



New Developments Regarding PSA screening

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The medical and urologic community has used the PSA level to detect prostate cancers earlier leading to better treatment outcomes. However, the test is lacking in positive predictive accuracy especially in older men. The initial cut-offs for an abnormal test of 4.0ng/ml has transformed to age-adjusted levels ranging from 2.4 ng/mL for men in their 50s to over 4.0ng/mL for men in their 70s. The impetus to screen resides mainly with an informed decision by the patient after discussion of the risks and benefits. The American Urologic Association has revised the recommendation to start prostate screening with a PSA and digital rectal exam (DRE) at AGE

40. This is due to the high signal to noise ratio for PSA at earlier ages (i.e. men in their 40s have low “noise” level of PSA produced in settings by non-cancerous cells such as BPH). The 2 studies with the European ERSPC study showed a 20% reduction among those who have undergone screening. The American PLCO study showed no difference in cancer specific deaths at 7-10 years of follow up but 44% of men were screened before entrance into the study and 52% of the control group were screened leading at least significant selection bias. For more information go to the AUA website at www.auanet.org. If you have a



New research shed light on the use of PSA in prostate cancer

patient with an elevated PSA, please refer them to our office.

PSA at a glance

- PSA abnormal values changes based on the age of the patient
- PSA velocity of > 2.0 ng/mL the year before diagnosis is associated with a higher cancer specific mortality
- PSA velocity of 0.75ng/mL per year should be of concern

Dr. Blick Returns to the West Valley

The partners of Valley Urologic Associates would like to announce that Dr. Blick is returning to the West Valley starting July 1st, 2009. He will be accepting new patients and seeing all of the old patients who we have had a privilege to take care of in the West Valley since 2004. We hope that you will be able to reconnect with

him when he returns to the West Valley office at 13555 W. McDowell Rd.

*Dr. Shawn D. Blick, M.D.
President and Founder*



Clinical Stage I Kidney Cancer



Dr. Vi Hua, M.D.

The old triad of hematuria (blood in the urine), palpable mass, and flank pain regarding Kidney cancer is very rarely found today. We have seen a stage migration of kidney cancer to earlier detection due to routine imaging such as CT and Ultrasound for abdominal pain or finding of microscopic hematuria. Research from Memorial Sloan Kettering analyzing 2081 patients show that the size of the tumor corresponds to metastasis (spread) at presentation (synchronous) and later after treatment (metachronous). Tumors under 3 CM have virtually 0% probability of metastasis. This corresponds to the prognosis based on the original TNM staging for Renal Cell Cancer. Stage Ia (locally confined <4 CM) and Stage Ib (locally confined 4-7 CM) have the best prognosis. This is not to be confused with transitional cell cancer of the upper tracts that arise from the collecting system, which is more aggressive, and has a worse prognosis. How we address these small Stage I tumors are still controversial. The American

Urologic Association recommends on its best practice guideline that nephron-sparing surgical therapy (removal of the tumor only) be used as the first line treatment. There are newer thermal ablation techniques such as cryotherapy that have not yet accrued the long term data needed for comparative analysis. These are currently reserved for patients who are elderly, have co-morbidities increasing risk of surgery, or who, after informed consent, accept the possible risks of higher recurrence, need for additional procedures, and lifelong radiological surveillance. Due to the relatively significant rate of benign lesions (15%) and the indolent nature of small lesions, active surveillance (Watching the tumor and following with imaging) is also accepted for those who are elderly and have severe co-morbidities that preclude surgery. Please go to www.auanet.org to find out more about these guidelines. We at VUA have the full urological armamentarium to offer to our patients including laparoscopic nephrectomy,

laparoscopic partial nephrectomy, laparoscopic cryoablation, robotic daVinci laparoscopic partial nephrectomy, and most importantly, someone who can counsel with them through the diagnosis. If you are a patient with a new diagnosis of a kidney lesion or if you are a primary care physician with the aforementioned patient, please feel free to refer them to VUA.



Finding Renal Cell Cancer is now Incidental on Imaging

Active Surveillance for small renal masses in the infirm elderly is plausible

Does BMI Affect Reconstructive Surgery in Children

Myelodysplasia is a common cause of neurogenic bladder dysfunction in children. Formation of the spinal cord and vertebral column begins about the 18th day of gestation. The exact mechanisms that result in this closure and what is responsible for the dysraphic development are unknown. As

many as 40% of myelodysplasia patients ultimately will require reconstructive surgery to achieve urinary and/or fecal continence. Such reconstructive surgeries are associated with high complication rates. Although reported complication rates vary greatly, stomal complications consistently

represent the majority associated with these reconstructive procedures.

