

AMSER Case of the Month

June 2022

65-year-old male with new-onset hematuria and a
3-day history of chills and general malaise

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Patient Presentation

HPI: 65yo man presents with hematuria, chills, and general malaise for 3 days

PMH: Bladder cancer in 2018 status post-cystoprostatectomy with neo (ileal) bladder formation, right nephroureterectomy, and left ureteral implant; kidney stones; recurrent UTIs

Meds: Aspirin; Melatonin; Colace; Oxycodone prn; Alteplase; Levothyroxine

Allergies: iodine-based contrast media; influenza vaccine; latex

Vitals: T 37.6 C; BP 104/58; HR 79; RR 25; SpO2 95%

Physical Exam: Pleasant-appearing man who is alert and cooperative with soft, non-tender abdominal scars and a urostomy bag with cloudy urine on the right side, lungs clear bilaterally, cardiac rhythm with normal S1/S2 without murmurs, and extremities without cyanosis, clubbing, or edema.

Pertinent Labs

Basic Metabolic Panel:

BUN – 56

Cr – 3.02

CBC w/ Diff:

Hgb – 9.8 (w/ MCV 90.9)

WBC – 18.4 (Neu 88.5%; Lym 5.3%)

Urinalysis:

Protein – 100

Leukocyte esterase, Nitrites – positive

RBC – 81

WBC – >100

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

Variant 1: Renal failure. Acute kidney injury (AKI), unspecified. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
US kidneys retroperitoneal	Usually Appropriate	0
US duplex Doppler kidneys retroperitoneal	May Be Appropriate	0
CT abdomen and pelvis without IV contrast	May Be Appropriate	⚠⚠⚠⚠
MAG3 renal scan	May Be Appropriate	⚠⚠⚠
MRA abdomen without IV contrast	May Be Appropriate	0
MRI abdomen and pelvis without IV contrast	May Be Appropriate	0
MRI abdomen without IV contrast	May Be Appropriate	0

This imaging modality was ordered by the admitting medicine service

Findings: (unlabeled)

Abd Gen
C5-1
23Hz
RS

2D
54%
Dyn R 55
P Low
HGen



Long Left Kidney LAT - MED

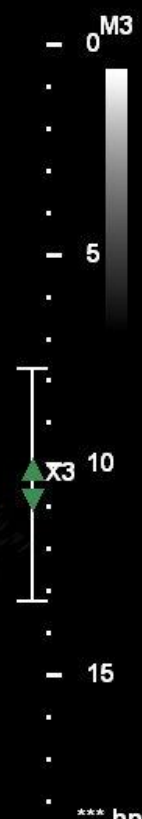
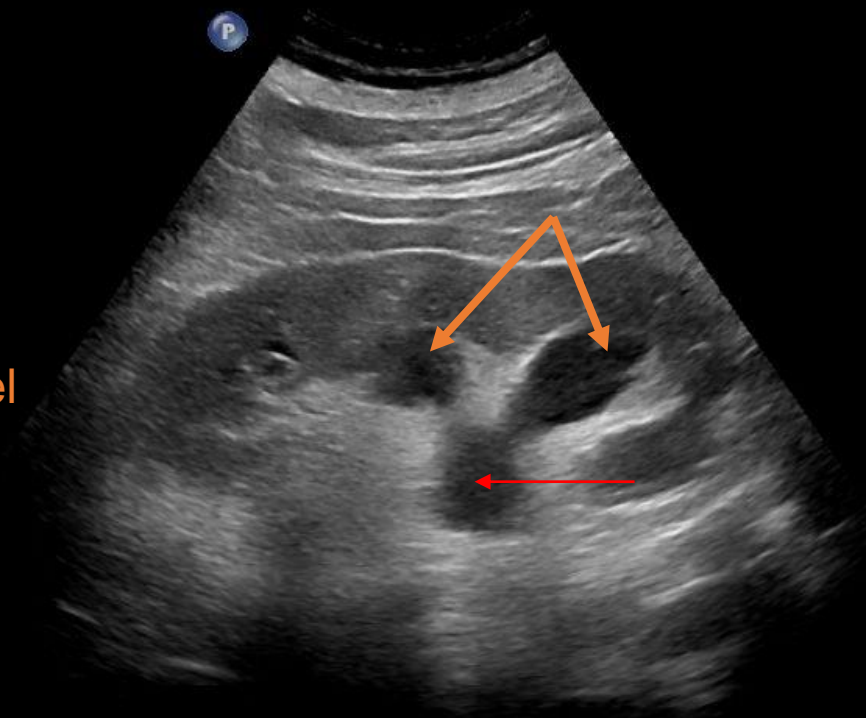
*** bpm

