

Case Presentation: 80 Year Old Woman with Sepsis of Unknown Etiology

Riley Pflomm, MS 3

Clinical History

- 80 year old female who was recently admitted for hypothermia and fall
- Transitioned to short term rehabilitation and eventually home the week prior
- Brought to the ED by her sister with fever and altered mental status where she was discovered to be non verbal and unresponsive to sternal rub

Clinical History

- PMH: Intellectual disability, DM2, HTN, hyperlipidemia, hypothyroidism, DVT (on Eliquis)
- PSH: None
- Medications: Docusate sodium (100 mg), Synthroid (175 mcg), pantoprazole (40 mg), apixaban (5 mg), atorvastatin (20 mg), ferrous sulfate (325 mg), metformin (1000 mg)
- NKDA
- Social Hx: Patient lives with sister who is her primary caregiver

In the ED

- In ED, febrile with T max 103.1, tachycardic, tachypneic
- Soft BPs → Received 2 1Liter LR boluses. Also received: 1 dose of Ceftriaxone and Vancomycin
- Normal WBC, low Hb of 8.1, Lactic acid of 2.4, K/Mg/Ca low (repleted via IV), BUN/Cr 33/1.8, UA indicating possible UTI
- Blood / Urine Cultures drawn
- Imaging performed including chest radiograph, CT of the head without intravenous contrast, CT of the chest, abdomen, and pelvis without intravenous contrast (due to renal insufficiency)
- Chest Radiograph and CT of the Head were Normal

Labs

White Blood Cell Count	4.0 - 11.0 Thou/uL	9.4	Glucose	Ref Range & Units 65 - 99 mg/dL	1mo ago 173 ▲
Platelet Count	150 - 450 Thou/uL	177	Blood Urea Nitrogen (BUN)	8 - 21 mg/dL	33 ▲
Hemoglobin	11.7 - 15.7 g/dL	8.1 ▼	Creatinine	0.4 - 1.1 mg/dL	1.8 ▲
Hematocrit	35.0 - 47.0 %	26.2 ▼	eGFR	>59	27 ▼
Red Blood Cell Count	4.00 - 5.40 Mil/uL	2.90 ▼	Comment: MDRD in mL/min/1.73 sq meters.		
MCV	80 - 100 fL	90	GFR - African American	>59	33 ▼
MCH	27.0 - 31.0 pg	27.9	Comment: MDRD in mL/min/1.73 sq meters.		
MCHC	30.0 - 36.0 g/dL	30.9	Sodium	136 - 145 mmol/L	144
RDW	11.5 - 14.5 %	15.6 ▲	Potassium	3.4 - 5.3 mmol/L	2.7 ▼
MPV	9.4 - 12.5 fL	9.7	Comment: Critical result called to and read back by ILANA PRENOVITZ MD AT 1833 022321 BY LBAILEY		
Myelocytes	%	1	Chloride	96 - 107 mmol/L	111 ▲
Bands Man	%	15	CO2	22 - 33 mmol/L	20 ▼
Neutrophils Man	%	80	Calcium	8.7 - 10.5 mg/dL	7.9 ▼
Comment: Vacuolization present			Alkaline Phosphatase	32 - 122 U/L	109
Lymphocytes Man	%	2	Aspartate Aminotrans (AST)	10 - 50 U/L	14
Monocytes Man	%	2	Alanine Aminotrans (ALT)	10 - 50 U/L	6 ▼
Abs Myelocytes	0 Thou/uL	0.1 ▲	Bilirubin, Total	0.2 - 1.0 mg/dL	0.3
Abs Neutrophils Count (ANC)	2.0 - 7.5 Thou/uL	8.9 ▲	Protein, Total	6.3 - 8.3 g/dL	6.0 ▼
Abs Lymphocytes Man	1.5 - 4.5 Thou/uL	0.2 ▼	Albumin	3.4 - 4.8 g/dL	2.8 ▼
Abs Monocytes Man	0.2 - 1.5 Thou/uL	0.2	BUN/Creatinine Ratio	10.0 - 25.0 Ratio	18
Cell Count		100	Globulin	1.5 - 3.9 g/dL	3.2
Hypochromia		Occasional			
Ovalocytes		Occasional			

