



Urology for the Busy Primary Care and Updates in Urology

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Disclosures

I HAVE NO DISCLOSURES AS IT PERTAINS TO THIS DISCUSSION

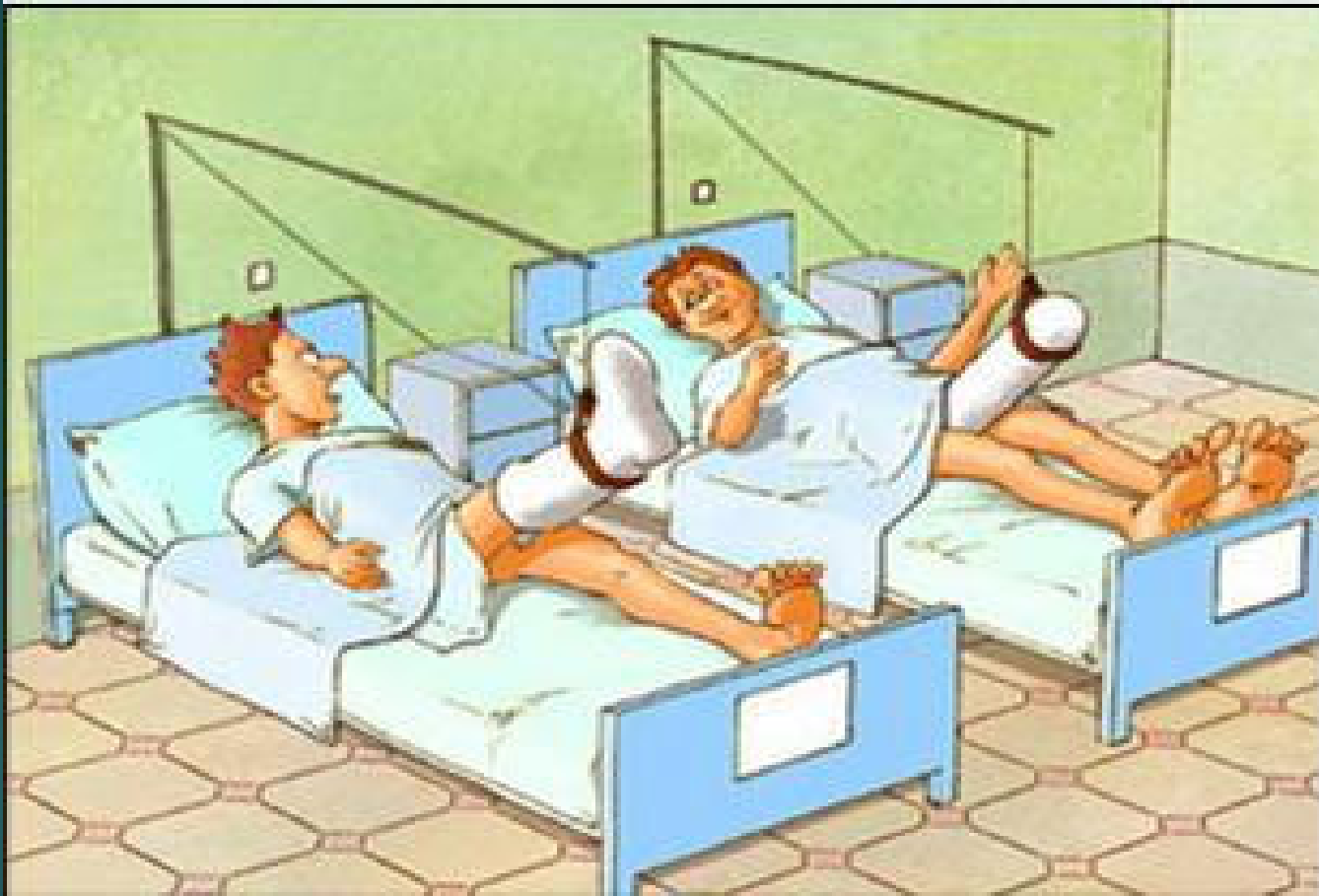
NOTE: SHAREHOLDER, KNOXVILLE AREA STONE CENTER



Objectives



- ▶ Define common (and uncommon) urologic emergencies – presentation, diagnosis, and treatment
- ▶ Understand the PSA screening controversy, and how to screen appropriately
- ▶ Recognize the presentation and workup of common genitourinary malignancies
- ▶ Know when and why to refer to a urologist
- ▶ Review AUA Guidelines for the Evaluation and Management of Testosterone Deficiency



Acute Urinary Retention (AUR)

▶ SIGNS & SYMPTOMS:

- ▶ Suprapubic Pain/Pressure
- ▶ Inability to Void
- ▶ Typically we consider 350cc PVR as retention with symptoms



AUR

- ▶ BPH (bladder outlet obstruction/ benign prostatic hyperplasia)
- ▶ Urethral Stricture
- ▶ Blood clots
- ▶ Bladder neck contracture
- ▶ Medications
- ▶ Neurogenic/spinal shock
- ▶ Infectious
- ▶ Constipation, immobility

AUR

► COMPLICATIONS:

- **Gross hematuria** (bladder mass, h/o radiation, or decompression with patient on blood thinners)

- **Autonomic Dysreflexia**

 - Exaggerated sympathetic response in pts with SC injuries T6 and higher

 - Flushing, sweating, HTN, bradycardia

 - Treatment: empty bladder, sit patient up, nitropaste **above** level of the lesion, PO nifedipine

- **Post-obstructive diuresis** (volumes >1 Liter)

 - Incidence low (<5%)

 - Concern in patients with b/l hydronephrosis, solitary kidney with hydronephrosis *and* AKI.

 - Especially cautious in patients with cardiac history

 - Replacement fluids: 75% of volume drained of ½ NS at 100cc/hr, recheck labs approx 6 hours later

AUR

▶ MANAGEMENT:

▶ Foley Catheter

- ▶ Enlarged prostate – 16Fr or **18Fr** Coude
- ▶ Urethral stricture – go smaller, can use silicone catheter which has a firmer tip and can push through soft strictures (14Fr)

- ▶ Clot retention – 3-way catheter, **22F or larger**

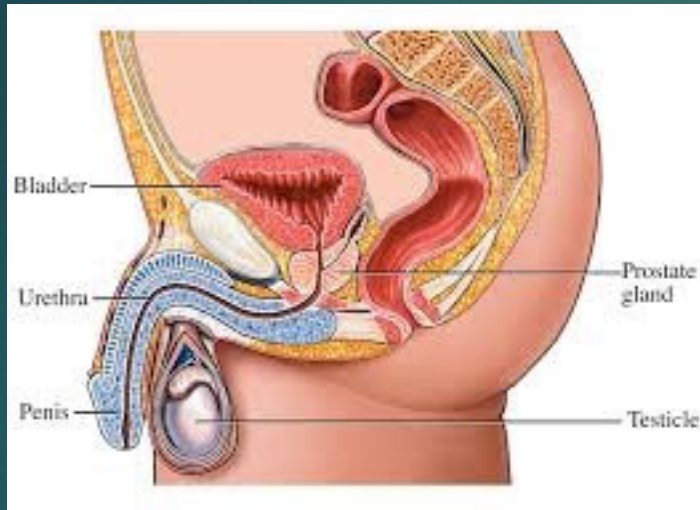
- ▶ Lidojet Lidocaine jelly

▶ **PLEASE DOCUMENT VOLUME OF URINE RETURNED WHEN CATHETER PLACED!**

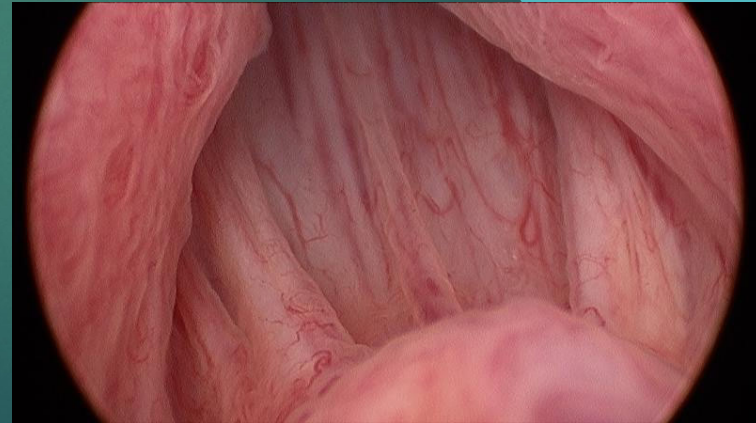
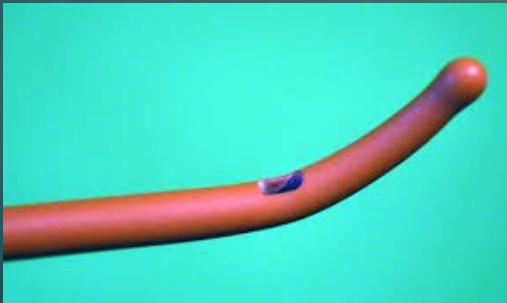
- ▶ Flomax 0.4 mg qhs

- ▶ Must tell young men about retrograde ejaculation

Coude Catheter



Designed to easily navigate the male urethral with minimal trauma to the prostate



Gross Hematuria

► SIGNS & SYMPTOMS:

- ONLY an emergency if clot retention (PVR >350cc)
- As little as 3 cc of blood in 1L of urine can cause gross hematuria!

