Cancer Day for Primary Care

Topic: Renal, urothelial and bladder cancers

Presenter: Juliano Offerni, MD, DRCPSC
Assistant Professor, Department of Surgery
Urology
Kidney Transplant Surgeon

Date: May 31, 2024

Presenter Disclosure

- **Faculty / Speaker's name:** Juliano Offerni, MD

- **Relationships with commercial interests:**

  - None

Learning Objectives

1. **Objective:** Identify the most common kidney, urothelial and bladder cancer presentation.

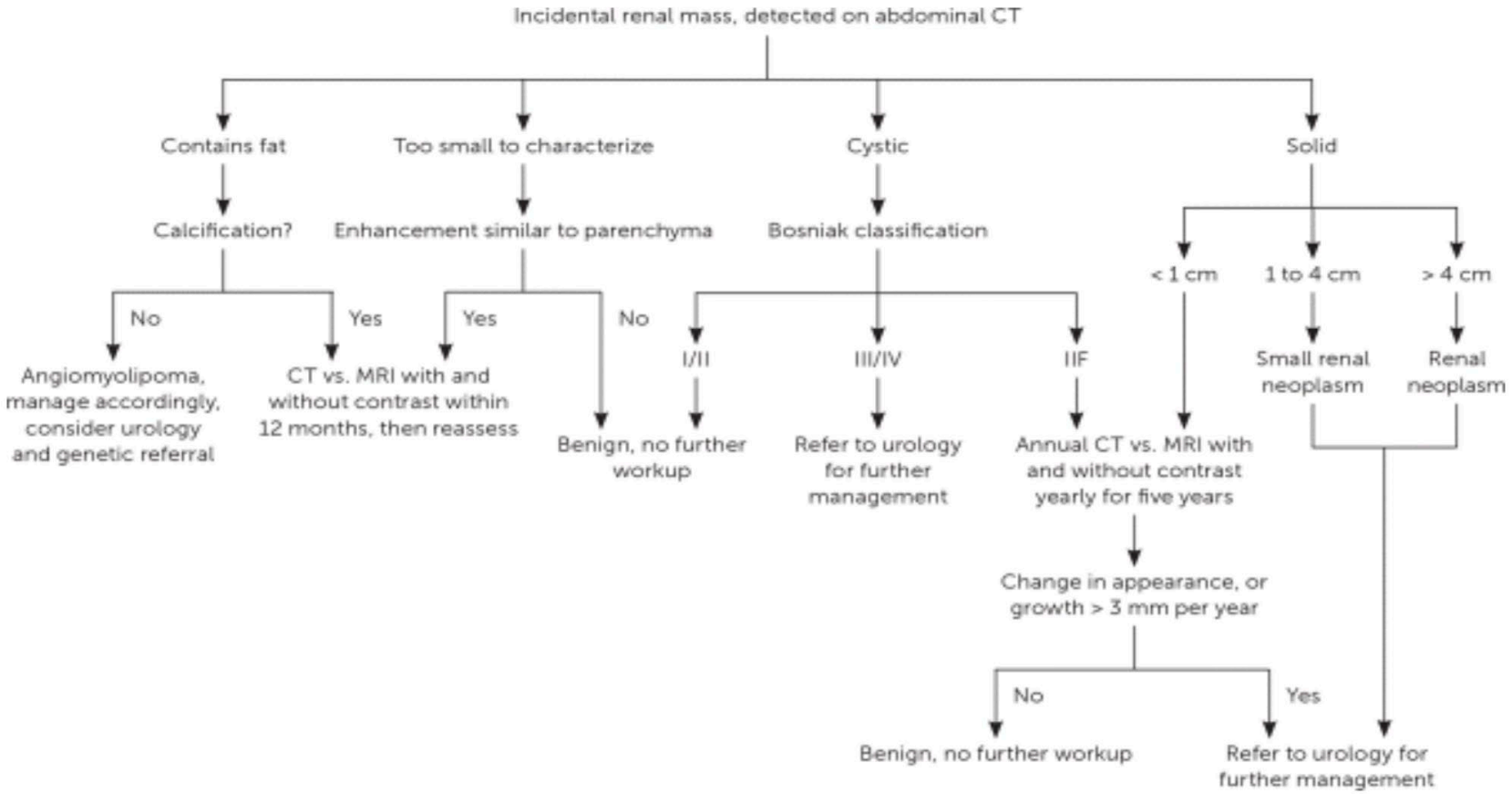
2. **Objective:** Identify who should be investigated