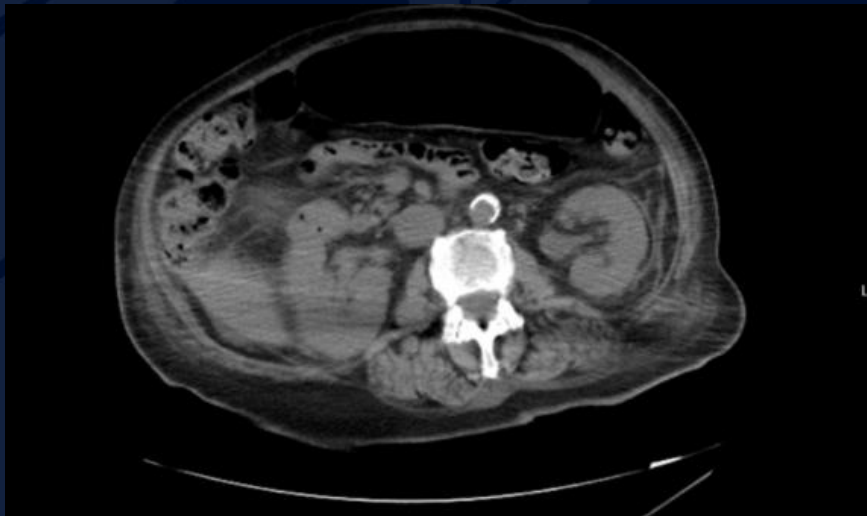
Specimen:	Ref Range & Units	1mo ago
Color		Cath-straight
Clarity		Yellow
Specific Gravity	1.003 - 1.030	Cloudy
pH	5.0 - 8.0	1.005
Leukocyte Esterase	Negative	7.0
Nitrite	Negative	Large !
Protein	Negative	Negative
Glucose	Negative mg/dL	Moderate (100 mg/dL) !
Ketones	Negative	Negative
Blood	Negative	Large !
Bilirubin	Negative	Negative
Resulting Agency		Hospital

Urine Cultures

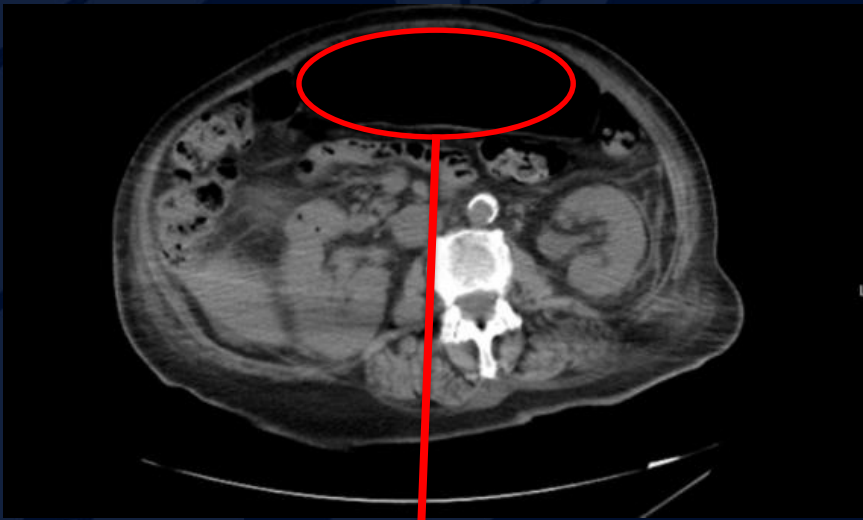
Component	
Source	Cath-straight
Culture	Proteus mirabilis >=10,000 col/mL. !
Status	02/25/2021 FINAL
ORGANISM:	Proteus mirabilis
	Comment: Proteus mirabilis >=10,000 col/mL.
METHOD:	Susceptibility
Augmentin	! (S)
Ampicillin	! (I)
Cefazolin	! (S)
Ciprofloxacin	! (S)
Gentamicin	! (S)
Levofloxacin	! (S)
Nitrofurantoin	! (R)
Tetracycline	! (R)
Tobramycin	! (S)
Trimeth/Sulfamethoxazole	! (S)
Ampicillin/Sulbactam	! (S)
Tigecycline	! (R)
Ceftaroline	! (S)
Resulting Agency	Hospital

	Ref Range & Units	Time ago
WBC	0 - 4 per hpf	>25 ^
RBC	0 - 4 per hpf	10 ^
Bacteria	Absent	Present !
Crystals		Absent
Resulting Agency		Hospital