Always look at foley tubing and not bag to determine severity



Gross Hematuria (GH)

▶ ETIOLOGY:

▶ **Nephrogenic** (Medical/Renal)

- ▶ Glomerular
- ▶ Tubulo-interstitial

▶ **Urologic**

▶ **MALIGNANCY**

- ▶ Urethral Ca
- ▶ Prostatic Ca

▶ **Bladder Cancer**

- ▶ Upper Tract Urothelial Cell Ca
- ▶ RCC

- ▶ Infection
- ▶ Benign Prostatic Dx
- ▶ Stones
- ▶ Renal Vein thrombosis
- ▶ Trauma
- ▶ Radiation to pelvic organs



Gross Hematuria

▶ MANAGEMENT:

- ▶ 3-way Foley catheter, 22 Fr or larger

- ▶ Bladder irrigation prevents *new* clot formation

- ▶ Must hand irrigate first to remove existing clot

- ▶ Hand irrigation with Toomey syringe- Clamp inflow, insert 120cc of fluid (2 Toomey's full) then draw back 60cc and alternate in 60cc intervals until free of clot. We insert 120cc first to avoid aspirating from a collapsed bladder

- ▶ DO NOT irrigate the inflow port or the balloon port

- ▶ USE NSS

- ▶ Last resort: cystoscopy with clot evacuation and fulguration (GU)

Microscopic Hematuria Workup

- ▶ DIAGNOSIS/WORK UP:
 - ▶ UA (not UA with reflex) – send for microscopic analysis
 - ▶ Urine C & S
 - ▶ Upper tract studies –**CT Urogram** (if creatinine normal), Retrograde Pyelogram- done by urology in OR
 - ▶ Cystoscopy –office-based

**3-5 RBCs/hpf on properly collected sample,
in the absence of any other identifiable
reason**

Hematuria – when do I refer to Urology?

- ▶ Gross Hematuria – **ANY** GH outside of a stone, UTI, trauma, etc must be worked up (give benign cause a chance to resolve and then repeat)
- ▶ Asymptomatic Microscopic Hematuria (AMH) – defined as 3-5 RBC/hpf (microscopic analysis, not just dip) on a properly collected sample in the absence of another cause – send to your lab!
- ▶ Repeat UA 3 times if nothing showed up the first time after + dip
- ▶ **CT Urogram (3 phase – w/o, w, 10 min delayed scan) – PLEASE ORDER THIS!!!**
- ▶ Cystoscopy (assesses all urothelium from collecting system to bladder and all sources of blood in urine) usually 35 yo or older
- ▶ Urine Cytology (+/- consider if risk factors or persistent microhematuria)

Hematuria

- ▶ *Painless gross hematuria is bladder cancer until proven otherwise!*
- ▶ Bladder Ca is the most expensive GU malignancy we treat (due to significant surveillance costs)
- ▶ 23% of pts with GH will have a GU malignancy, whereas only 5% of pts with AMH will have malignancy
- ▶ **ASA? (D/N)OACs? Plavix?** – pt still needs to be worked up!!!
These meds do not cause bleeding, they just make it easier to bleed



Paraphimosis

- ▶ SIGNS & SYMPTOMS:

- ▶ Painful swelling of the foreskin, proximal to the coronal sulcus causing glans ischemia



Paraphimosis in uncircumcised male. Foreskin is drawn back over glans and cannot return. Can cut off blood supply to glans penis, causing permanent injury. Mills, Morton, Page. A Color Atlas of Accidents and Emergencies, 1984.

Paraphimosis



- ▶ DIAGNOSIS: Physical exam
- ▶ ETIOLOGY:
 - ▶ Retraction of foreskin for a prolonged period of time
 - ▶ Iatrogenic- i.e. during foley insertion
 - ▶ Must be vigilant in demented men who may not verbalize that they are in pain
 - ▶ Most often catheterized population
 - ▶ Self-induced by patient

Paraphimosis

- ▶ MANAGEMENT: Reduction
 - ▶ Gentle steady pressure to foreskin to reduce swelling
 - ▶ Push against glans with thumbs, pulling on the foreskin with fingers (“pushing the Slim Jim back into the wrapper”)
 - ▶ Ice, LMX cream/EMLA (Lidocaine)
 - ▶ Pain meds
 - ▶ Dorsal slit- crush foreskin at 12o’clock position with hemostat, cut down line with scissors, suture close wound edges
 - ▶ Poke edematous foreskin with very small gauge needle to draw serous fluid out and decrease swelling



Phimosis

- ▶ SIGNS & SYMPTOMS:
 - ▶ Inability to retract the foreskin
 - ▶ ONLY an emergency if the patient is unable to urinate!



Phimosis

- ▶ ETIOLOGY:
 - ▶ Balanitis
 - ▶ Chronic infection
 - ▶ Poor hygiene
- ▶ DIAGNOSIS: Physical exam
- ▶ MANAGEMENT: Corticosteroids, Spreading foreskin gently with hemostat, Circumcision, Emergent dorsal slit
- ▶ Corticosteroids used are hydrocortisone 2.5%, **betamethasone 0.05%**, triamcinolone 0.01%



Now for the plumbing portion of the talk...



Hydronephrosis

▶ ETIOLOGY:

▶ **Stones**

▶ Stricture

▶ Urinary retention

▶ Malignancy

▶ Malignant extrinsic compression on ureters

▶ Aberrant crossing vessel (ureteropelvic junction obstruction)

▶ Retroperitoneal fibrosis

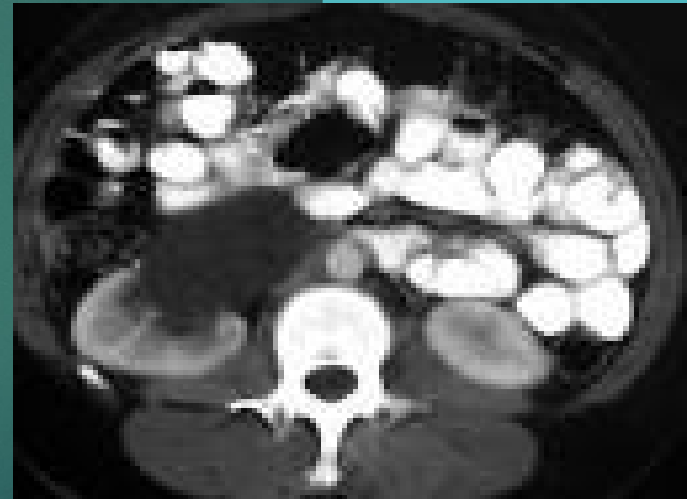


Hydronephrosis

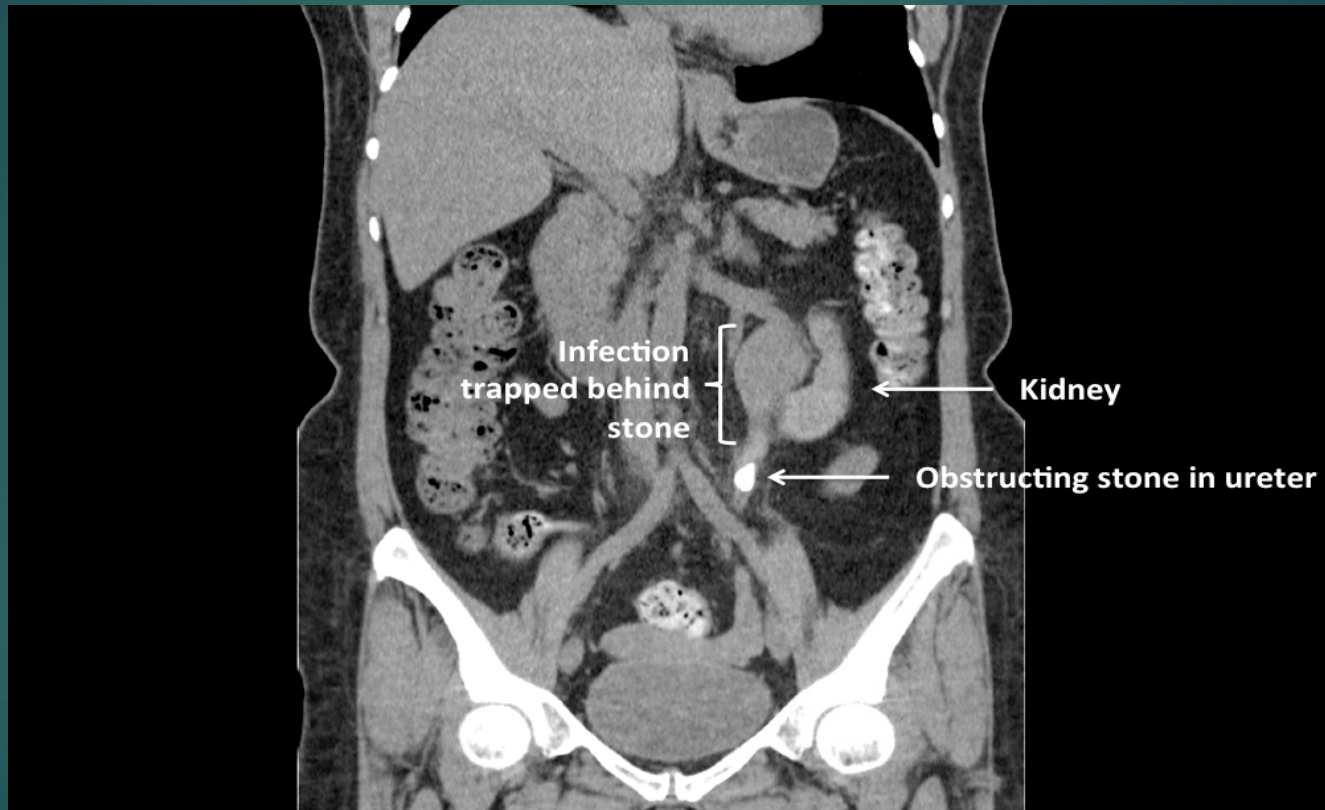
- ▶ Hydro usually caused by obstruction (stone, mass, UPJO, malignant)

SIGNS & SYMPTOMS:

- ▶ Flank pain
- ▶ AKI
- ▶ Leukocytosis
- ▶ Fever
- ▶ Altered Mental Status
- ▶ Hematuria
- ▶ CAN BE ASYMPTOMATIC



Septic Stone



What is behind a septic stone?