3. **Objective:** Establish a balance between the benefit of cancer detection and the potential physical and financial harm to the patient from unnecessary testing

Kidney Cancer

1. Over 50% of patients are asymptomatic.
2. Stratifying risk - microscopic hematuria.
3. Triad of gross hematuria, flank pain, and palpable abdominal mass.
4. The median age at diagnosis is 64 years old.
5. 10–30% of these SRMs are benign.
6. Patients diagnosed with a SRM should undergo routine laboratory investigations.
7. SRM incidentally discovered on routine imaging – US.
8. A baseline chest X-ray is suggested.

FIGURE 2.



Management of incidentally discovered renal masses.

CT = computed tomography; MRI = magnetic resonance imaging.

Am Fam Physician. 2019;99(3):179-184

Urothelial carcinoma- Upper tract and Bladder

- Microscopic hematuria

Table 4: AUA Microhematuria Risk Stratification System

Low (patient meets all criteria)	Intermediate (patients meets any one of these criteria)	High (patients meets any one of these criteria)
• Women age <50 years; Men age <40 years • Never smoker or <10 pack years • 3-10 RBC/HPF on a single urinalysis • No risk factors for urothelial cancer (see Table 3)	• Women age 50-59 years; Men age 40-59 years • 10-30 pack years • 11-25 RBC/HPF on a single urinalysis • Low-risk patient with no prior evaluation and 3-10 RBC/HPF on repeat urinalysis • Additional Risk factors for urothelial cancer (see Table 3)	• Women or Men age ≥60 years • >30 pack years • >25 RBC/HPF on a single urinalysis • History of gross hematuria

Urothelial carcinoma- Upper tract

1. 5–10% of diagnosed urothelial cancer.
2. Most patients who present with UTUCs- invasive disease
3. Bladder cancer is at risk of developing upper tract urothelial carcinoma.
4. Carcinoma in situ (CIS)- the risk of UTUC recurrence (2 to 4 times).
5. Smoking - risk factor (2-7 times).
6. There are no universal screening guidelines.
7. Gross or microscopic hematuria - most prevalent presenting symptoms.
8. Systemic symptoms in individuals with suspected UTUC.
9. CT urography. MRI urography is useful when CT is contraindicated.
10. Suspicion of UTUC - cystoscopy and cross-sectional imaging
11. Cytology
12. Laboratory Testing: creatinine, eGFR, liver function, alkaline phosphatase, and culture.
13. Imaging: Chest x-ray or CT
    Bone scans