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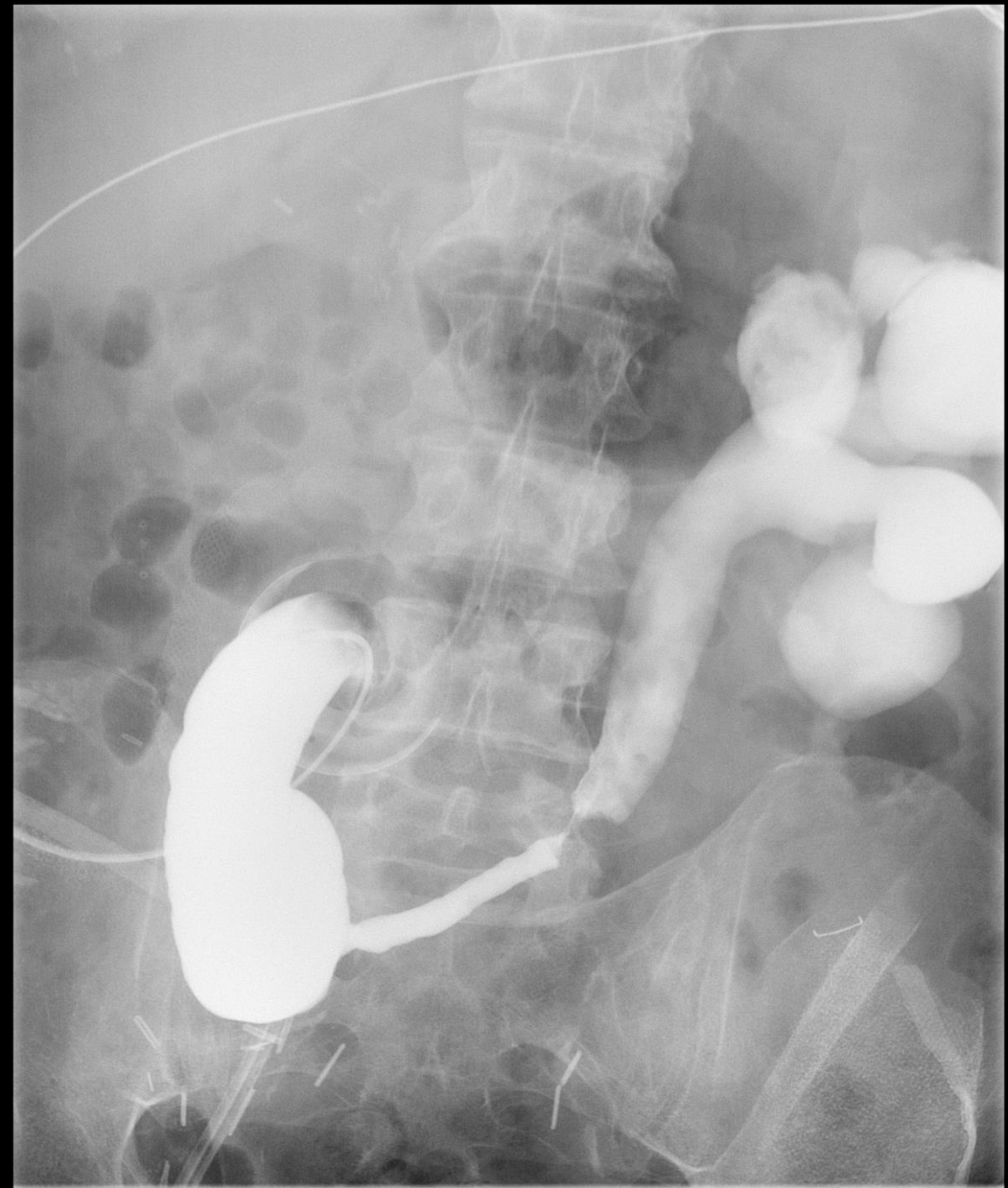
1150.2 MI 1.3