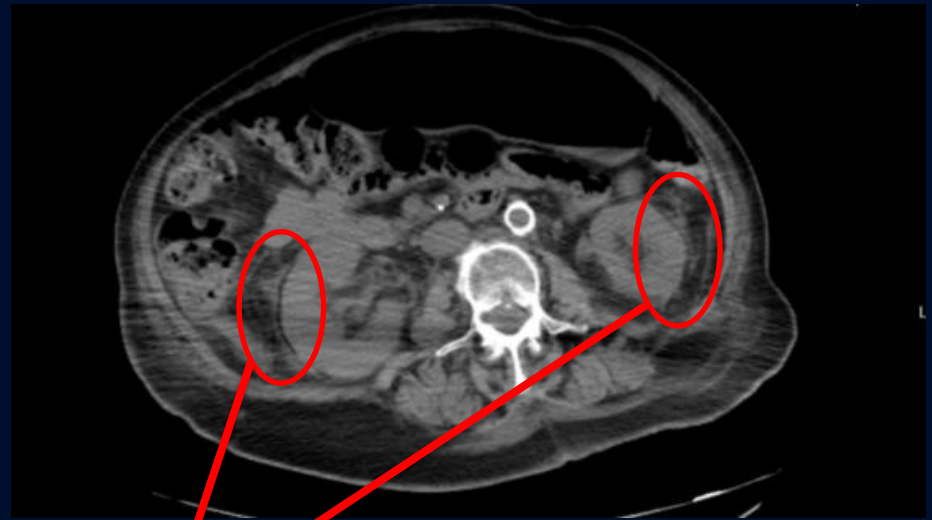
CT of the Abdomen and Pelvis



CT of the Abdomen and Pelvis

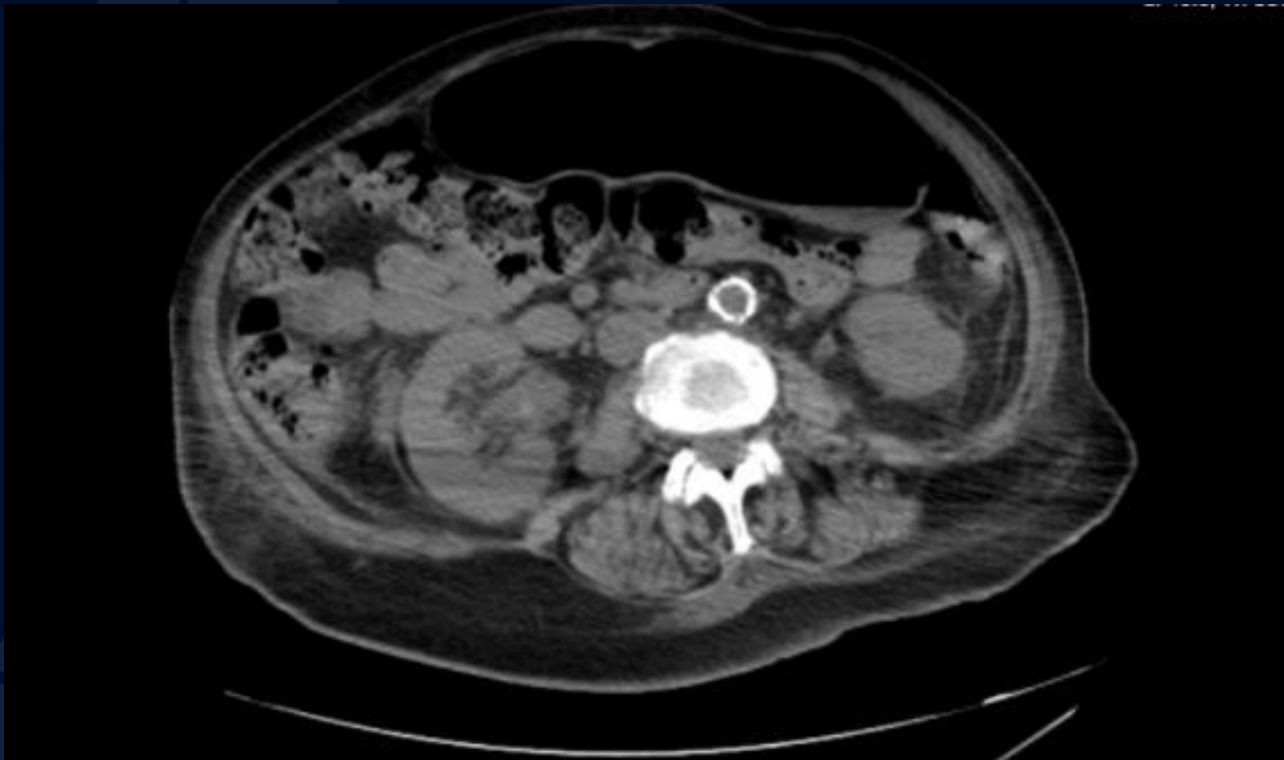


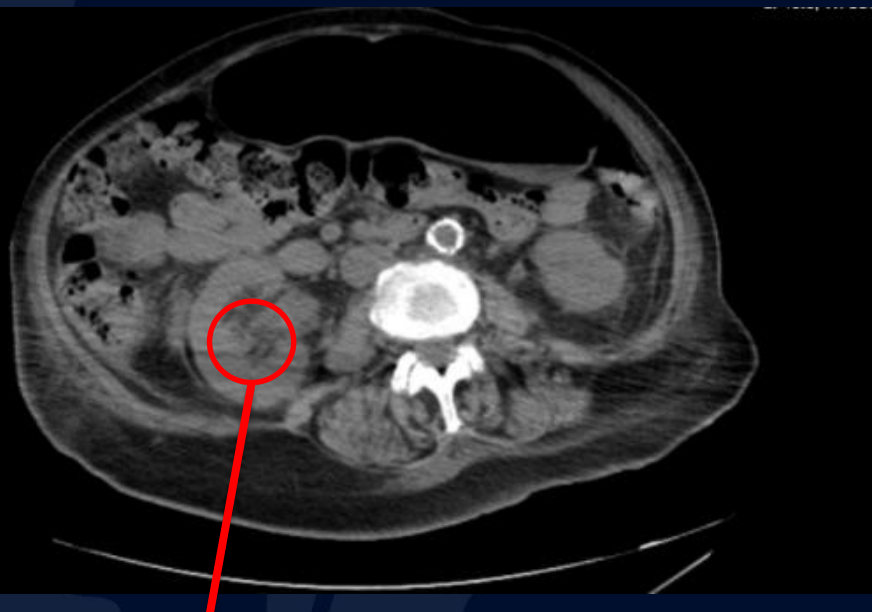
Large
Volume of
Bowel Gas



Nonspecific
Perinephric Fat
Stranding

CT of the Abdomen and Pelvis



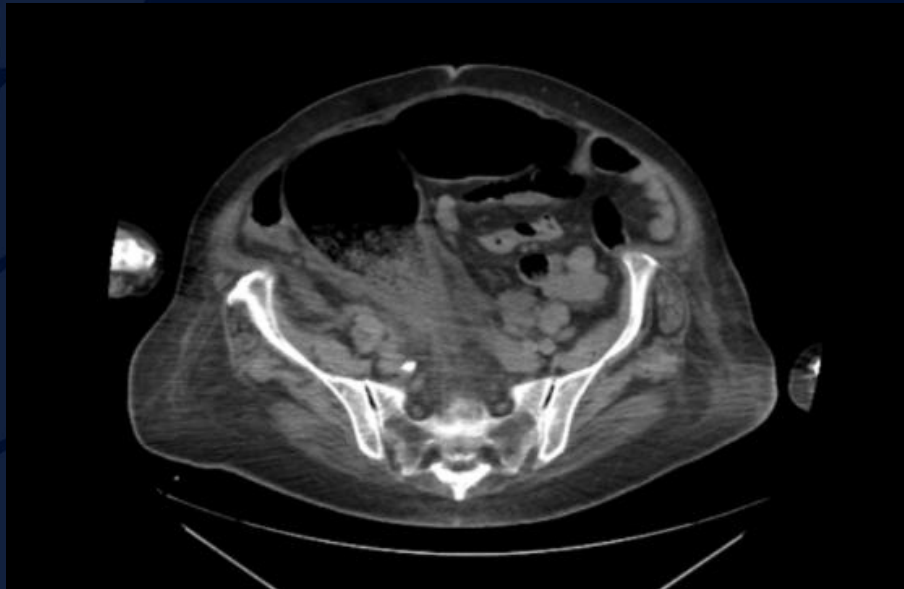


Mild
Prominence of
Right Renal