Urothelial carcinoma- Upper tract

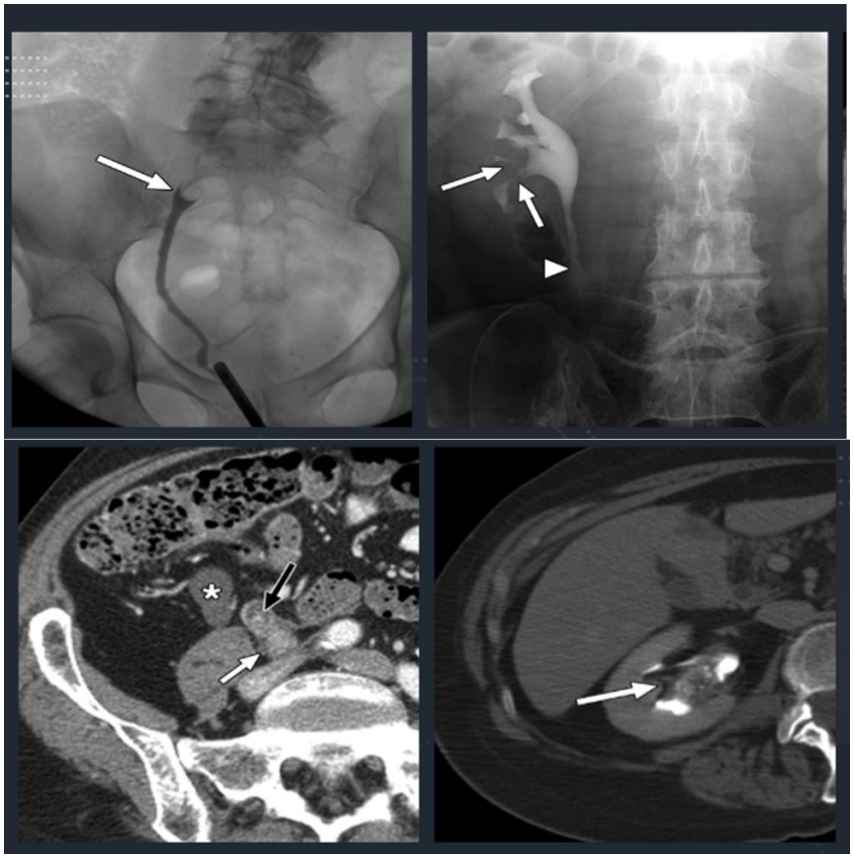


Figure 5: Radiograph and CT depiction of 'filling defects'.
Source: https://ajronline.org/doi/full/10.2214/ajr.09.2577