Myelodysplasia patients are unique in their physical characteristics and present with a wide spectrum of physical manifestations. Spinal and lower extremity malformations

often lead to a non-ambulatory status. Many children with myelodysplasia do not meet the expected rate of ambulation as other children with the same level of spinal injury from other causes. The effects of the insult to the nervous system can change throughout a patient's lifetime. These changes are not limited to bladder and bowel function as those who walk in childhood have a 20–50% chance of becoming wheelchair dependent as adults. We have known that children with myelodysplasia are more prone to obesity secondary to less active lifestyles and decreased energy requirements. Furthermore, we know that childhood obesity is associated with morbidity. Higher rates of musculoskeletal pain, obstructive sleep apnea symptoms, headaches, depression, and anxiety have been found as well as increased systolic and diastolic blood pressure.

Although many surgeons have suspected that obese patients have increased surgical complications, the adult literature has not been consistent in showing an association other than an increase rate of wound infections in obese patients. Studies that investigate the effects of obesity on the post-operative period in children, specifically in the myelodysplasia population, are rare.

Dr. Donovan was an integral part in a recently published retrospective review of 66 myelodysplasia patients undergoing urinary or fecal reconstruction surgical procedures. In this study, 33.3% of these patients were found to be obese (BMI > 95th percentile). There were a total of 53 com-

plications in 31 patients (51.7%). There was a significant association between presence of complications and weight category: incidences of complications in these categories were 40% of normal BMI (<85th percentile), 40% of overweight (BMI between 85th and 95th percentile) and 75% of obese ($p = .0380$). An association between stomal stenosis and BMI category was also found ($p = .0373$). Sixty percent of the stomal stenosis occurred in the obese category. In addition, multiple complications were more prevalent in obese patients. 67% of the patients with 2 or more complications were obese ($p = .0066$).

Compliance has been suggested to be a factor in the development of stenosis. Could there be an association between compliance and obesity? Do the same circumstances that allow one to achieve obesity also coincide with maintenance attributes like compliance and hygiene?

Although stomal stenosis was the only specific complication category that showed an association with obesity, the study clearly demonstrated that obesity is associated with an overall increase in surgical complications as 75% of the obese patients developed some surgical complication.

Interestingly, there was not an increase in surgical complications for patients in the overweight category (BMI between 85th and 95th percentile). They had the exact same rate of complications as the normal

weight patients. It was not until one reached the obese category (BMI > 95th percentile) that their complication rate nearly doubled.

Weight loss programs may be very challenging for some of these patients and high expectations may be unrealistic for many. But, programs that increase physical activity and provide education on dietary changes do exist and patients should be put in contact with local or regional Spina Bifida associations. Heavy emphasis should be placed on these lifestyle changes as even a modest change in weight may prove to be sufficient to decrease BMI, and, therefore, decrease surgical complications. As seen in the study, simply decreasing BMI into the overweight category from the obese can have a profound effect on the overall surgical outcome.

Dr. Ben Donovan is a fellowship-trained pediatric urologist equipped to handle the most complex urologic issues in children.



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

Many children with myelodysplasia do not meet the expected rate of ambulation as other children with the same level of spinal injury from other causes

Preventing Kidney Stones



Dr. Lynn W. Blunt, M.D.

How much water should I drink each day? Is a commonly asked question during office visits. The patient who has been diagnosed with kidney stones or the individual who suffers from recurrent kidney stone problems most often asks it. However proper hydration is key to avoiding several urologic conditions other than kidney stones. These conditions can include recurrent bladder infections, kidney infections, epididymitis and prostatitis. Water makes up approximately 55-60% of our body weight. In addition to helping avoid the previously mentioned urologic problems, proper hydration is imperative to keeping our body systems running smoothly.

