AMSER Case of the Month: November 2018

73 year-old male with suprapubic pain and recurrent urinary tract infection

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Patient Presentation

- HPI: 73yo male presents to ED with dysuria, urinary frequency, and suprapubic pain x2 days. He reports history of multiple urinary tract infections, with most recent UTI treated 2 weeks ago with Augmentin. Denies nausea, vomiting, diarrhea, constipation, fever, chills.
- Medical History: Osteoarthritis, Cataracts, GERD, Prediabetes, Hypertension, Hyperlipidemia
- Surgical History: Cataract Extract, Total Knee Joint Replacement, Tonsillectomy. Results of last colonoscopy unknown, but medical record reports next screening colonoscopy due May 2022.
- Medications: Lisinopril, Aspirin, Metformin, Metoprolol, Atorvastatin

Pertinent Physical Exam:

BP 106/73, HR 81, RR 18, T 97.8F, SpO2 98% RA, BMI 26.1
Abdomen: Minimal suprapubic tenderness to palpation. No abdominal guarding or rebound tenderness. No CVA tenderness.
Remaining exam unremarkable.

Pertinent Labs:

CBC

WBC 18.86 (4.4-11.3 k/mcL)
Hgb 12.3 (14-17.4 g/dL)
Hct 36.9 (41.5-50.4%)
Plt 246. (145-445 k/mcL)
MCV 90.4
Neutrophil 85 (37-77%)

UA

Amber, cloudy
WBC too numerous, +LE
RBC 10-25 (0-4/hpf)
No bacteria seen, Neg Nitrite
2+ Protein, Negative glucose
Urine Culture Pending

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

Variant 2: **Acute pyelonephritis. Complicated patient (eg, diabetes or immunocompromised or history of stones or prior renal surgery or not responding to therapy). Initial imaging.**

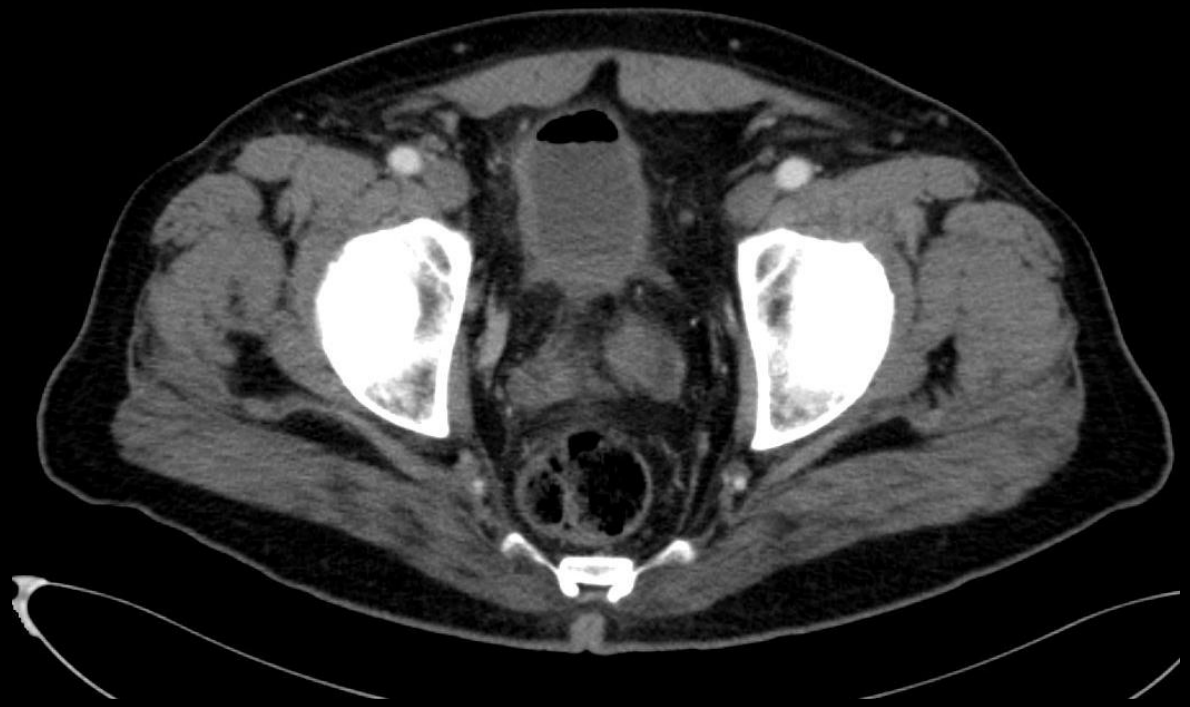
Procedure	Appropriateness Category	Relative Radiation Level
CT abdomen and pelvis with IV contrast	Usually Appropriate	☢☢☢
CT abdomen and pelvis without and with IV contrast	Usually Appropriate	☢☢☢☢
MRI abdomen without and with IV contrast	May Be Appropriate	O
CT abdomen and pelvis without IV contrast	May Be Appropriate	☢☢☢
MRI abdomen and pelvis without and with IV contrast	May Be Appropriate (Disagreement)	O