Hydronephrosis

▶ DIAGNOSIS:

▶ CT- **GOLD STANDARD**

- ▶ US with KUB (however ultrasound can overestimate size of stones to almost double the size!)
- ▶ Ultrasound can be used in ANY pt to assess for hydro, but it will not assess for location

WHEN IS IT AN EMERGENCY?

- ▶ Fever, Tachycardia, Sepsis/ **Septic Shock**, electrolyte imbalance, renal failure.
 - ▶ Nephrostomy tube- placed by interventional radiology
 - ▶ Ureteral Stent- placed by urology
 - ▶ Foley catheter drainage

Do I need to call Urology about this stone?

- ▶ According to the AUA, in the absence of sepsis/fevers, severe renal insufficiency, hemodynamic instability, intractable nausea/vomiting, or uncontrollable pain:
 - ▶ stones less than **1 centimeter** can be tried on outpatient medical expulsive therapy
 - ▶ Typically home with Flomax, antibiotics if indicated, analgesics(TORADOL), URINE STRAINER
- ▶ EMERGENCIES: bilateral ureteral stones, ureteral stones in solitary kidney, transplant stones, sepsis, severe renal insufficiency, uncontrollable nausea/vomiting or pain, pregnancy
- ▶ Calyceal/Forniceal rupture/s? **NOT** treated any differently

Should I use Tamsulosin for stones? No.

- ▶ SUSPEND trial (UK)
- ▶ 512 participants randomized to Tamsulosin or placebo
- ▶ Stone passage rates were **50% in the tamsulosin group and 47% in the placebo group** (relative risk, 1.05; 95.8% CI, 0.87-1.27; $P = .60$), a nonsignificant difference
- ▶ Other studies show non-inferiority with use of tamsulosin (Furyk JS, et al, Ann Emerg Med 2016; 67: 86)

Should I use Tamsulosin for stones? Yes.

- ▶ Systematic Review and Meta-Analysis
- ▶ 56 RCTs, N=9395
- ▶ Tamsulosin associated with
 - ▶ higher stone expulsion rate
 - ▶ a shorter time to expulsion
 - ▶ a lesser incidence of ureteral colic
 - ▶ fewer incidences of subsequent interventions
- ▶ No difference in control re: side effects
- ▶ Significant difference in stones larger than 5mm
- ▶ No effect on stones smaller 5mm
- ▶ **SUMMARY? Use it. Low risk , high reward**



BUT... Please use Toradol

- ▶ **Ketorolac is the single best medicine that can be used for renal colic**
- ▶ It physiologically improves pain, ureteral spasm, and facilitates stone passage
- ▶ 10-15mg IV is equivalent to 30mg IV (Motov S et al., *Ann Emerg Med*; 2016)
- ▶ Can use transiently even in pts with AKI
- ▶ Also available in nasal spray (Sprix)
- ▶ Consider sending pts home without narcotics
- ▶ **Also, kidney stones hurt because of obstruction. Non-obstructing kidney stones do not cause pain.**
- ▶ If you can avoid narcotics, PLEASE DO!

Testicular Torsion

- ▶ SIGNS & SYMPTOMS:
 - ▶ Sudden onset testicular pain +/- edema
 - ▶ Often associated with nausea and vomiting



Torsion

- ▶ PHYSIOLOGY:
 - ▶ Twisting of testis & spermatic cord around a vertical axis, causing:
 - ▶ Venous obstruction
 - ▶ Progressive edema
 - ▶ Arterial compromise
 - ▶ Testicular infarction (cause of pain)
- ▶ DIAGNOSIS:
 - ▶ **HISTORY AND PHYSICAL!!!**
 - ▶ Elevated testicle
 - ▶ Transverse lie
 - ▶ Absent cremasteric reflex
 - ▶ Negative Prehn's sign
 - ▶ **Color doppler US – immediately, prior to calling anyone**
 - ▶ Surgical exploration



Torsion

- ▶ MANAGEMENT:

- ▶ Manual detorsion – “open the book”
- ▶ Scrotal exploration
 - ▶ 4-6 hour window (93% salvage rate at 6 hrs)
 - ▶ **TIME IS TESTICLE!**
- ▶ Orchiopexy vs. orchiectomy if unable to salvage
- ▶ Contralateral orchiopexy

Name the foreign body...





Scrotal Abscess

- ▶ Diagnosed by US or CT
- ▶ Superficial – does not involve testicle (that would be orchitis/testicular abscess)
- ▶ Local anesthesia with incision and drainage- drained like any other superficial abscess on the body – **DOES NOT REQUIRE UROLOGY, PER EMERGENCY MEDICINE LITERATURE**
- ▶ Use Q-tip (or hemostats) to take down loculations and take cultures
- ▶ Pack with ¼ or ½ inch iodoform gauze
- ▶ **Don't worry- you won't get into the testicle**

Fournier's Gangrene

- ▶ SIGNS & SYMPTOMS:
 - ▶ Necrotizing fasciitis of the male genitalia
 - ▶ Crepitus
 - ▶ Skin Ischemia, Necrosis
 - ▶ Foul "fetid" odor (anaerobic bacteria)
 - "smell the room #"
 - ▶ Fevers, leukocytosis, septic



Fournier's Gangrene

▶ ETIOLOGY:

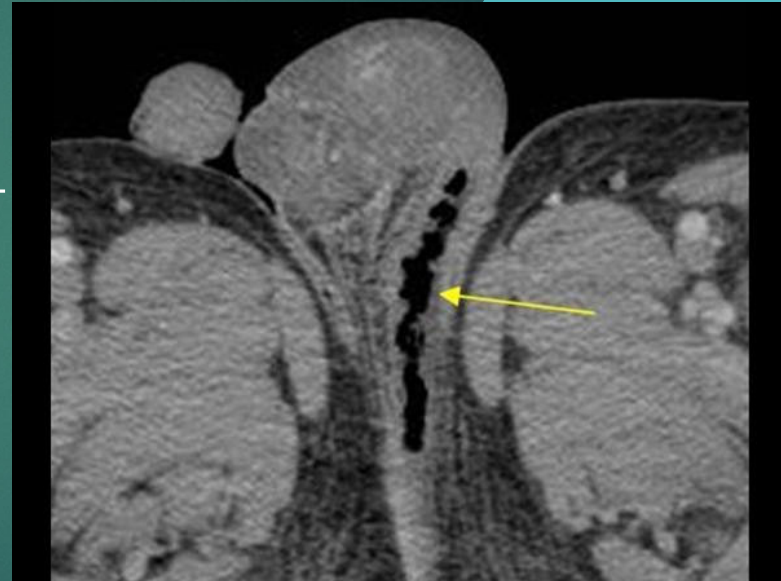
- ▶ Diabetes
- ▶ Vasculopaths
- ▶ Local Trauma
- ▶ Paraphimosis
- ▶ Periurethral Extravasation of Urine
- ▶ Perirectal/Perianal Infections
- ▶ Surgery – circ, hernia, cysto/instrumentation
- ▶ Bacteria: ***E. coli (MC)***, *Klebsiella*, enterococci, *Bacteroides*, *Fusobacterium*, *Clostridium*, microaerophilic streptococci – USUALLY MULTIPLE ORGANISMS



Fournier's Gangrene

▶ DIAGNOSIS:

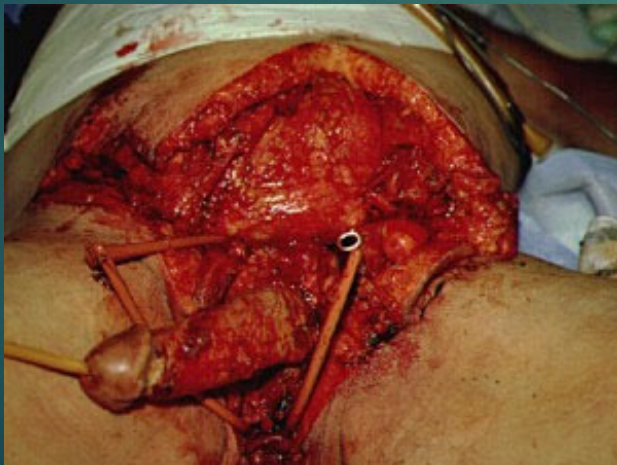
- ▶ Physical examination
 - ▶ Scrotal US
 - ▶ CT Abd/Pelvis w/ contrast
- Look for gas in sq tissue



Fournier's

▶ MANAGEMENT:

- ▶ Emergent Surgical debridement(s)
- ▶ Broad spectrum antibiotics (Zosyn/Gentamicin/Clinda)
- ▶ Consider urinary diversion with SPT
- ▶ Consider colonic diversion



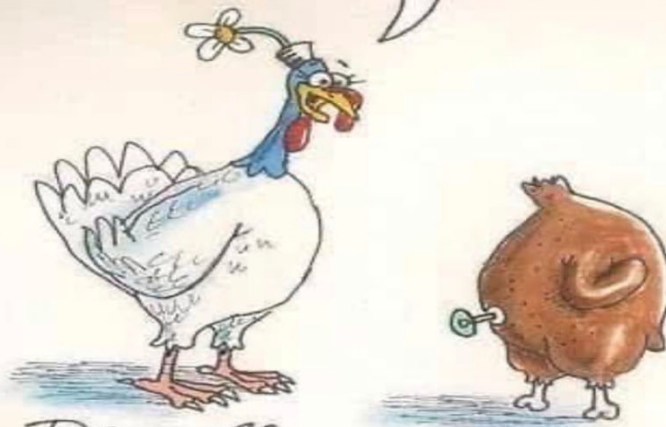
Priapism

► SIGNS & SYMPTOMS:

- Erection lasting longer than 4 hours
- +/- Pain (from cavernosal hypoxia and
- **ischemia**
- Named after Priapus, the Greek god of fertility, protector of livestock, fruit plants gardens, and male genitalia. He had a permanent erection and a large phallus



Is that your pop-up
timer or are you
just glad to see me?