Exactly how much water a person should consume each day can be influenced by several factors. Living or working in a hot/dry environment such as Arizona can have a drastic effect on how much fluid someone must drink to maintain proper hydration. Loss of fluids through sweating and respiration can be significant. Individuals who have high activity levels through exercise

or work must make additional allowances for fluid loss in our climate. In addition, people who consume high salt diets need to drink more fluids to flush out the added salt from their bodies. When taking all these factors into account it is easiest to stick to the golden rule of drinking enough fluid daily to produce 2.5 liters (2/3 of a gallon) of urine daily. The amount of fluid intake it will take to reach this goal will vary from person to person. In addition, certain individuals may have medical conditions such as congestive heart failure and renal failure that may require specific daily fluid restrictions by a doctor. If a person wants to roughly calculate the daily fluid requirements for an adult it can be estimated with two different equations. First using Body Weight:

$$0.5 \text{ ounces} \times \text{Body Weight in Pounds} = \text{Daily Fluid Requirement (oz)}$$

Second using Daily Caloric Intake:

$$0.034 \text{ ounces} \times \text{Daily Caloric Intake} = \text{Daily Fluid Requirement in (oz)}$$

It is important to remember that a person can meet their personal Daily Fluid Require-

ment with the help of some foods as well as drinking fluids. For instance, an orange is 87% water. Vegetables can also be an excellent source of water. Fruit juices, milk, and non-caffeinated beverages are also sources of water. On average a person will get 20% of their daily water intake from food and the remaining 80% comes from water and various beverages. Water is clearly a person's best bet for meeting their given Daily Fluid Requirement. It is readily available, inexpensive, and of course calorie-free.

There are several recommendations for those people who find it hard to maintain proper daily hydration. These include drinking a glass of water with each meal and between each meal, as well as hydrating before during and after exercise. For some people carrying a bottle of water with them can be very helpful in forming good habits. If a person waits to drink until they are thirsty they are more than likely already somewhat dehydrated.

Interstim Neuromodulation Therapy "pacemaker for the bladder"



Dr. Jonathan Agins, M.D.

Did you know that Overactive Bladder and Incontinence affects more people than diabetes, asthma, arthritis, and Alzheimer's disease combined?

Jonathan W. Agins, M.D. has been performing a life-changing procedure here at Valley Urologic Associates called InterStim. Medtronic's InterStim Therapy helps control urinary problems through an implanted device that sends mild electrical impulses through a thin wire to the nerves that control the bladder.

This gentle stimulation can eliminate or reduce certain bladder control symptoms in most people. InterStim Therapy is often referred to as a pacemaker for the bladder.

Dr. Agins performs the most of these procedures in Arizona and helps to train other Physicians so that they may be able to offer this technology to their patients.

Interstim is performed under local anesthesia in an outpatient setting. To schedule an



evaluation to see if you would benefit from Interstim, please call Gabi at 623-935-5522.

Erectile Dysfunction and the Cardiovascular Disease Connection

Erectile Dysfunction (ED) is defined by the National Institutes of Health as the inability of a man to achieve and maintain a penile erection sufficient for sexual activity. ED is extremely prevalent, affecting up to 30 million men in the United States, suggesting that 52% of men aged 40-70 years experience ED to a greater or lesser degree. Since 1998 and the launching of Viagra to the public, ED has become an openly discussed topic in the community and in doctors' offices. We are infiltrated with TV, Radio, and Newspaper advertisements that seek to enhance our sexual function with the aid of a simple pill; however, it is less commonly discussed or advertised that ED may be a predictor of cardiovascular disease (e.g. heart attacks and strokes). *In other words, "Could ED be the first sign of a blood flow problem that could cause a heart attack or stroke?"*

According to the landmark Massachusetts Male Aging Study, ED was associated most strongly with heart disease and cardiovascular risk factors such as hypertension, diabetes, smoking and lipid abnormalities, specifically, a low HDL level. *More recently, a number of high-profile reports have alerted healthcare providers that ED may be a predictor of serious cardiovascular events.* According to one study by Thompson and colleagues, 15% of men presenting with the new onset of ED will develop a cardiovascular event in the next 7 years. Another study by Blumentals concluded that men with ED have a 2-fold increased risk for a heart attack, and the risk increases with age. Finally, Montorsi and colleagues have concluded that "ED is ex-

remely common in men with coronary artery disease, yet most cardiologists don't ask about it."

These studies certainly suggest that men with ED (who have no prior history of cardiovascular disease) should be evaluated by a primary care physician or cardiologist for cardiovascular risk factors (hypertension, diabetes, smoking, obesity, lack of physical activity). Identifying and treating these risk factors may reduce deaths from heart attacks and strokes. Conversely, if a patient presents with known heart disease or risk factors for cardiovascular disease, he should be questioned regarding his sexual health and ED. Many of these patients can benefit by receiving therapy for ED.