Dilated calyces with low level
internal echoes
Dilated renal pelvis

Long Left Kidney LAT - MED

Findings: (unlabeled)

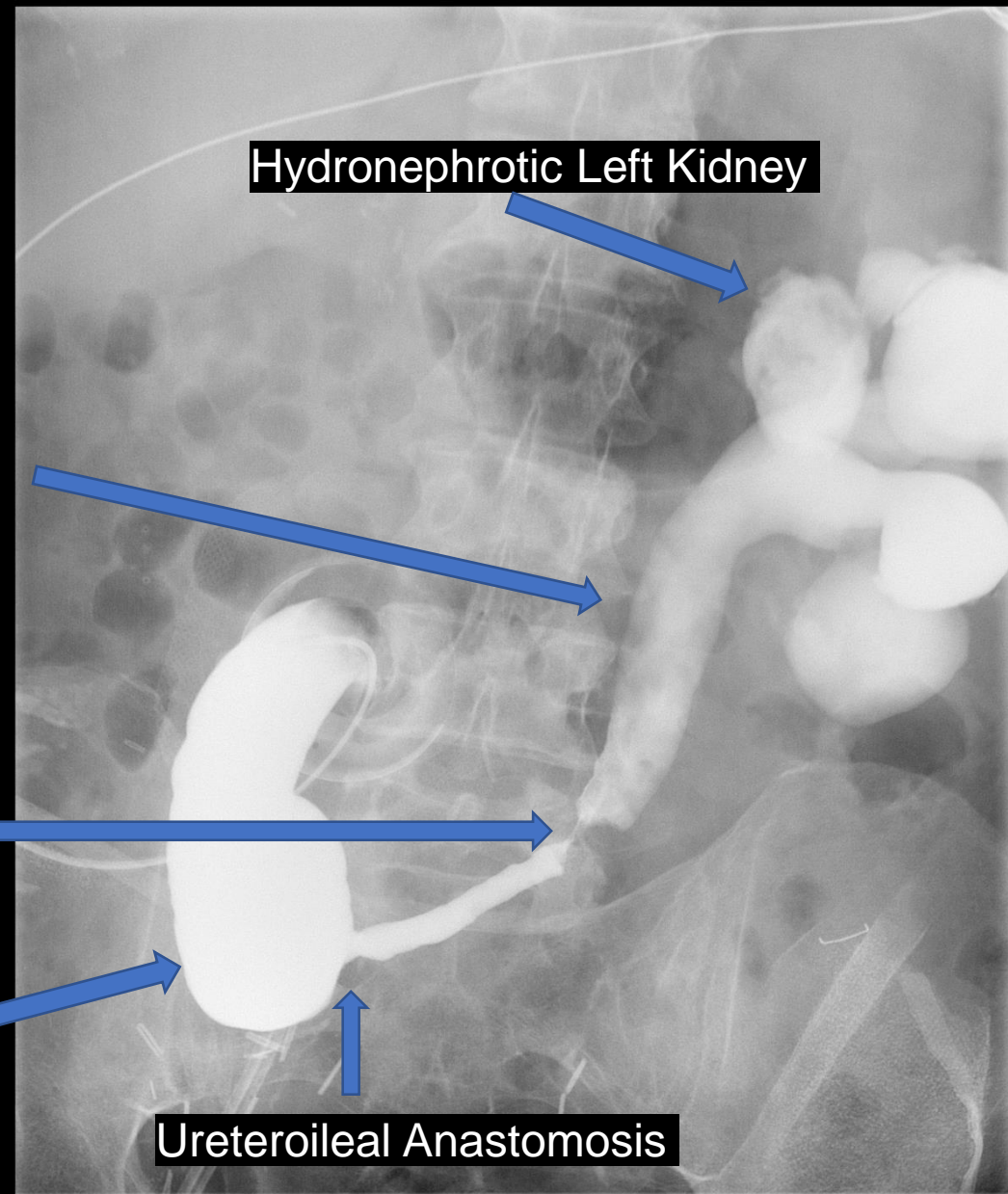


Findings (labeled)

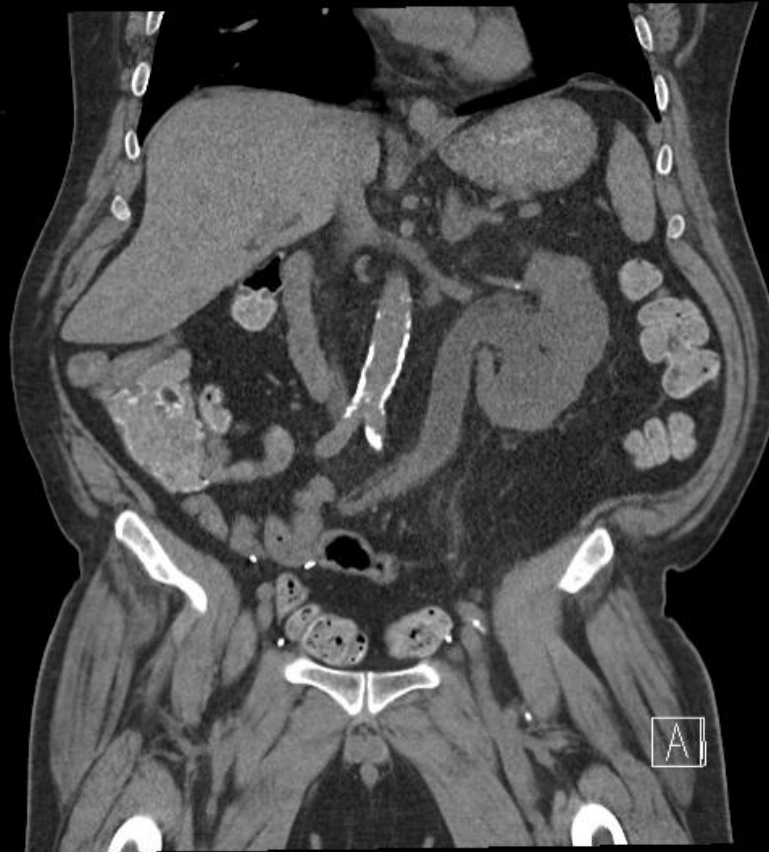
Dilated proximal ureter
with luminal filling defects