Pelvis

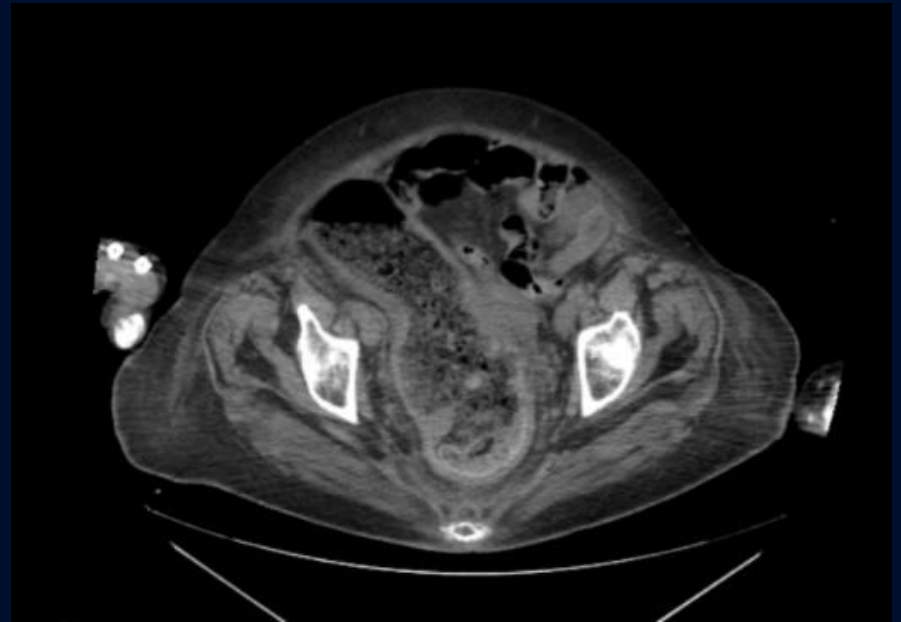
Final Reading

- Pleural thickening along posterior chest wall bilaterally. No evidence of focal consolidation, pleural effusion, or pneumothorax
- No mediastinal mass or lymphadenopathy
- No pericardial effusion
- **Nonspecific perinephric fat stranding noted bilaterally**
- **Mild prominence of right renal pelvis**