Reynolds

Priapism

▶ ETIOLOGY:

▶ Hematologic Disease

- ▶ Sickle cell

- ▶ Neurologic Conditions

- ▶ Malignancy

- ▶ Leukemia

- ▶ Trauma

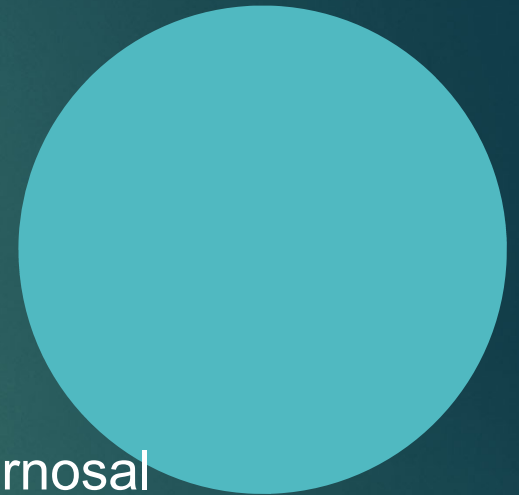
- ▶ Erectile Dysfunction Meds- usually intracavernosal injections

- ▶ Other Meds

- ▶ Trazadone, Antipsychotics

- ▶ Infection

- ▶ Other/Idiopathic



Priapism

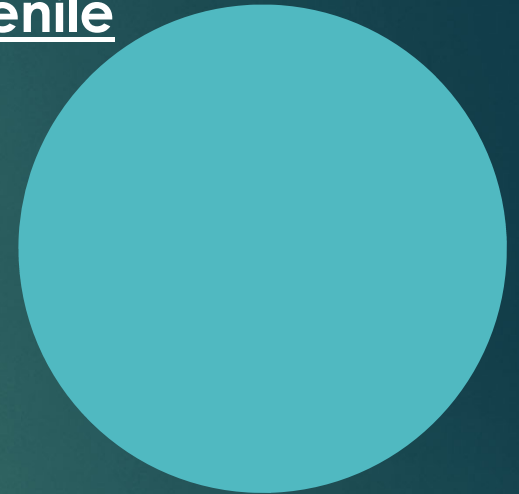
- ▶ Non ischemic priapism does not need to be irrigated/injected, thus the importance of a penile blood gas

- Ischemic ABG

- ▶ $PO_2 < 30$ mmHg
- ▶ $PCO_2 > 60$ mmHg
- ▶ $pH < 7.25$

- Non-Ischemic ABG

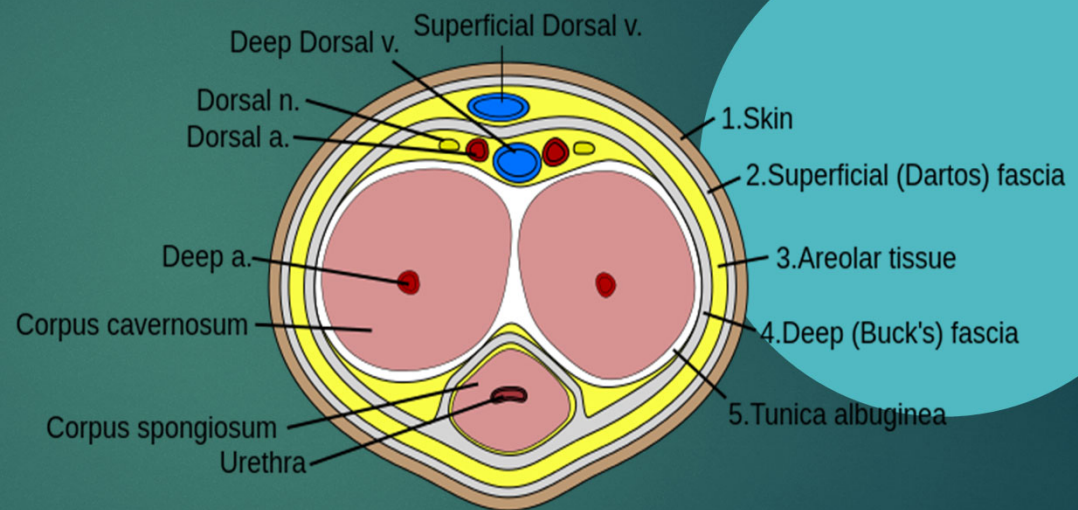
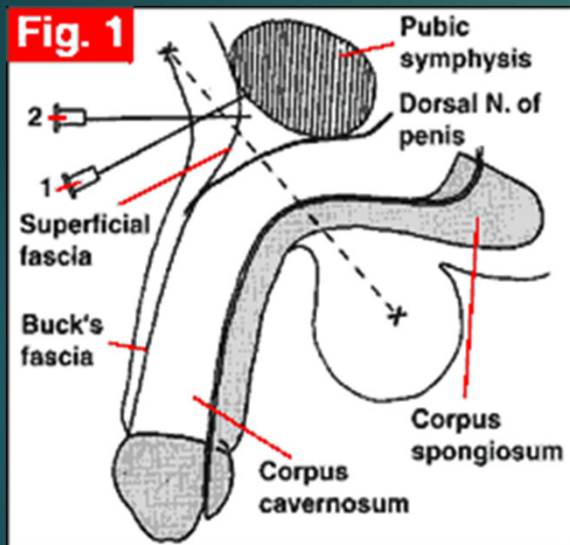
- ▶ $PO_2 > 90$ mmHg
- ▶ $PCO_2 < 40$ mmHg
- ▶ $pH = 7.40$



What if the Urologist is unavailable?

- ▶ Send for PBG (penile blood gas) – regular ABG kit
- ▶ CONSENT!!!
- ▶ CALL PHARMACY – get Phenylephrine mixed at 100-500mcg/ML
- ▶ Can try Pseudoephedrine 60mg po, Terbutaline 5mg po/SL/IM
- ▶ Attach to cardiac monitor, give abx, Morphine and Ativan
- ▶ Perform local penile block- Lidocaine without Epi
- ▶ Use large needle 16G or 18G, insert at 3 or 9 o'clock position and aspirate (use metal needle, not angiocath)
- ▶ Keep needle in place and unscrew syringe (use 20-30cc syringe)
- ▶ Inject 1cc of phenylephrine at 100-500mcg/mL, q 3-5 min
 - ▶ Can “chase” with few cc of NSS flush
- ▶ Aspirate again (as needed)
- ▶ Can repeat phenylephrine q 3-5 minutes up to 1 hour
- ▶ Have basins available, wrap penis with Kerlex afterwards to avoid hematoma formation
- ▶ When in doubt- YouTube!!! 😊

Penile Block



Priapism

▶ COMPLICATIONS:

- ▶ Erectile dysfunction 50-90% - must counsel before you even touch the patient
- ▶ Phenylephrine: reflex bradycardia / HTN – thus the monitor
- ▶ Pain
- ▶ Hematoma (wrap with Kerlex and Coban post treatment)