Short segment high grade stricture of the mid ureter
with **smooth shouldering**

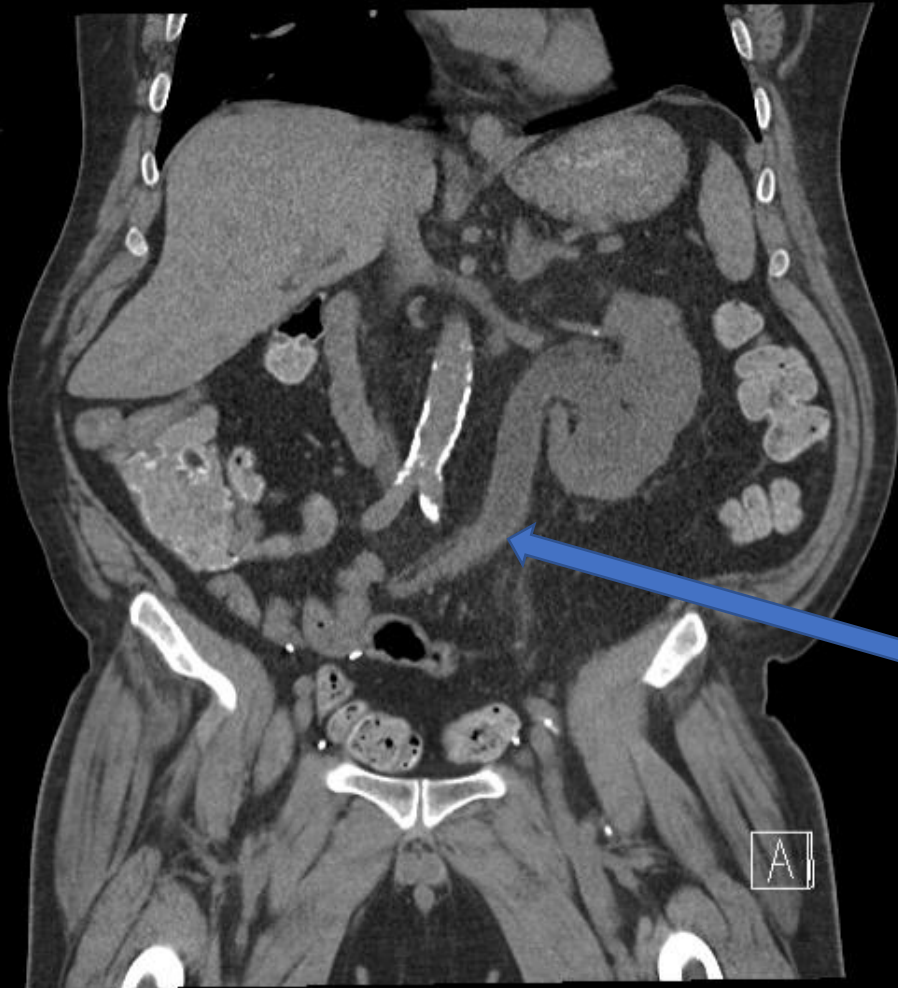
Neo (ileal) bladder



Findings (unlabeled)



Findings (labeled)



**Corresponding findings on CT
-subtle soft tissue rind surrounding the mid ureter**

Final Dx:

Ureteroileal Stricture

Ureteroileal Stricture

Etiology: Ureteroileal stricture is a complication of urinary diversion after radical cystectomy for both benign and malignant etiologies. Benign causes include ischemia, structural issues at the distal anastomosis, stones, or infections. Malignant causes are most commonly due to tumor recurrence.

Clinical Presentation: Usually asymptomatic but can present as acute kidney injury – sudden anuria, diminished urine output, elevated Cr

Differential Diagnosis: Tumor recurrence, ureteroileal ischemia, nephrolithiasis, urinary tract infection, post-op anastomotic stenosis

Ureteroileal Stricture (cont.)

Diagnosis: Elevated creatinine and findings on renal ultrasound, non-contrast CT, and loopogram; however, tissue sampling is required for definitive diagnosis

Treatment: Balloon dilation, endoscopic incision, nephroureteral stent (NUS) placement, or open surgical revision are all treatment options, but there is no gold standard and therapy is patient-dependent.

Outcome & Significance

The outcome of this case was **placement of a nephroureteral stent** from the renal pelvis to the external urostomy pouch by interventional radiology as both serve as therapeutic and bridging treatment.

The significance of this case is in highlighting differentiation of benign and pathological/malignant ureteroileal strictures. In this case, pathology was not obtained but the morphology of **distinct cornered edges with “shouldering”** suggests the likely etiology being a tumor recurrence. This case utilized **loopogram** to aid in stricture classification, as this modality allows for dynamic evaluation of the stricture.

References:

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