GU for the Non GURu

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OVERVIEW

- Breakdown for each GU site
  - Findings on imaging
  - Patient reporting of symptom
  - Abnormal lab findings
  - What to order and why
  - When to refer
- Brief highlight of GU cancers
Genitourinary Oncology at MCC

- Located on the 1st floor at MCB behind gold valet.
- 9 GU surgeons
- 4 GU medical oncologist (plus coverage by med/onc at MIP and WC by two med/oncs)
- 12 APP’s
  - Mix of clinic and inpatient
- RN’s
- MA’s
- Administrative support staff
- Records collection team
- Nurse Navigator
  - For prostate and bladder only (specific patient population)
- Schedulers
  - Both appointment and surgery
56 y/o female seen in the cutaneous clinic for melanoma. PET CT with lesion noted on right kidney, SUV 4.2.

A. Refer to GU
B. Refer to GU and order CT 3phase renal protocol
C. MRI abdomen w/wo
D. Follow with repeat scan at normal staging interval
What’s on that kidney?

You ordered a scan to follow something on your patient…..and now you have noted a finding on the kidney. What is it? Do you need to worry? Order another test? Refer?

- Kidney lesions can be benign or concerning for malignancy. The most common findings on imaging include simple cyst, complex cyst or solid lesions.

- **Simple Cyst**
  - Very common. These are usually classified as a simple cyst or Bosniak I cyst.
  - If the imaging does not confirm simple cyst or give a Bosniak I score, you can order a renal US for confirmation.
  - These are not concerning and can followed by their local primary with a yearly renal US.

- **Complex Cyst**
  - These are cysts that do contain a water component with some solid tissue. The reports might mention septations, calcification, hemorrhagic cyst. There also might be Bosniak classification associated with it, such as Bosniak II, II, III or IV.
  - If outside scan and no Bosniak classification assigned, you can order a radiology review for confirmation.
  - Depending on type of imaging you ordered for your follow up, you can order a CT 3 phase renal protocol. If not able to get a CT scan for contrast allergy, can order MRI abdomen with comment “renal protocol”.
  - Refer to urology for follow up and review of imaging.

- **Solid Lesion/Mass/Nodule**
  - These are usually read out as an enhancing mass, with a houndstooth scoring. Depending on the imaging you ordered, you can order CT 3 phase and or MRI abdomen “renal protocol” and chest x-ray, BMP and refer to urology.
What’s up with that Drain Tube?

Ureteral dilation, hydronephrosis, hydroureronephrosis, nephrolithiasis, pyelonephritis, stranding, filling defect…..UGG what does all this mean to me?

– Hydronephrosis
  • Swelling of the kidney. Can be r/t intrinsic dysfunction (CKD) or obstruction.
  • If notes obstruction on the report, order CT Urogram refer to GU.
  • If Cr rising, and scan with obstruction, might need nephrostomy tube placement or ureteral stent. Can send to UC for evaluation and possible intervention more timely.
  • If non obstructive refer to GU

– Hydroureteronephrosis
  • Swelling of the ureter and kidney. Same as above

– Nephrolithiasis
  • Kidney stones. Can be obstructive or non obstructive. If there is an obstructive stone, and the patients Cr is elevated above baseline, they could require a ureteral stent or nephrostomy tube. This could require a UC visit. If non obstructive, we usually refer to local urologist or USF.

– Pyelonephritis/stranding
  • Can be nonspecific but can also be r/t swelling of the fat around the kidneys, which can be directly r/t to acute pyelonephritis. Order urine culture. Can treat for active infection and repeat a scan in approx. 1 month for resolution.

– Filling defect/obstruction
  • Depending on the type of scan you ordered, recommend a CT Urogram for improved visualization of the upper tract. Refer to GU for further evaluation. NOTE: If acute and Cr rising, needs UC evaluation for possible nephrostomy tube placement.
The Saga of the Thickened Bladder Wall

Reading through your scan, everything is looking good…wait, no…thickened bladder wall? Possible cystitis? What do I do with this?

- Thickened bladder wall can be caused by frequent UTI’s, previous bladder treatment such as pelvic radiation, or history of incomplete bladder emptying to name a few.