Penile Fracture



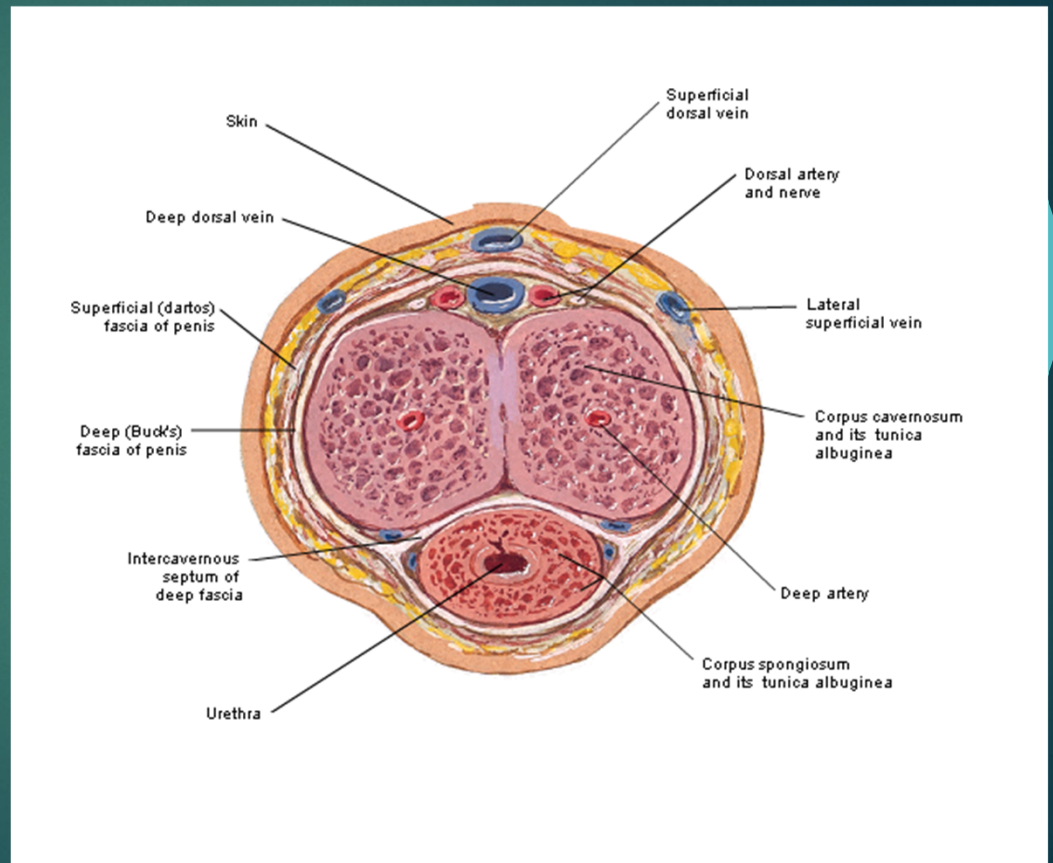
Penile Fracture

- ▶ ETIOLOGY:
 - ▶ Vigorous sexual intercourse
 - ▶ Certain positions are more likely to result in a fracture
 - ▶ Masturbation
 - ▶ Rolling over/falling on the erect penis
- ▶ Cause: sudden disruption of tunica albuginea

Penile Fracture

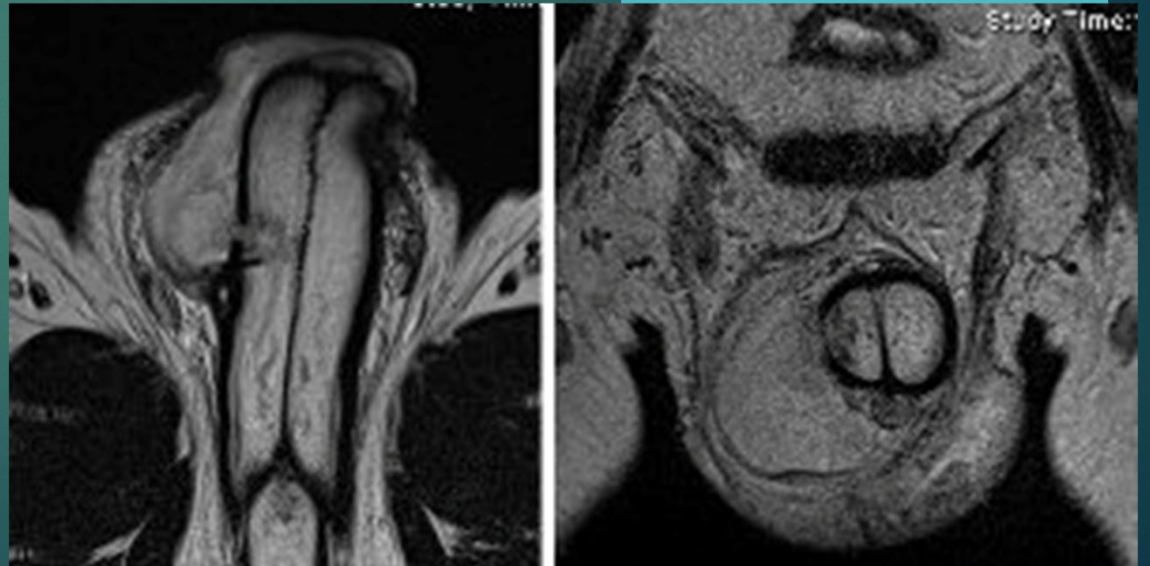
PHYSIOLOGY:

Disruption of the tunica albuginea
Rupture of the corpus cavernosum



Penile Fracture

- ▶ DIAGNOSIS:
 - ▶ H&P
 - ▶ MRI with contrast??? - disruption of the tunica albuginea
 - ▶ Surgical exploration and repair of fascial defect
 - ▶ Check UA for blood- indication of possible urethral injury



Penile Fracture

- ▶ COMPLICATIONS:

- ▶ **Erectile dysfunction**

- ▶ **Penile curvature/plaque formation**

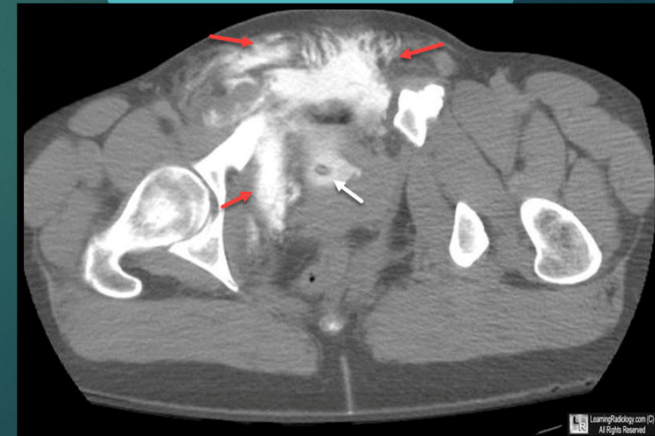
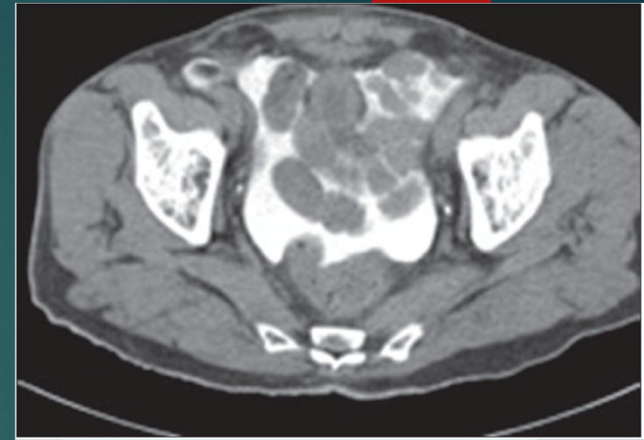
- ▶ Patient's managed by immediate surgical repair have a lower risk of penile curvature, erectile dysfunction and prolonged hospital stay.

What is this?



Bladder Rupture

- ▶ SIGNS & SYMPTOMS:
 - ▶ Suprapubic/abdominal pain
 - ▶ Inability to void, gross hematuria, ileus
 - ▶ Retrograde cystogram or CT cystogram
- ▶ Intraperitoneal: Contrast outlines loops of Bowel
- ▶ Extraperitoneal: Dense, flame-shaped collection of contrast



Bladder Rupture

▶ ETIOLOGY:

- ▶ Blunt injury – MVA, falls, assault, laceration from bone fragments
- ▶ Penetrating injury – iatrogenic/surgical, intoxication, assault
- ▶ Iatrogenic- **s/p urological (TURBT)**, GYN, colorectal surgery

▶ PHYSIOLOGY:

- ▶ Intraperitoneal: penetrating injury, burst injury at the dome of the bladder causing peritoneal violation
- ▶ Extraperitoneal: pelvic fracture

Bladder Rupture

- ▶ DIAGNOSIS:
 - ▶ Immediate catheterization if blood is NOT visible at the meatus
 - ▶ **Gross hematuria is most reliable sign of bladder injury**
 - ▶ Difficulty irrigating catheter if foley placed
 - ▶ Perform retrograde urethrogram (RUG) if blood is present at the meatus or the catheter does not pass easily.

Bladder Rupture

- ▶ MANAGEMENT:
 - ▶ Intraperitoneal:
 - ▶ Penetrating – immediate? open repair in OR (Observation???)
 - ▶ Extraperitoneal:
 - ▶ Conservative treatment
 - ▶ Foley
 - ▶ Cystogram at 10-14 Days, prior to Foley removal
 - ▶ Abx



BPH / LUTS

- ▶ Benign Prostatic Hyperplasia (not hypertrophy)
- ▶ By definition, a histologic diagnosis
- ▶ One of the most common diagnosis in the male over age 50
- ▶ 50% in 6th decade, 80% in the 9th decade
- ▶ This is an **ANATOMIC CONDITION** that leads to lower urinary tract symptoms (LUTS)

LUTS

Obstructive

Weak Stream

Intermittency

Straining

Hesitancy

Nocturia?