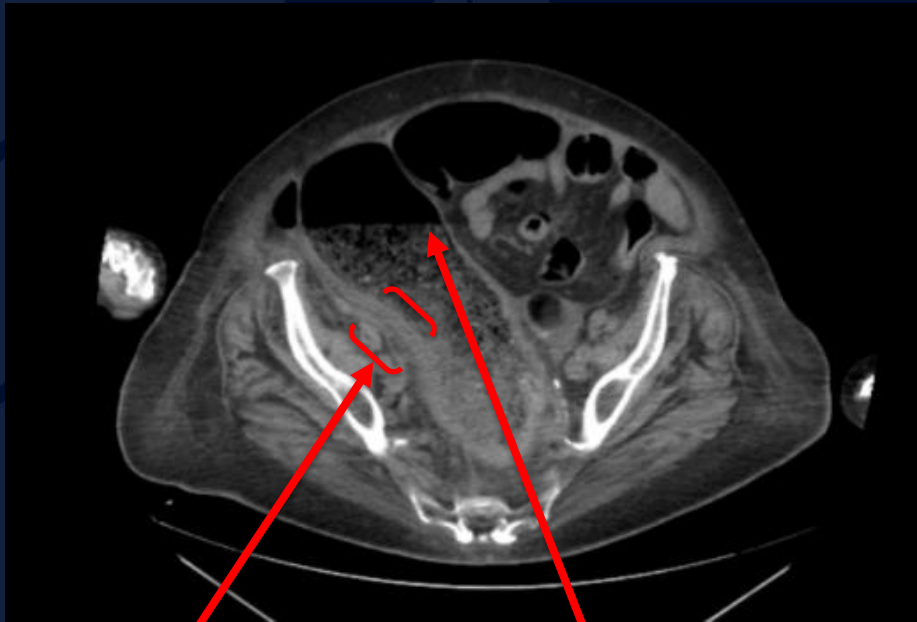
CT of the Abdomen and Pelvis



CT of the Abdomen and Pelvis

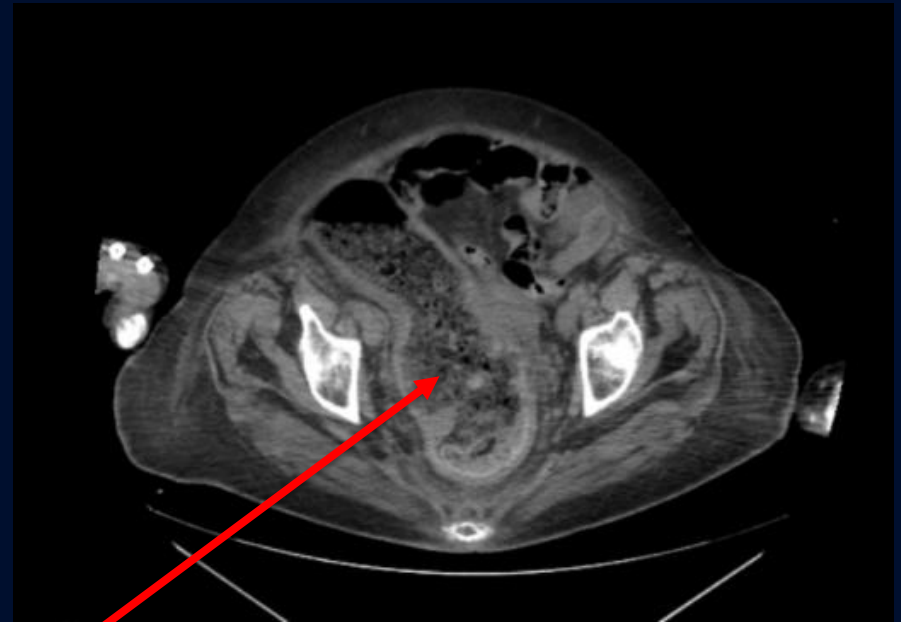


CT of the Abdomen and Pelvis



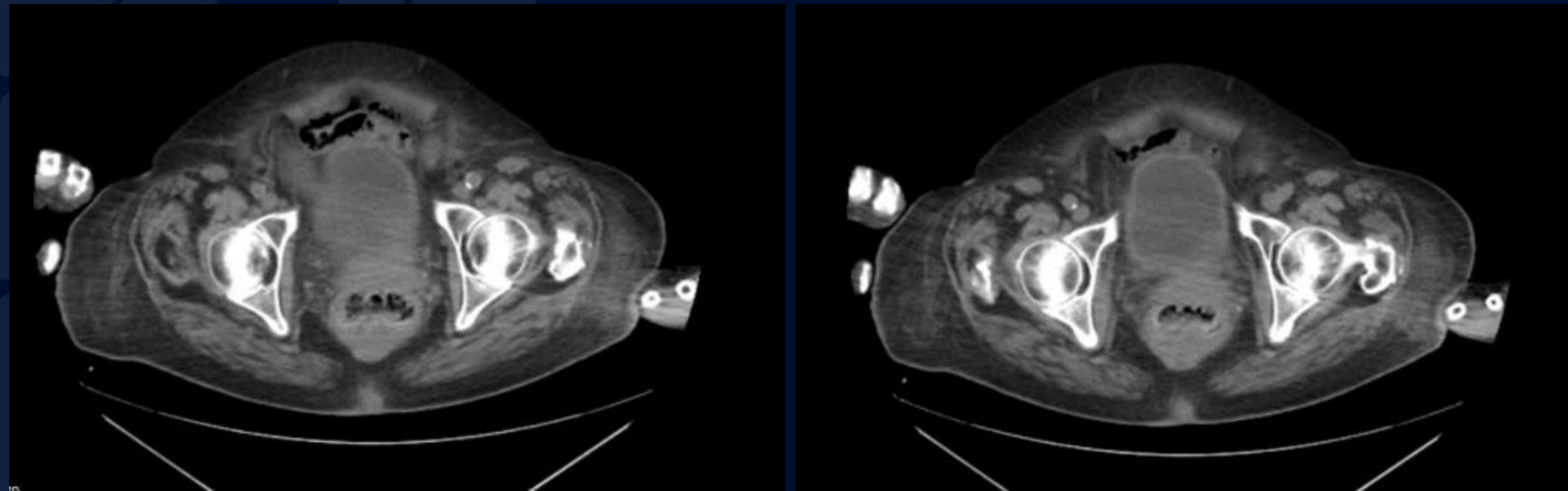
Wall Thickening of
the Sigmoid Colon
with Surrounding
Fat Stranding

