 2013



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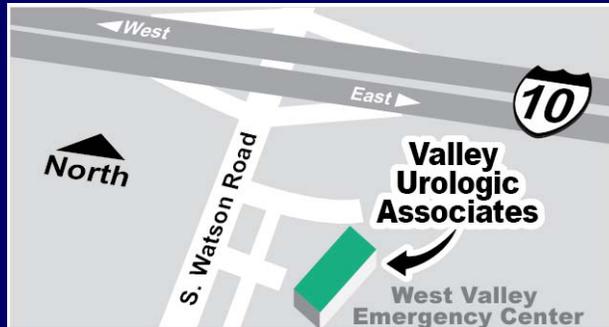
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