Irritative

Frequency

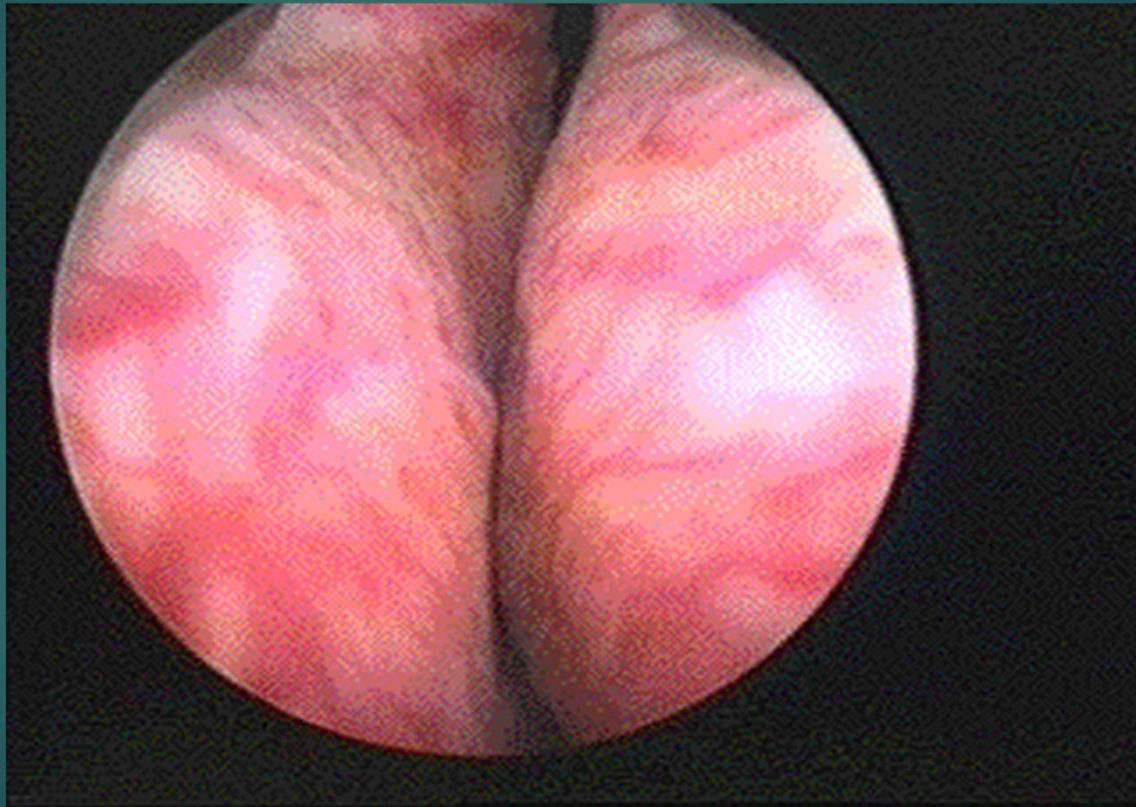
Urgency

Dysuria

Nocturia?



BPH



Workup of BPH/LUTS

1. H&P, validated questionnaire (AUA Sx Score/IPSS)
2. Assess size with transrectal US/cysto/cross-sectional imaging
3. Perform PVR prior to intervention

Management of BPH

- ▶ Surgical / Procedural
- ▶ **TURP (gold standard)**
- ▶ Simple Prostatectomy
- ▶ TUIP/TUMT/TUNA (NO!)
- ▶ Laser Ablation (Greenlight)
- ▶ **Prostatic Urethral Lift**
- ▶ Water Vapor Thermal
- ▶ **Aquablation**
- ▶ HOLEP/ThuLEP
- ▶ PAE

Medical

Tamsulosin 0.4mg (can go to 2)

Finasteride 5mg po qhs?
(significant SE profile)

PLEASE STOP USING 5 ARIs
(finasteride/dutasteride...)

Aquablation

▶ <https://vimeo.com/942432023>



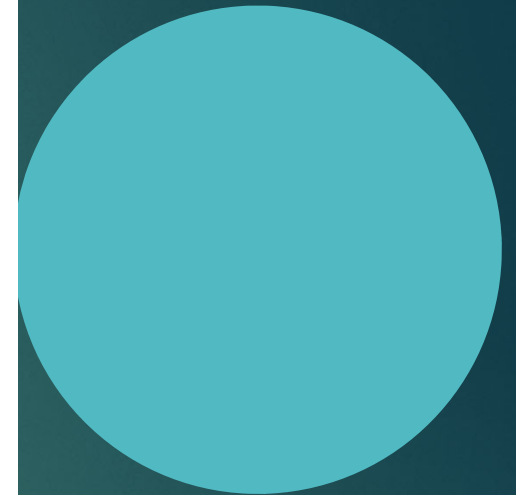
Prostatic Urethral Lift

Urolift

- ▶ Novel non-thermal based therapy that reduces obstruction by lifting and holding back tissue so it no longer obstructs
- ▶ Permanent implants placed in prostate lobes
- ▶ Usually done in the OR; Can be done under local sedation in the office
- ▶ 90% catheter free at time of procedure
- ▶ Durable – 5 year data tracks with TURP (gold standard)

Treating BPH as a Primary Care Physician

- ▶ Some guys may do well on meds; symptoms may improve
- ▶ There is NO change in the anatomic reality of this disease process with meds
- ▶ **Meds treat a local, anatomic problem with a global, physiologic solution**
- ▶ Data emerging that meds can lead to a bladder being so deconditioned that it simply wears out / “Bladder cripple”
- ▶ **A LUTS procedure treats a local anatomic problem with a local, anatomic solution**
- ▶ Early intervention prevents bladder degradation and improves overall cost (even cheap medicines)
- ▶ Do you really want to manage another medicine at your patient's yearly wellness exam? 🖥️



PSA Screening

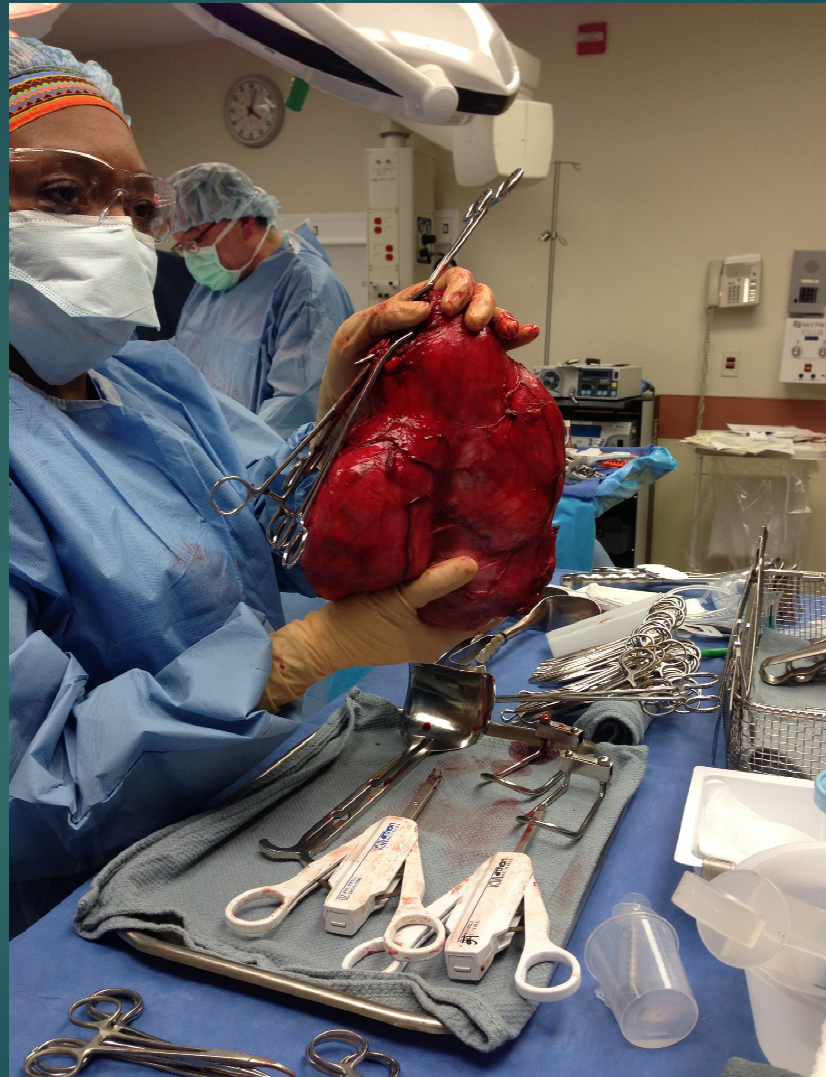
- ▶ With all of the controversy surrounding PSA screening, should I screen or should I not?



Yes.

Any Questions?





PSA and Prostate Cancer

- ▶ PSA is a serum protein – biomarker for prostate inflammation – non-specific – FDA approved 1994
- ▶ 2nd MC cause of cancer related death in the US
- ▶ 31,620 estimated deaths in 2019
- ▶ In mid 1990s, diagnoses of PCa shot up drastically
- ▶ Everyone got their prostate out in the mid 90's – mid 2000s
- ▶ Mid 2000s, things started to change
- ▶ Data came out that some prostate cancer was indolent/not aggressive
- ▶ Uncle Sam got involved to try and save money (Obamacare in 2010)
- ▶ In 2011, the USPSTF issued draft recommendations that would change the recommendation grade of PSA screening to grade D (the lowest – “no benefit”)
- ▶ May 22, 2012 – USPSTF issues grade D recommendation to PSA screening... in all age groups, all race groups, despite + family history

PSA Screening Controversy

- ▶ The Grade D recommendation became official in 2012. Data was used from the PCLO trial as well as the ERSPC trial.
- ▶ Later, the PCLO trial was found to be contaminated.
- ▶ **80% of controls without baseline screening had PSA screening during the trial. Overall 90% of “controls” reported at least 1 PSA test before or during the trial.**
- ▶ **Thus, the control arm of the trial had more “screening” than the screening arm, thus diluting the benefit seen in the screening arm**
- ▶ The ERSPC trial was later found to have a 30% reduction in the development of metastases in the screening group after data was followed for longer
- ▶ A UK study (ProTECT) found a 50% reduction in metastatic prostate cancer in the treated arm vs the surveillance arm
- ▶ PSA screening rates in some populations fell by 50%.
- ▶ Incident rates of PCa dropped from 30-40%.
- ▶ By the fall of 2013, prostate biopsies fell approximately 28% in one large community practice.
- ▶ Incident rates of distant metastases began to rise.