Transition from
Gas to Fecal
Impaction

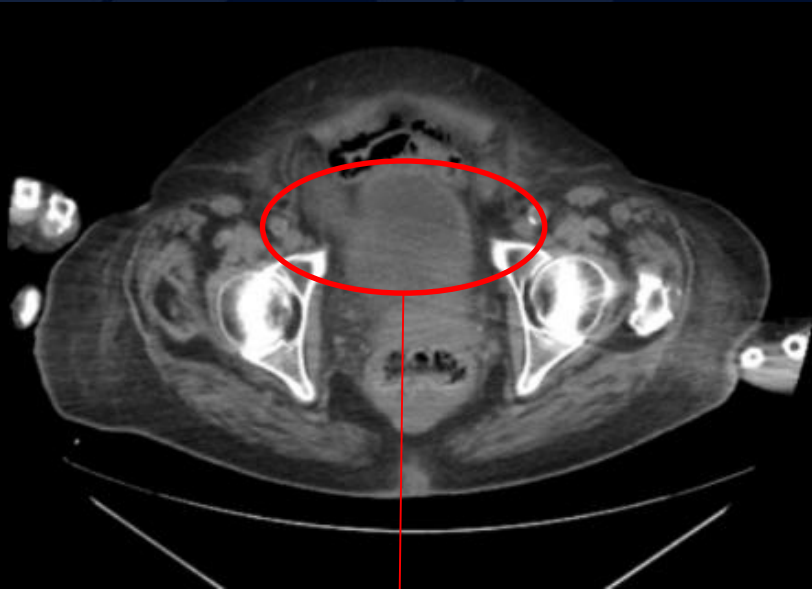


Rectosigmoid
Distension

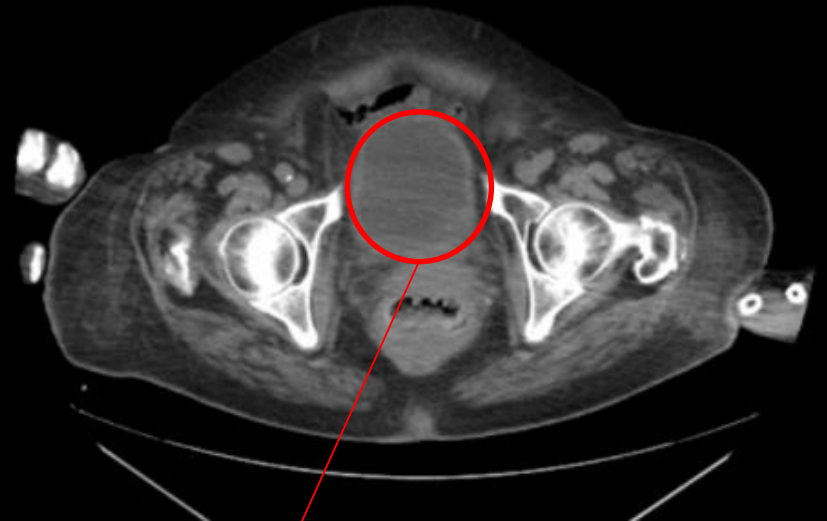
CT of the Abdomen and Pelvis