The most common therapies for ED are the oral medications sildenafil (Viagra), vardenafil (Levitra), and tadalafil (Cialis). They are called phosphodiesterase-5 (PDE-5) inhibitors. They work by facilitating the blood flow to the penis upon sexual stimulation. *The issue of the safety of these medications, especially in the cardiac patient, has received considerable attention.* Based on the data from several large studies, there was no evidence for an increase in the rate of heart attacks in men taking PDE-5 inhibitors compared to patients taking placebo in men of similar ages. Furthermore, in patients with known coronary artery disease, the PDE-5 inhibitors have not been shown to decrease the blood flow to the heart during stress testing on a treadmill. Moreover, clinical trials have shown that PDE-5 inhibitors are safe to take with most blood pressure medications on the market.

When PDE-5 inhibitors were administered to patients already on most blood pressure medications, there were very minimal decreases in blood pressure noted. The main exception to this rule is with Nitrates. *All 3 PDE-5 inhibitors can enhance the hypotensive (blood pressure reducing) effects of organic nitrates, and therefore, the use of these agents (including both long and short acting preparations of nitroglycerin, isosorbide dinitrate, and isosorbide mononitrate) is contraindicated in patients taking PDE-5 inhibitors.*

Based on the above discussion, ED and cardiovascular disease appear to be related. As an extension to this discussion, there have been a number of community reports of vision loss in men taking PDE-5 Inhibitors. The FDA received 43 reports of varying degrees of vision loss, including blindness, among users of the PDE-5 Inhibitors. *Most of these cases of vision loss were due to nonarteritic ischemic optic neuropathy (NAION).*

NAION is a vascular event that is presumed to occur due to a decrease in blood flow to the small arteries that supply the optic nerve to the eye. It is characterized clinically by the acute onset of unilateral visual loss, and it occurs in 1500-6000 new cases every year in the United States. Despite its frequency, the exact cause is unknown. Patients are typically older than 50 years of age, and it has been associated with numerous risk factors: hypertension, diabetes, arteriosclerosis, high cholesterol, and previous intraocular surgery.



Dr. Shawn D. Blick, M.D.

These studies certainly suggest that men with ED (who have no prior history of cardiovascular disease) should be evaluated by a primary care physician or cardiologist for cardiovascular risk factors

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Valley Urologic Associates

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Valley Urologic Associates provides excellent service in **ALL AREAS OF UROLOGY**. The members of VUA are all experienced general urologists with different sub-specialties. Uniquely, this allows specific docs to treat specific problems, providing the highest level of urologic care for patients in the Phoenix Metro Area.

We are on the Web!

<http://www.ValleyUrologicAssociates.com>

The History of Robotics in Surgery



The da Vinci Robot used in robotic laparoscopic prostatectomy, pyeloplasty, and partial nephrectomy

The first generation of surgical robotic assistance was trialed in the mid to late 1980's in the fields of neurosurgery, urology and orthopedic surgery. In neurosurgery, many systems have been used as neuronavigators, stereotactic localizers and robotic assistants in surgery. The initial system was employed in 1985 and was called the PUMA 560. It was used to orient a needle for a brain biopsy under computerized tomography guidance. In 1989, a group at Imperial College, London, developed the concept of using a robot in urology to perform transurethral resection of the prostate. The fact that the prostate is a relatively fixed organ and that the procedure requires repetitive movements made this operation a good candidate for robotic intervention. However, its utility and adoption was limited. In orthopedics, the RoboDoc™ system (Integrated Surgical Systems, Inc., Sacramento, CA, USA) was designed to address poten-

tial human errors in performing cement-less total hip replacements. This system helped the surgeon in milling out a hole in the femur and thus produces cavities that are 10 times more accurate than can be achieved by manual reaming. While these early innovations were quite revolutionary; their clinical applications were limited by the lack of maturity of the technology. Therefore, these early robotic systems were not widely implemented and soon disappeared.

The modern era of surgical robotics has seen the development of more advanced robotic systems with a broader array of clinical applications. The new era of telepresence surgery, that allows the surgeon to operate at a distance from the operating room, was simultaneously developed at the Stanford Research Institute, Department of Defense, and the National Aeronautics and Space Administration (NASA). The initial purpose

was to create a prototype to suit the needs of the military, and the robotic arms were designed to be mounted on an armored vehicle to provide immediate operative care in the battlefield. Surgeons would be able to use the telepresence technology to operate in the battlefield from a safe distance. Soon thereafter, Intuitive Surgical acquired the prototype and commercialized the system called da Vinci. For more information go to:

www.intuitivesurgical.com. Dr. Rahul Thaly, M.D. is a fellowship-trained robotic surgeon who has performed hundreds of procedures using the da Vinci Robot.