PSA Screening Controversy

- ▶ Over the next nearly 5 years, patients were not screened appropriately, and we are now paying for that decision. There are patients with higher grade and higher stage PCa as a direct result of this grade recommendation
- ▶ No Urologist, no radiation oncologist, nor any medical oncologist was on the panel that issued this recommendation (ironically, a biased and uneducated decision)
- ▶ Not only that, an entire “generation” of primary care physicians were trained in an era where PSA screening was not the norm. In fact, Medicare was considering making PSA screening a factor which would negatively impact a physician's reimbursement. They wisely decided against this.

PSA and Prostate Cancer

- ▶ ~~Overdetection~~ vs overtreatment – in a heavily screened population, there is a 50% reduction in PCa deaths, but many men also got treated that did not need to be.
- ▶ Thus, overtreatment is the issue, NOT over detection
- ▶ Goal is to decrease men with MFS, DSS, and QOL factors
- ▶ Swedish trial (NEJM 2019) showed OS benefit of screening at 29 yrs out
- ▶ Is there cancer we should not treat? YES!

Current USPSTF Guidelines

Population	Recommendation	Grade (What's This?)
Men aged 55 to 69 years	For men aged 55 to 69 years, the decision to undergo periodic prostate-specific antigen (PSA)-based screening for prostate cancer should be an individual one. Before deciding whether to be screened, men should have an opportunity to discuss the potential benefits and harms of screening with their clinician and to incorporate their values and preferences in the decision. Screening offers a small potential benefit of reducing the chance of death from prostate cancer in some men. However, many men will experience potential harms of screening, including false-positive results that require additional testing and possible prostate biopsy; overdiagnosis and overtreatment; and treatment complications, such as incontinence and erectile dysfunction. In determining whether this service is appropriate in individual cases, patients and clinicians should consider the balance of benefits and harms on the basis of family history, race/ethnicity, comorbid medical conditions, patient values about the benefits and harms of screening and treatment-specific outcomes, and other health needs. Clinicians should not screen men who do not express a preference for screening.	
Men 70 years and older	The USPSTF recommends against PSA-based screening for prostate cancer in men 70 years and older.	

AUA Guidelines

- ▶ 40-45yo YOU SHOULD OFFER SCREENING if higher risk (AA/significant Fam Hx, known germline mutations)
- ▶ 40-50 – you MAY BEGIN SCREENING by offering a baseline PSA screening test in men with normal/average risk
- ▶ 50-69 –you SHOULD OFFER REGULAR PSA SCREENINGS every 2-4 years
- ▶ >70 – personalize the re-screening interval/decide to discontinue screening based on patient preference/age/PSA/prostate Ca risk/life expectancy/general health, using shared-decision making
- ▶ Clinicians “ MAY” use DRE alongside PSA to establish risk of clinically significant prostate cancer

NCCN Guidelines

- ▶ **National Comprehensive Cancer Network**
- ▶ Essentially the same as AUA, except screening begins at age 45 and go to age 75
- ▶ H&P, Family Hx, race (esp AA), DRE
- ▶ If PSA is <1 and normal DRE, repeat in 2-4 year intervals
- ▶ If PSA is 1-3 and normal DRE, consider 1-2 year intervals
- ▶ If PSA is >3 or abnormal DRE, consider biopsy
- ▶ If DRE normal and PSA < 4 , 1-4 year intervals

AAFP Guidelines

- ▶ “The AAFP does not recommend routine prostate-specific antigen (PSA)-based screening for prostate cancer. For men aged 55 through 69 who are considering periodic prostate cancer screening, clinicians should discuss the risks and benefits and engage in shared decision-making that enables an informed choice.”
- ▶ “The AAFP recommends AGAINST screening for prostate cancer in men aged 70 and older.”
- ▶ Respectfully, I disagree with these guidelines, as does the AUA, the NCCN, and even the USPSTF

Who I Screen

- ▶ I follow the AUA Guidelines
- ▶ Meaningful family hx, esp if HG esp if met and death
- ▶ Genetic predisposition BRCA 1 (higher likelihood of getting cancer) and BRACA 2 (more aggressive phenotype)
- ▶ African ancestry / AA (higher incidence and death)
- ▶ Significant PSA velocity
- ▶ Men should have baseline PSA at young age 45-50, then every 1-2 years thereafter
- ▶ Have a long talk prior to screening men > 70yo, unless they are very healthy and desire screening

mpMRI and Prostate Cancer

- ▶ MRI had a 66.7% (up to 85% in some studies positive predictive value and an 85.7% negative predictive value for the subsequent diagnosis of prostate cancer on biopsy (Nam et al, J Urol 2016; 196: 361)
- ▶ NEJM – if you got an MRI, 28% fewer men needed biopsy, fewer men were diagnosed with Gleason 6, and more higher-grade cancers were found (Kasivisvanathan et al, N Engl J Med 2018; 378:1767-1777)
- ▶ The NPV of mpMRI for clinically significant Pca in biopsy-naïve men is 90.8%. That means **9.2% of men will have an MRI that misses their clinically significant prostate cancer** (Sathianathan et al, E. Urology. 2020;78(3):402-414)
- ▶ However, there is no current evidence that mpMRI should be routinely used in population-based screening for prostate cancer.
- ▶ BUT... cost! \$2500/MRI (TRUS Bx around \$650)

PCa and PSA screening

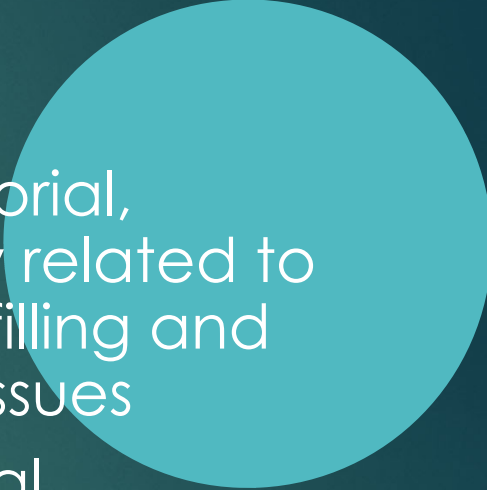
- ▶ NO data on prophylactic RALP like as with BRCA
- ▶ If the prostate was on our skin, there would be ZERO controversy over screening
- ▶ Why is prostate cancer treated differently than Colon/Breast/Skin/etc?
- ▶ **Prevention? – nothing, really...**
 - ▶ -No Vitamin E (actually **increased** risk of PCa)
 - ▶ - no selenium (no change)
 - ▶ - diet/exercise study (at UCSD), no change in biopsy-based outcomes
- ▶ RE-CHECK LEVELS!!! 1-3 months – horseback riding, ATV, motorcycle, bicycle, lawnmower, tractor, SEX/EJACULATION

PSA Screening

- ▶ When in doubt, just ask! 🖥️
- ▶ Send the patient to the urologist and let us counsel on the risks and benefits of PSA screening
- ▶ Please consider following the advice of specialty societies, as they can wade through the nuances of difficult decisions such as this.

Urinary Incontinence



- Usually related to an anatomic deficiency with the outlet or sphincter
 - Behavioral and surgical solutions
 - Stress / Urge/Overflow
- 
- Can be multifactorial, generally related to bladder filling and storage issues
 - Behavioral, medical, and surgical solutions

Stress Urinary Incontinence (SUI)

- ▶ Involuntary loss of urine from sudden increased abdominal pressures (laugh/cough)
- ▶ Can be from overflow/retention, detrusor overactivity, ISD, urethral hypermobility, POP
- ▶ Risk factors – **obesity**, **gender (F>>M)**, pregnancy, Fam Hx, Race (W>H or AA), **smoking**, **physical activity**

Stress Urinary Incontinence (SUI)

- ▶ Workup – H&P, UA, PVR, voiding diary, cysto, q-tip / cough test, urodynamics
- ▶ Treatment – behavioral medication, MIS (urethral bulking), sling procedures (MUS, TOT, RP slings (mesh or autologous), pessaries, catheter
- ▶ Outcomes – improvement in 50-60%, completely dry 30-40% with bulking
- ▶ Sling – 73-85% chance of completely dry

Urge Urinary Incontinence

- ▶ Generally, synonymous with overactive bladder/OAB
- ▶ OAB- “urinary urgency, usually accompanied by frequency and nocturia, with or without urge incontinence, in the absence of UTI or other obvious pathology”
- ▶ Leakage because of detrusor instability and complicated by bladder volume

Urge Urinary Incontinence (UUI)



- ▶ 15-30% of community dwelling persons 65 years and older.
 - ▶ F>M until age 80 years, then M=F
 - ▶ Up to 50% in long term care setting
- 

UUI Treatment

- ▶ **1st Line** – behavioral, conservative measures, **PFPT**
- ▶ **2nd line** – anticholinergics and/or **BETA 3 AGONISTS**
- ▶ **(β -3 agonists – Mirabegron and Virbegron)**
- ▶ -caution in elderly/AMS/constipation with anticholinergics (Oxybutinin/Solifenacin/Fesoterodine/Darifenacin/ Tolteridine)
- ▶ **3rd line** – onabotulinum toxin A or neuromodulation (sacral or tibial n.)