CT of the Abdomen and Pelvis



No Obstructing
Ureteral Calculus



Normal
Urinary
Bladder

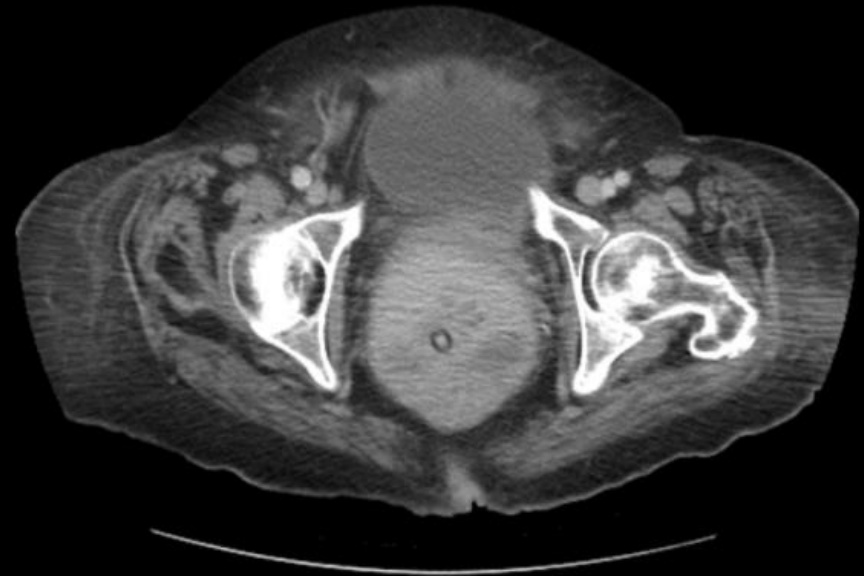
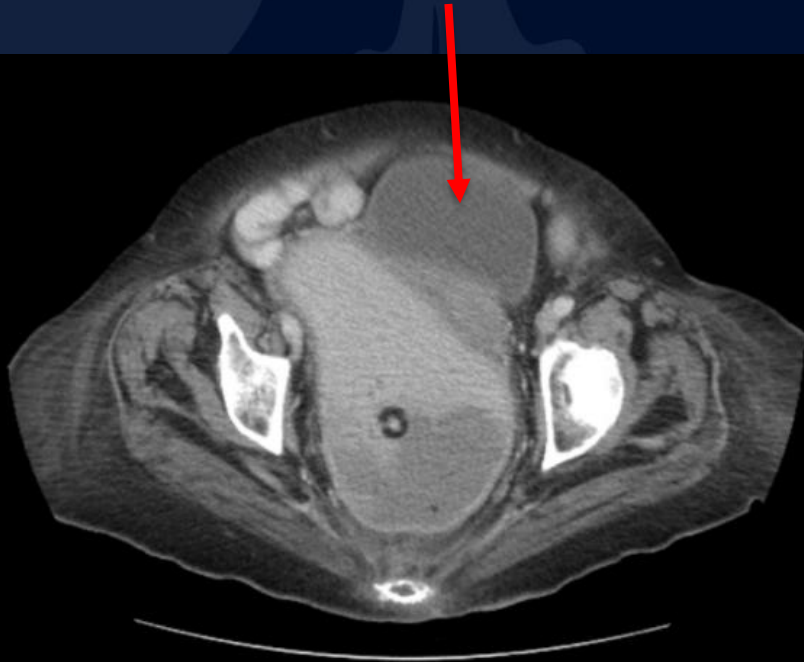
Final Reading