- Cystitis is caused by prolonged inflammation of the bladder, again from chronic UTI’s, treatment with chemotherapy, and previous pelvic radiation.

- If the scan has a focal area of thickening, that should be evaluated with a CT Urogram and referral to GU.

- Not all thickened bladder wall findings on CT need to have a cystoscopy for further evaluation. If they have any risk factors for bladder cancer, such as smoking history, hematuria or frequent UTI’s, then CT Urogram and referral to GU may be warranted.

Yup…that’ a real mass.

You obtain a scan for your follow up and it notes a mass in the bladder. Now what?

– A mass seen in the bladder on imaging if often real and needs further work up.
  • Depending on the type of scan you ordered, a CT Urogram is the optimal scan for further evaluation of the upper tract (renal pelvis and ureters) and the lower tract (bladder and urethra).
  • Other helpful orders; chest x-ray 2 views and a recent BMP to access Cr
  • When we see patients with discrete tumor on imaging, most surgeons will book a procedure in the OR for evaluation. Some do like to assess bladder in the clinic setting first. Below are the two types of procedures to assess the bladder.

– Cystoscopy
  • A scope through the urethra, usually in a clinic setting to evaluate the bladder and assess for any tumors or red areas of concern. The patient is awake for this quick procedure with local lidocaine used to help numb the urethra.

– Transurethral resection of bladder tumor (TURBT)
  • A procedure in the OR, to evaluate the bladder and take biopsies of the areas of concern. The surgeon normally tries to clear out as much tumor as possible during this procedure. There are times, when the bladder is evaluated and diffuse tumor is noted, may require repeat procedure or alternate discussion such as bladder removal.
You have blood where?

Your patient told you “I saw blood in my urine”, “My urine was dark, I think it was blood”, I had a test by my PCP and they told me I have “blood in my urine”….now what?

– **Visible blood reported**
  - Gross hematuria can come from the upper tract urinary system, the bladder or prostate.
  - If the patient saw blood with a reported UTI – this is not uncommon. Need a UA with microanalysis after UTI resolved.
  - If gross hematuria reported without associated UTI – need a hematuria work up, which includes a CT Urogram and referral to urology.
  - Other helpful test; chest x-ray 2 views and recent BMP (to check Cr)

– **Reports of “dark urine”**
  - Often seen in people with CKD
  - Seen in people with low fluid intake r/t concentrated urine
  - Recommend to increase water intake and order a UA with microanalysis. If positive for RBC >3, order repeat UA with microanalysis. If confirms RBC >3 x 2 UA’s, order CT Urogram and BMP, and refer to urology.

– **My provider told me I have blood in my urine**
  - This is considered microscopic hematuria and is common for a variety of reasons.
  - Order UA with microanalysis. If positive for RBC >3, order repeat UA in another 1-4 weeks. If confirms RBC >3, order CT U and BMP, and refer to urologist.
Case Study

- 51 y/o AA male being seen in GI for rectal pain. He advised never had a PSA checked, as he has been uninsured. Denies family hx of prostate cancer.

- PSA from that day’s visit returned with result of 5.7dl/ml.

  - A. Refer to GU
  - B. Refer to GU and MRI prostate
  - C. Repeat PSA
  - D. no f/u indicated
  - E. both A and C
Prostate said “WHAT”? 

- Elevated PSA
  - There are guidelines for age appropriate ranges. Looking at PSA results vs trends over time is important. When evaluated for elevated PSA’s, there is a risk calculator that can also score for recommendations to proceed with MRI or biopsy.
    - 40 - 49 0 - 2.5
    - 50 - 59 0 - 3.5
    - 60 - 69 0 - 4.5
    - 70 - 79 0 - 6.5
  - Confirm the patient has not had recent sexual activity, recent Foley placement or self catherization, riding motorcycle or bicycles. If they do report any of these activities, have them avoid those activates for 4-7 days and repeat PSA.
    - When ordering a PSA without a diagnosis of prostate cancer, order a PSA screen with reflex free PSA.