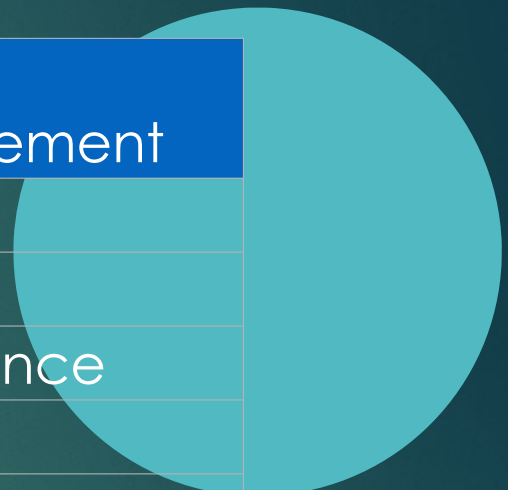
Renal Cysts

- ▶ Simple vs Complex (Simple cysts are the most common renal lesion)
- ▶ Bosniak Classification – determines simple vs complex (graded by CT only)
- ▶ Simple – HU 0-20. if > 20, consider Renal US to eval solid vs cystic
- ▶ **Simple cysts do not enhance** with contrast
- ▶ Complex renal cysts – need to be evaluated by CT with IV contrast
 - ▶ High density fluid, calcification, septation, solid component, enhancement w/ contrast

Bosniak Classification

- ▶ **1** - simple cysts – thin walls, water density – MC type of cyst
- ▶ **2** – no enhancement, smooth thin wall, but may have hairline septa, or small calcification or if cyst has uniform high attenuation (HU >20)
- ▶ **2F**- multiple hairline septa, more thickened wall
- ▶ **3** – thick, irregular septa or cyst wall w/ enhancement
- ▶ **4** – contain solid tissue components adjacent to but independent of cyst wall/septa; enhance internally

Bosniak Classification



Bosniak Category	Chance of Malignancy	Usual Management
I	Extremely rare	none
II	Very rare	none
IIF	10%	surveillance
III	50-60%	surgery
IV	90%	surgery

Testosterone Replacement Therapy

- ▶ TRT - somewhat controversial - but shouldn't be!
- ▶ If done right, TRT is beneficial and safe
- ▶ If done wrong, TRT can be dangerous

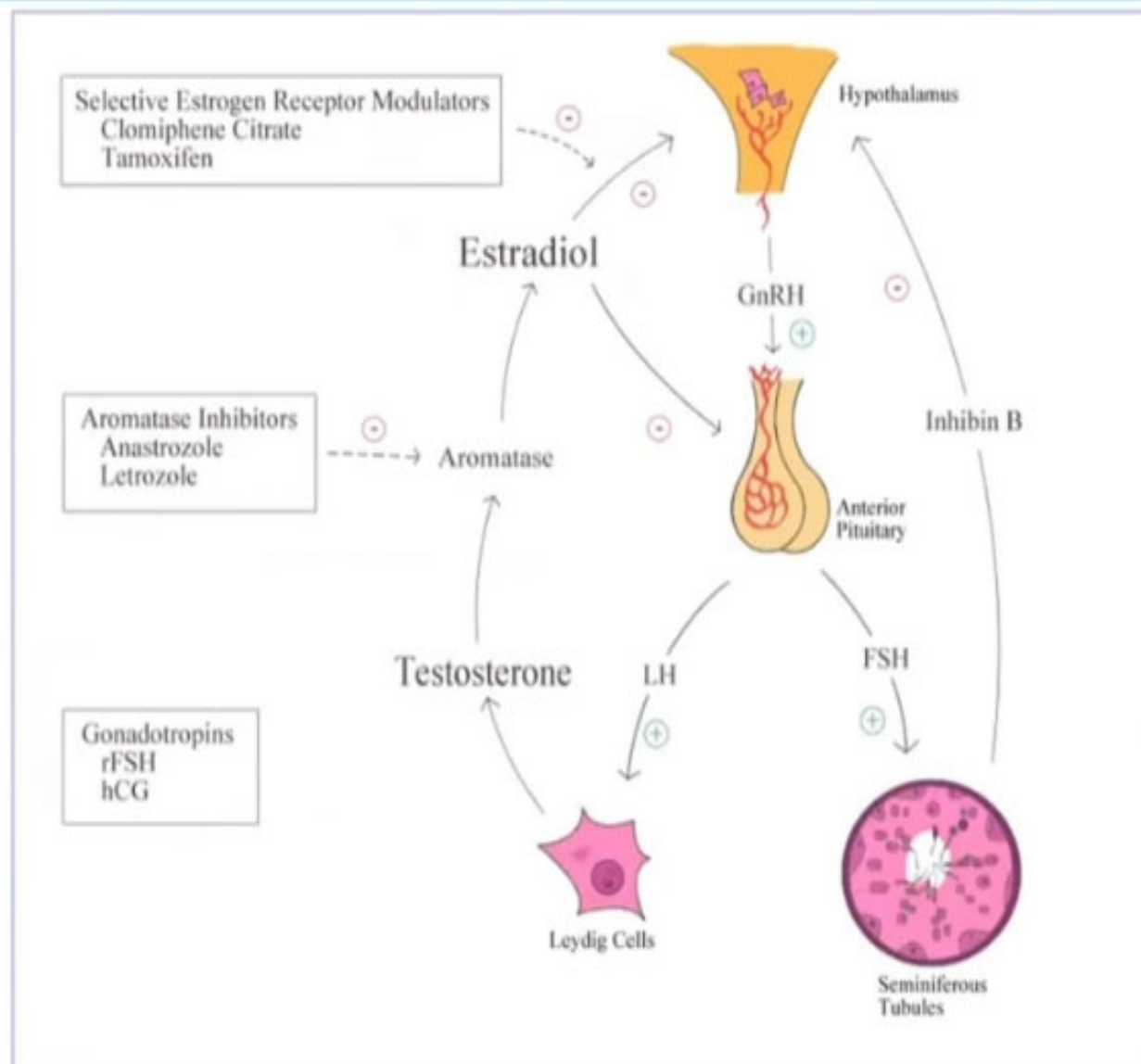


Definition of TD

- Clinical diagnosis of low testosterone

Low T levels AND symptoms/signs

More Specific	Less Specific
Low libido	Decreased energy
Gynecomastia	Depressed mood
Testicular shrinkage	Decreased concentration
Decreased bone density	Increased fat mass



Evaluation of TD

- ▶ Must have **2 (two) separate levels** drawn showing deficiency (< 300 ng/mL) – EARLY MORNING DRAW - 8:00AM
- ▶ Consider a free T level if levels are borderline low or there are altered SHBG levels (low levels mean higher free T, high levels mean low free T)
- ▶ If TT low, measure LH
- ▶ If LH is low/low-normal, measure Prolactin
- ▶ Estradiol if breast symptoms/gynecomastia

Contraindications to TRT

▶ **ABSOLUTE CI**

- Prostate Ca (untreated), breast Ca
- Hematocrit > 50%
- Untreated OSA
- Uncontrolled Heart Failure

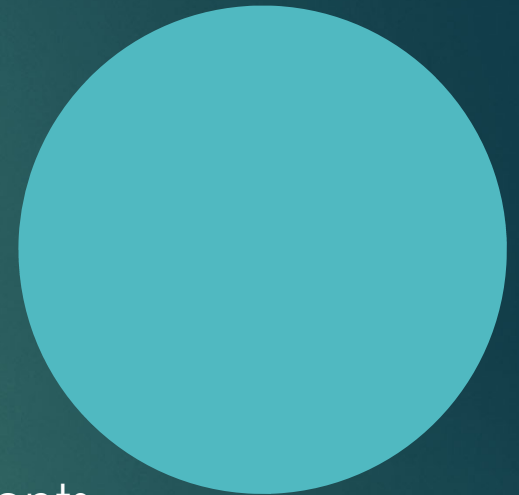
▶ Relative CI

- Elevated PSA (needs workup prior to initiation)
- Desire for fertility



Formulations of TRT

- ▶ Intramuscular Injections
 - ▶ Transdermal gels/patches
 - ▶ Buccal / Oral???
 - ▶ Intranasal
 - ▶ Subcutaneous pellets
-
- ▶ Individualize the choice of formulation to your patients



SE of TRT

- ▶ Testicular atrophy
- ▶ Infertility (up to 2 years or more)
- ▶ Mood changes (aggression)
- ▶ Erythrocytosis (Hct > 51)
- ▶ Gynecomastia (altered T:E ratio)
- ▶ Worsened OSA



Monitoring on TRT

- ▶ Reassess symptoms and levels regularly –
Goal is 450-600 (ng/dL) and improvement of symptoms
– ALARA principle

3-6 months – T/Free T/Hct/PSA/AUA/IPSS Score

12 months – above + lipid profile/DRE

Alternatives to TRT to raise T



- ▶ In younger men with real TD, consider alternatives to exogenous testosterone to preserve fertility
- ▶ Clomiphene, hCG (1500 IU IM/weekly)
- ▶ Endocrinology evaluation

When to Refer to Urology

- ▶ Hematuria
 - ▶ Persistent/worsening ED
 - ▶ Retention / BPH – even before meds?
 - ▶ Hydronephrosis / Stones
 - ▶ Incontinence
 - ▶ Persistent Dysuria – check STD panel prior to
 - ▶ Elevated PSA
-
- ▶ POP
 - ▶ OAB
 - ▶ GU emergencies
 - ▶ Low T
 - ▶ Renal cysts



Questions?



Questions?



References

- ▶ Weider, JA, *Pocket Guide to Urology*”
- ▶ *AUA Guidelines*, American Urological Association, www.auanet.org