- Normal liver, gallbladder, spleen, adrenals, and pancreas
- Non-obstructing bilateral renal calculi
- Mild bilateral hydroureteronephrosis
- Normal urinary bladder
- Rectosigmoid colon is distended, 8 cm in diameter with wall thickening and adjacent fat stranding → fecal impaction / constipation with stercoral colitis
- Normal small bowel
- Appendix is normal
- No pneumoperitoneum

CT of the Abdomen and Pelvis



Urinary bladder anteriorly
displaced by the distended
rectosigmoid colon



- Small bowel unremarkable with rectum/sigmoid colon dilation noted
- Dilation likely due to chronic constipation/fecal impaction and appears unchanged from previous images
- Proximal colon normal in caliber and appearance

Blood Cultures

Component	1mo ago
Source	Peripheral
Gram stain suggestive of	Gram negative rod
Gram stain suggestive of	Performed at Hartford Hospital Ancillary Laboratory, Newington, CT CT License 0385 CLIA 07D0094387
Culture	Proteus mirabilis Aerobic and Anaerobic bottle positive. !
Status	02/26/2021 FINAL
ORGANISM:	Proteus mirabilis
Comment: Proteus mirabilis Aerobic and Anaerobic bottle positive.	
METHOD:	Susceptibility
Augmentin	! (S)
Ampicillin	! (I)
Cefazolin	! (I)
Ceftriaxone	! (S)
Ciprofloxacin	! (S)
Gentamicin	! (S)
Levofloxacin	! (S)
Tetracycline	! (R)
Tobramycin	! (S)
Trimeth/Sulfamethoxazole	! (S)
Ampicillin/Sulbactam	! (S)
Tigecycline	! (R)
Ceftaroline	! (S)

Component	1mo ago
Source	Peripheral
Gram stain suggestive of	Gram negative rod
Gram stain suggestive of	Performed at Hartford Hospital Ancillary Laboratory, Newington, CT CT License 0385 CLIA 07D0094387
Culture	! Proteus mirabilis Aerobic and Anaerobic bottle positive. Complete identification and susceptibility of the same isolate, if appropriate, performed on only one blood culture collection per day.

Conclusion

- Blood cultures returned positive for gram negative bacteremia in all 4 bottles (proteus mirabilis) as were urine cultures with a similar sensitivity pattern from her most recent hospitalization
- Suspected Etiology: Patient was previously noted to have had proteus UTI during last admission. We suspected that her stercoral colitis/chronic constipation caused bladder obstruction leading to a UTI and subsequent bacteremia/sepsis
- Patient was given GOLYTELY with good response, and improved from a sepsis standpoint although significant distension was still noted
- Transitioned to rehab with aggressive bowel regimen, oral potassium supplementation(for persistent low potassium likely secondary to bowel regimen), and oral antibiotics to complete a 14 day course of antibiotics for proteus sepsis/bacteremia