- Enlarged Prostate on Scan
  - Prostate enlargement is common on scan and has no relationship to diagnosis of prostate cancer.
  - As a man ages, his prostate can enlarge. This can also cause c/o various urinary symptoms.
  - A baseline PSA can be obtained if age appropriate and the patient agrees.
  - If elevated for the patient based on history, you can refer to a urology for further evaluation.

- PET CT
  - It is very common on PET CT for the report to note uptake in the prostate. PET CT is not sensitive for changes within the prostate and findings are unclear.
    - If have findings on PET CT – they do need work up. Order an MRI prostate and PSA screen/free PSA and refer to urology for f/u on results.
    - Of note, MRI prostates are not read same day. These need to be done the week prior to their appointment with GU. You can go ahead and order the PSA same day as the MRI. The GU schedulers are familiar with scheduling these tests.
Patient reports testis pain, scrotal discomfort, scrotal swelling, feeling a lump etc.

- You can have a variety of complaints r/t to the testis. Men can express pain and or swelling in the scrotum/testis, this can be common after a recent abdominal surgery. Feeling of pressure or fullness.
  - Generalized scrotal edema after recent surgery. Have them wear suppurative underwear, can use ice and elevate scrotum with a towel or small pillow while sitting. This is usually self limiting and resolves.

- Reports feels a mass or firm/hard area. Can also report non tender or tenderness.
  - Hydrocele – fluid that collects in the scrotum. Can be caused by injury or inflammation.
  - Epididymis – inflammation in the coiled tube that connects the testicle to the vas deferens
  - Solid mass - often hard, non mobile. Can report pain or painless
  - You can order a testicular US for further evaluation.
    » If hydrocele – recommended wearing supportive underwear. These are be drained, but they often reaccumulate.
    » If epididymitis – can treat with antibiotics, usually Ciprofloxacin or Bactrim. Usually require 2 weeks of treatment and repeat testicular US.
    » If confirms solid mass – order chest x-ray, CT A/P and tumor markers, to include Alpha Fetal Protein (AFP), Beta HCG (non pregnancy) and LDH. Refer to GU.
Aw, snap…is that supposed to be there?

- Patients can report areas of concern on the penis, often using words such as;
  
  - Spots - can be flesh colored, red
  - Red Area - usually report this as a flat red spot
  - Hard Area – states feel a hard area under the skin
  - Have these growths – can report multiple “growths”, can be viral warts, penile cancer lesions

- Patients can also report they saw a local physician and underwent a biopsy and/or prescribed topical medication to treat the area of concern. These patients should be referred to a GU surgeon who specialized in penile cancer for further evaluation. report areas of concern on the penis, often using words such as;
GU Cancer’s

- Brief highlight of GU cancers
Kidney Cancer

- Risk factors for Renal Cell Carcinoma can include:
  - Smoking history, obesity, high blood pressure, family history, toxin exposures, certain medications, CKD

- Kidney cancer – aka Renal Cell Carcinoma (RCC) is a cancer that begins in the renal tissue.
- These tumors usually grown into the kidney and/or extend outside of the kidney, but remain attached.
- The most common form of RCC is clear cell carcinoma. Other common types are papillary renal cell, chromophobe carcinoma
- Less common and carry more high-risk features are; Rhabdoid carcinoma, neuroendocrine,
- Other cancers can also metastasize to the kidney. These usually have unique features on imaging.

Resources
- KidneyCancer.Org
- Jnfkidneycancer.org
- Cancer.org
Urothelial Carcinoma
Ureter, bladder and urethra

- The lining that carries urine from the kidney to the bladder, the bladder lining and urethra are urothelial.

- Bladder cancer is the 4th most common cancer in men, less in women.
- Most bladder cancers are diagnosed in a patient greater than age 55
- Risk factors for urothelial carcinoma can include:
  - Smoking history, toxin exposures, certain medications or herbal supplements, arsenic in drinking water, Lynch Syndrome.

- Most common are urothelial carcinoma or carcinoma in situ. Other types of bladder cancer, considered high risk are squamous cell carcinoma, adenocarcinoma, small cell neuroendocrine and sarcoma.