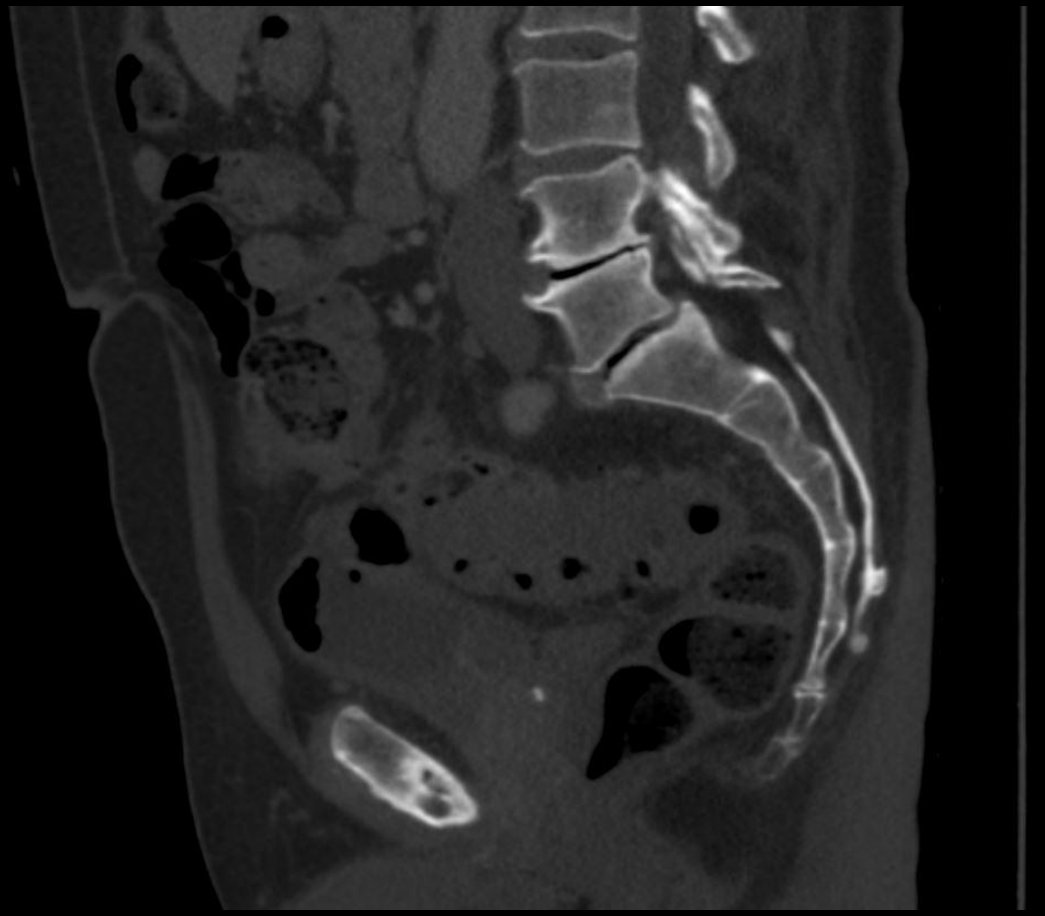
This imaging modality was ordered by the physician

Discussion:
The patient is afebrile and does not have flank pain; however, he is prediabetic with history of recurrent urinary tract infection (UTI) not responding to antibiotics.
The ACR classification for recurrent UTI is specifically for women, and is therefore not applicable in this case.
While the patient does have hematuria per his UA, his workup was done primarily to evaluate complicated UTI, most appropriately placing him into this ACR category.

AMSER

Findings (unlabeled)