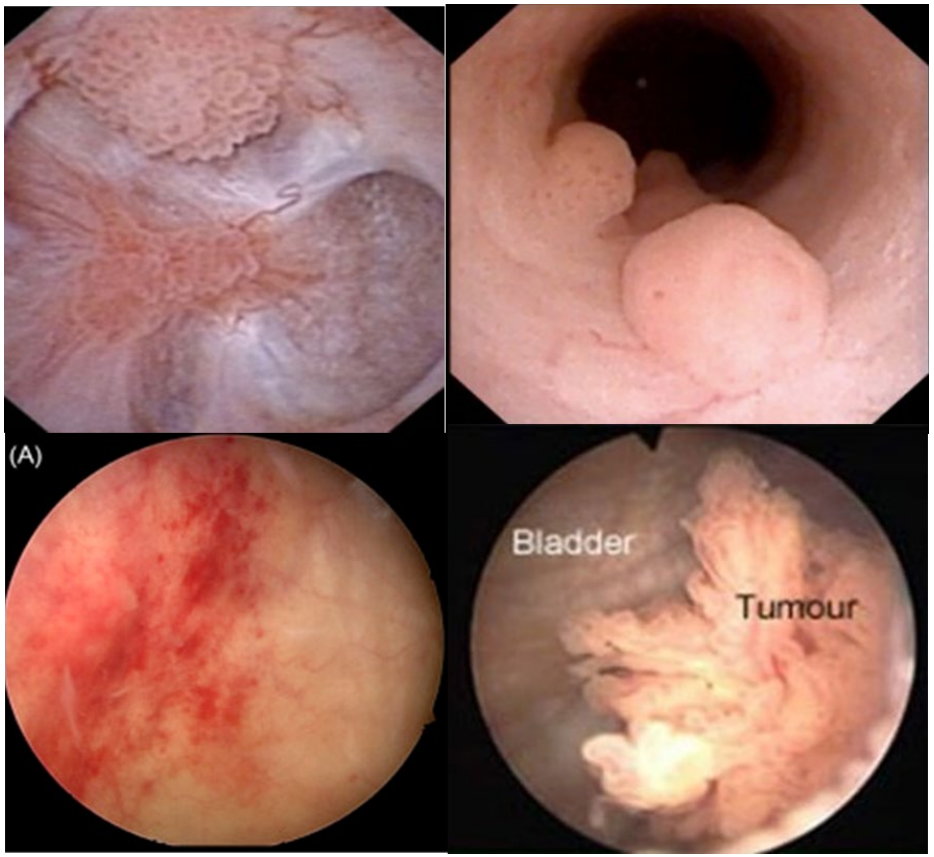


Figure 3: *Various urothelial carcinoma presentations. These images provide valuable insights into different manifestations of urothelial carcinoma.*

Urothelial carcinoma- Bladder

1. Bladder cancer is the fifth most common cancer worldwide.
2. Usually, it is diagnosed at a late age.
3. 75% of all bladder tumours are diagnosed at early stages.
4. Risk factors
   - Former or current tobacco smoking.
   - Carcinogens- rubber, plastic, and dye (aromatic amine and aromatic hydrocarbons)
   - Sex- risk factor.
   - Previous pelvic irradiation for other cancers.
   - Chronic inflammation of the bladder mucosa
5. Common presenting symptom: painless hematuria (gross or microscopic).
6. Irritative voiding symptoms.
7. Urinary cytology (voided or barbotage) may be used in surveillance
8. Ultrasound's historical, sensitivity and specificity, detecting 91% and 79.3%, respectively, with an overall accuracy of 88%.
9. Cross-sectional imaging- initial workup of bladder cancer

Urothelial carcinoma- Bladder

TABLE 5: AUA Risk Stratification for NMIBC		
Low Risk	**Intermediate Risk**	**High Risk**
LG[a] solitary Ta ≤ 3cm	Recurrence within 1 year, LG Ta	HG T1
PUNLMP[b]	Solitary LG Ta > 3cm	Any recurrent, HG Ta
	LG Ta, multifocal	HG Ta, >3cm (or multifocal)
	HG[c] Ta, ≤ 3cm	Any CIS[d]
	LG T1	Any BCG failure in HG patient
		Any variant histology
		Any LVI[e]
		Any HG prostatic urethral involvement

[a]LG = low grade; [b]PUNLMP = papillary urothelial neoplasm of low malignant potential; [c]HG = high grade; [d]CIS=carcinoma *in situ*; [e]LVI = lymphovascular invasion

Barriers to Change

"For urothelial carcinoma, the time of onset of symptoms and the diagnosis might change the outcomes on high-grade disease."

"Having a good understanding of the disease and access to a rapid treatment might be a pursued path to improve care."

Take home message(s)

. Microscopic hematuria and gross hematuria are the most common symptoms that overlap all the pathologies discussed in this lecture.

. Following the guidelines may mitigate the cost of the care, avoiding additional investigations and unnecessary treatment.

References

- Renal Cell Carcinoma: Diagnosis and Management, *Am Fam Physician.* 2019;99(3):179-184
- Richard PO, Violette PD, Bhindi B, et al. Canadian Urological Association guideline: Management of small renal masses – Full-text. *Can Urol Assoc J* 2022;16(2):E61-75. http://dx.doi.org/10.5489/cuaj.7763
- Campell SC, Clark PE, Chang SS et al: Renal Mass and Localized Renal Cancer: Evaluation, Management, and Follow-Up: AUA Guideline Part I. J Urol 2021; 206: 199.
- Coleman JA, Clark PE, Bixler BR, et al. Diagnosis and management of non-metastatic upper tract urothelial carcinoma: AUA/SUO guideline. J Urol. 2023;209(6):1071-1081.
- Bhindi B, Kool R, Kulkarni GS, et al. Canadian Urological Association guideline on the management of non-muscle-invasive bladder cancer – Full-text. Can Urol Assoc J 2021;15(8):E424-57. http://dx.doi.org/10.5489/cuaj.7367