- Bladder cancers are staged and graded.
  - Stage is how fall into the lining of the bladder wall the cancer has penetrated
  - Grade is how aggressive the cell looks under the microscope to the pathologist.

- Bladder cancers in the muscle wall are usually treated with/without chemotherapy followed by bladder removal, or radiation/chemotherapy.

- Reference
  - cancer.org/cancer/bladder-cancer
Urothelial Carcinoma
Ureter, bladder and urethra

- Bladder cancers that are not invasive are usually treated with medication placed into the bladder, such as intravesical BCG or intravesical chemotherapy.

- Bladder cancers that fail intravesical treatments are often recommended for bladder removal.

- **Upper tract disease** –
  - Any tumor that develops in renal pelvis and/or ureter is considered “upper tract” disease.
  - These are often seen on imaging as a filling defect or actual tumor.
  - Assessment is done in the OR with a ureteroscope and biopsy if possible.
  - Depending on location – can be treated with ureterectomy with reimplantation into the bladder OR nephroureterectomy.

- **Lower tract disease** –
  - Tumors that develop in the lower part (distal) ureter, bladder or urethra
  - Assessment with cystoscopy in clinic or TURBT in the OR

**Interesting fact** – drinking adequate amounts of water can help reduce risks of bladder cancer, as thoughts are flushed more often and reduces the amount of time toxins remain the bladder.

- Reference
  - cancer.org/cancer/bladder-cancer

Resources
- BCAN. Org
- Cancer.org
Prostate Cancer

- Most common cancer diagnosed in men/after skin cancer

- Risk factors
  - Age – as a man ages, his chance of developing prostate cancer increased
  - Geography – North America, Caribbean Islands, Australia, Northwestern Europe
  - Race – AA men and Caribbean men of African Decent
  - Family history – strong family history of prostate cancer
  - Genetic link – BRACA 1 and BRACA 2 breast and ovarian can have a link to prostate
  - Lynch Syndrome

- Prevention
  - No known prevention, but healthy living, avoiding obesity are important risk reduction factors. There are some studies that suggest men who consume high volumes of dairy and/or calcium supplements could be at higher risk.

- Early Detection
  - The goal is early detection of treatable prostate cancer. Following with guideline for routine PSA screening. Earlier screening if you have any risk factors for development of prostate cancer.

- Reference
  - cancer.org/cancer/prostate-cancer
Testis Cancer

- Not a common cancer. Predictions are for >9000 new cases each year

- Risk factors
  • Undecended testicle at birth

- Prevention
  • No known prevention, however, early detection through self testicular exams can catch early stage disease.

  • Reference
    – cancer.org/cancer/testicular-cancer
Penile Cancer

- Rare cancer. Accounts for fewer than 1% of cancer in the United States
- It is more common in Asia, Africa and South America
- Statistics show approx. 2200 new cases each year

- Risk factors
  - Human papillomavirus infection
  - Being uncircumcised
  - Uncircumcised with conditions, such as Phimosis and smegma
  - Age – avg age is 68 with most diagnosed over age 55
  - AIDS
  - Smoking
  - UV light treatment for skin conditions, such as psoriasis

- Prevention
  - Circumcision lower the risk of development of penile cancer
  - Genital hygiene
  - Smoking cessation

- Reference
  - cancer.org/cancer/penile-cancer
GU Follow UP

- Renal lesion
  - CT 3phase, BMP

- Microscopic hematuria
  - UA with microanalysis. If RBC > 3 needs repeat in the next 4 weeks. If RBC > 3, needs CT Urogram, BMP and referral to GU

- Gross hematuria
  - CT Urogram, Chest x-ray and BMP and referral to GU

- Bladder tumor on imaging
  - CT Urogram, Chest x-ray and BMP and referral to GU

- Testicular mass on exam or reported
  - Testicular ultrasound, if positive for mass concerning for testis cancer, chest x-ray, CT A/P, BHCG, AFP and LDH and referral to GU

- Penile lesion
  - Needs referred to GU. If had a biopsy outside proving penile cancer, CT pelvis then referral to GU