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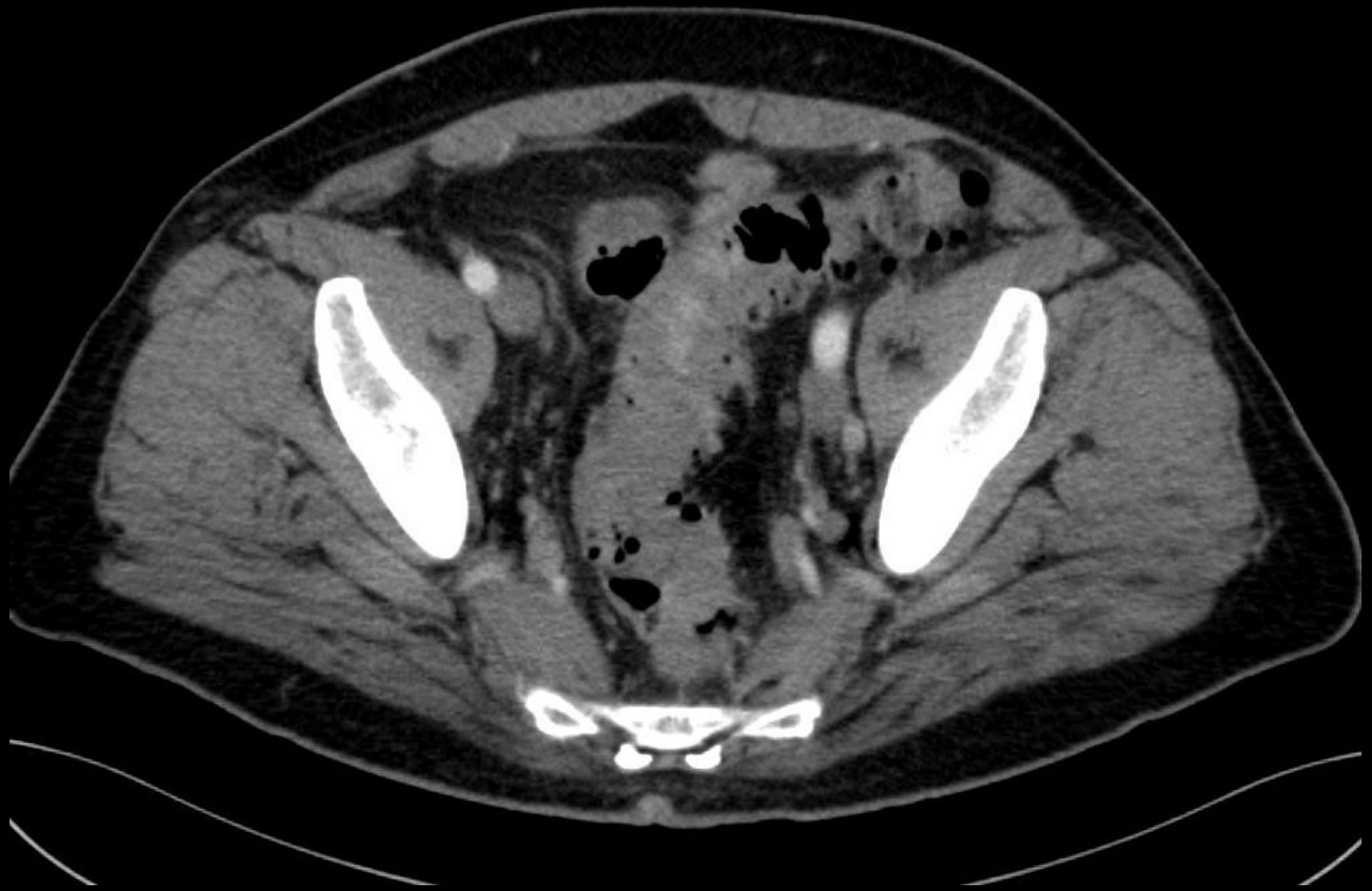

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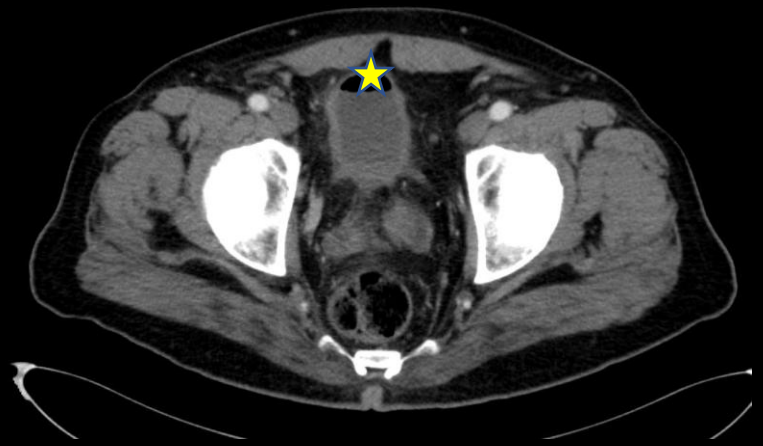
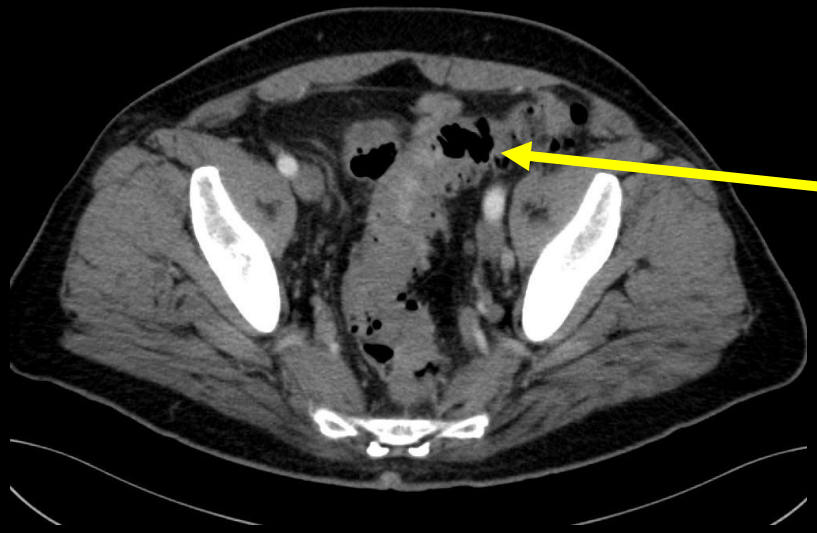
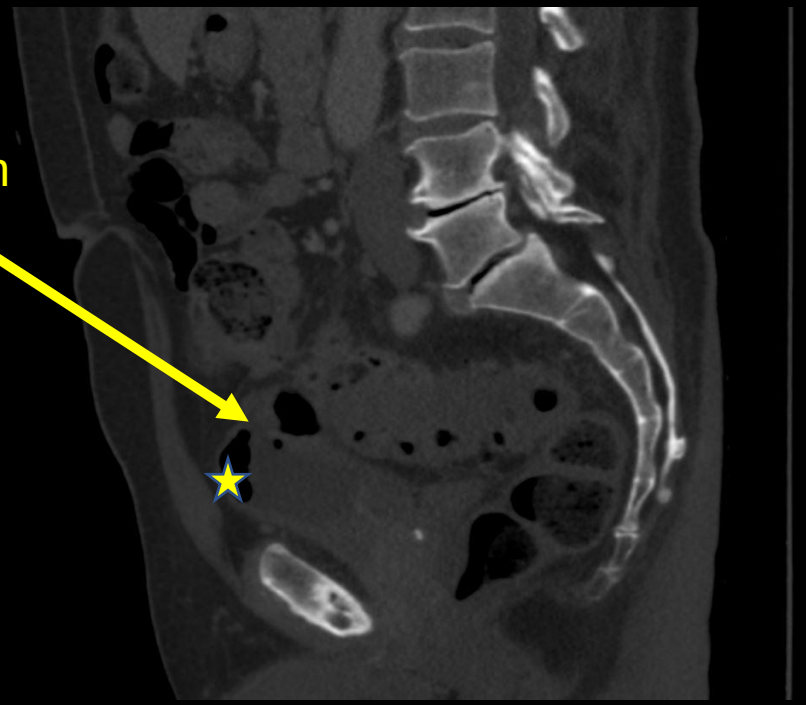


Air in the bladder (★)



Multiple colonic diverticula

Communication between bladder and colon



Final Dx:
Colovesical Fistula with Diverticular Disease

Case Discussion

Etiology of free air in the bladder:

- Iatrogenic: May be secondary to recent instrumentation, such as cystoscopy
- Trauma
- Fistula formation between bladder and air-containing lumen of adjacent structures
- Gas-forming infection, such as emphysematous pyelonephritis

Case Discussion

Colovesical Fistulas are communications between the colon and the bladder, either directly or via a communicating abscess cavity.

Underlying causes:

Diverticulitis: most common ~60%
Colorectal Cancer ~20%
Crohn Disease ~10%
Radiotherapy
Appendicitis
Trauma

Clinical Presentation:

Pneumaturia, fecal material in the urine, recurrent UTI, passage of urine from the rectum.

Case Discussion

Radiographic features of colovesical fistula:

- CT will show presence of air in the bladder, and will less likely demonstrate direct visualization of the tract itself.
- A contrast enema is most likely to show the actual fistula.
- Both CT and contrast enema studies may demonstrate the underlying cause (diverticula, mass lesion, change of Crohn disease.

Treatment and Prognosis:

Surgical resection of the fistula and abnormal bowel segment is usually required for cure. In cases of advanced malignancy, palliation with diverting colostomy may be performed.

References:

American College of Radiology. ACR Appropriateness Criteria®. Available at https://acsearch.acr.org/list. Accessed September 28, 2018.

Bell, DJ. (2018, February). Colovesical Fistula. Retrieved October 2018 from https://radiopaedia.org.

Strickland, M. Colovesical fistulas. In: UpToDate, Post, TW (Ed), UpToDate, Waltham, MA, 2018.